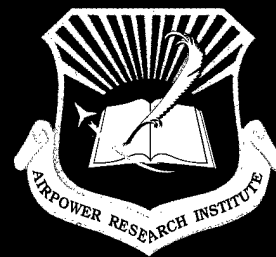


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Testing the Aerospace Expeditionary Force Concept:
An Analysis of AEFs I-IV (1995-97) and the Way Ahead

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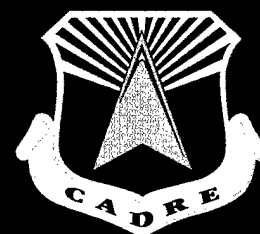
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Executive Summary

During the period 1995-97, the deployment of four Aerospace Expeditionary Forces (AEFs) to Bahrain, Jordan, and Qatar (x2) served as useful tests of the AEF concept first broached in its latter-day incarnation soon after "Operation Vigilant Warrior" in the Persian Gulf in 1994. Responding to a manifest need to be able to rapidly deploy aerospace power to deter or to halt aggression against U.S. interests abroad, USAF leadership has designed and implemented a new organizing concept for service culture and operations – the Expeditionary Aerospace Force (EAF).

The deployments of AEFs I – IV to the Middle East provided experience, data, and "lessons learned" that have since been incorporated into the EAF design. Based on available unclassified information, this study first comparatively considers the strengths and weaknesses of the aerospace expeditionary force concept evinced in the four deployments of 1995-97. Then, factoring in additional accounts of participants and the views of other writers, the author mines the accumulated evidence for analytical insights around six issue categories: planning, diplomatic preparation, force protection, logistics, command and control, and training and education.

The study concludes that force protection and logistics are the most vexing challenges confronting architects and implementers of the EAF concept. Force protection may indeed prove to be too hard and too expensive in some cases. A way around that dilemma is provided by the "flexbasing" strategy recommended by a group of RAND analysts and somewhat modified by the current author. Finally, this study is meant to provide the basis for two spin-off studies of AEF "diplomatic preparations" and the unconventional weapons threat facing future expeditionary forces in the Persian Gulf, both forthcoming this year from CADRE/Airpower Research Institute.

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Section 1: Introduction

At the time of this writing, the United States Air Force is in the process of transitioning into the Expeditionary Aerospace Force (EAF) envisioned over five years ago and announced in August 1998¹ as the new organizing concept for service culture and operations. The EAF transition formally began 01 October 1999 with designated Aerospace Expeditionary Forces (AEFs) 1 and 2 taking on deployment commitments.² Their replacements, AEFs 3 and 4, are in the middle of the now standard 90-day rotation schedule with the EAF having officially achieved "Initial Operational Capability" effective 01 January 2000.³

The realignment of people, aircraft, and equipment into ten AEFs, two crisis response Aerospace Expeditionary Wings (AEWs), and five Lead Mobility Wings (LMWs) arguably represents the most fundamental reorganization of the USAF since its birth as an independent service in 1947.⁴ While having a date-specific implementation of 01 January 2000, this reorganization of the U.S. Air Force into an Expeditionary Aerospace Force has been in reality an evolutionary process with identifiable milestones in the 1990s and roots in USAF history extending all the way back to its beginnings.

The Air Force has always been "expeditionary" in the sense that it has historically taken the fight to the enemy, whether Pancho Villa in Mexico; the Germans in World War I Europe; the Japanese in Burma, the Philippines, and the Pacific; or the Nazis and Italian fascists in North Africa and Europe.⁵

According to Richard G. Davis of the Air Force History and Museums Program, "the painfully slow response to the outbreak of the Korean War led to the USAF's first attempt to institutionalize a *rapid* response force."⁶ That initiative led to development of the Composite Air Strike Force (CASF), a small tactical force composed of a command element; fighter, reconnaissance, tanker, and troop carrier aircraft; and communications

¹ Then Acting Secretary of the Air Force, F. Whitten Peters, and Chief of Staff General Michael E. Ryan, announced the EAF reorganization on 04 August 1998. See Bruce D. Callander, "The New Expeditionary Force," *Air Force Magazine*, September 1998, p. 54.

² "AEFs 3, 4 Successfully Deploy," *Policy Letter Digest*, Office of the Secretary of the Air Force, January 2000, p. 5.

³ "Expanded Expeditionary Aerospace Force (EAF) Guidance to Supplement the FY00 Force Structure Announcement," 4 March 1999, <http://www.eaf.dtic.mil/eafpag399.html>.

⁴ Specifics of the EAF reorganization plan will be presented and evaluated in Section 3 of this paper.

⁵ See Steven J. Arquette, et al. "The Expeditionary Aerospace Force Concept: Evolution, Discussion, and Issues," Maxwell AFB, AL: Air Command and Staff College Research Paper, April 1999, pp. 6-9. On the subject of military expeditionary forces of the past, see U.S. Air Force, Airpower Research Institute (CADRE/AR), "The Air Expeditionary Force in Perspective," ARR Occasional Paper No. 1. Maxwell AFB, AL: 15 January 1999, and Airpower Research Institute, "Expeditionary Warfare: The World Wars," ARR Paper No. 2, 14 April 1999.

⁶ Emphasis added. "Immediate Reach, Immediate Power," Air Force History and Museums Program, 1998, p. 13.

support units.⁷ As with the current AEF concept, emphasis was placed on rapid deployment of decisive airpower anywhere in the world. “Once the CASF concept was fully implemented by the late 1950s, the first strike elements of a CASF could arrive in the Middle East within 16 hours of notification with the total force in-place and ready for operations in 48 hours.”⁸ Figures for the more distant Far East were arrival within 36 hours and full force operational status within 72 hours.⁹

On 8 July 1955, the Tactical Air Command activated the command element of the CASF, the 19th Air Force, nicknamed within the service “The Suitcase Air Force.” With only about 85 military personnel and half a dozen civilians, the 19th AF staff prepared contingency plans and provided the command structure for CASF deployments anywhere in the world. Before its disestablishment in 1973 for reasons of economy, the CASF concept was employed during several foreign contingencies, most notable among them the dual crises of 1958: the Lebanon Crisis in July and the Taiwan Straits Crisis over Quemoy and Matsu in August.¹⁰

Capitalizing on the responsiveness of the CASF, the Department of Defense established U.S. Strike Command (STRICOM) in 1961, headquartered at MacDill AFB in Tampa. Composed of elite Army Strategic Command (STRACOM) and Air Force Tactical Air Command (TAC) units, Strike Command was designed to “send a small package of forces immediately to the [trouble] area, subject, of course, to the political acceptability by the existing Government of such a move.”¹¹

STRICOM eventually morphed into the Rapid Deployment Joint Task Force (RDJTF), a four-service reservoir of forces for non-NATO contingencies, summoned into existence to lend credibility to the Carter Doctrine of 1980 regarding opposition to outside interference in the Persian Gulf. The USAF contribution to the RDJTF consisted of several tactical air wings and a conventionally-armed bomber force of B-52Hs. The United States Central Command (CENTCOM) was stood up on 01 January 1983 to replace the RDJTF. From its inception, CENTCOM has relied on the mobility and combat power of the U.S. Air Force.¹²

Next among the lineal ancestors of the AEF was the “composite wing” concept of the early 1990s. Successful operations of the 7440th Composite Wing (Provisional) based out of Incirlik Turkey during Desert Storm resulted in the formation of two composite wings following the Gulf War: the 366th at Mountain Home AFB and the 23rd at Pope AFB. General Merrill A. McPeak, when Air Force Chief of Staff, was an advocate of the composite wing concept. Economic imperatives – the mixed aircraft types proved expensive to support without economies of scale – resulted in deactivation of the 23rd

⁷ Ibid.

⁸ Ibid.

⁹ Ibid.

¹⁰ Content of this paragraph is based on *ibid.*, pp. 14-16 *passim*.

¹¹ Michael J. Nowak, “The Air Power Expeditionary Force: A Strategy for an Uncertain Future?” Maxwell AFB, AL: Air War College Research Report, April 1999, p. 18. The author quotes Frank Harvey, *Strike Command*. New York: Meredith Press, 1962, p. 4. Nowak’s study is also available as *The Air Expeditionary Force*, Maxwell AFB: Air University Press, The Maxwell Papers, No. 19, September 1999.

¹² Details of this paragraph are based on Arquette et al., pp. 12-14. The Rapid Deployment Joint Task Force dates to 01 March 1980.

Wing, though the 366th remains to this day the only extant composite wing in the USAF.¹³

Most commentators mark 1994 as the pivotal year for the current AEF concept. In October of that year, the Air Force rushed a formidable force of fighters and bombers to the Persian Gulf in "Operation Vigilant Warrior" when Iraqi forces of Saddam Hussein made new and threatening moves toward Kuwait.¹⁴ "The US had long since removed the bulk of its Desert Storm assets from the theater and was forced to make a hasty return to the theater with enough forces to credibly deter a replay of Iraq's 1990 invasion"¹⁵

The quick return of major air assets proved to be critical in deterring Saddam, but it also proved to be a major challenge for the Air Force. Brig Gen (now Maj Gen) William R. Looney III has remarked that the deployment in 1994 was "not as crisp as it should have been It didn't go as well as we wanted."¹⁶ General Ronald R. Fogleman, then Air Force Chief of Staff, assigned to the commander of Air Combat Command the task of putting together a concept for an air expeditionary force more responsive than the Vigilant Warrior task force. Heading up the effort was then Lt Gen John P. Jumper, 9th Air Force commander and Commander, CENTAF (Central Command Air Force Component).¹⁷ General Jumper is widely credited as being "father of the AEF" in the sense of being its principal advocate and demonstrating its feasibility through a series of test deployments in the CENTCOM area of responsibility (AOR).

If General Jumper is the father of the AEF, then General Michael E. Ryan, current Air Force Chief of Staff, is the "father of the Expeditionary Aerospace Force" – the EAF. In a recent interview, General Fogleman acknowledged that General Ryan has taken the original expeditionary force concept a step further by extending the concept of operations to the entire Air Force.¹⁸ But before making the implementation announcement in August 1998 noted above, General Ryan had the benefit of a series of test deployments which proved the feasibility of the concept and provided preliminary lessons learned which could be incorporated into the EAF design as recently

¹³ Ibid., p. 16.

¹⁴ See, for example, Eric Robinson, "Jumper talks about AEF concept," *Air Force News*, May 1996, http://www.af.mil/news/May1996/n19960510_960446.html, and John A. Tirpak, "The Expeditionary Air Force Takes Shape," *Air Force Magazine*, June 1997, p. 30.

¹⁵ Tirpak, *ibid.*

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ Marcelyn Atwood, Frederick H. Martin, and Mark O. Schissler, "Certain Options for an Uncertain Peace," unpublished manuscript prepared for the National Security Fellows Program, JFK School of Government, Harvard University, 15 April 1999, pp. 16-17.

implemented. Yet, a more systematic comparative analysis of the mid-90s test deployments is warranted.

The following section of this study successively examines the first four AEF deployments – all to the Middle East during the period 1995-97. Section three of this study then considers the strengths and weaknesses of the AEF concept evinced in the four deployments, and section four offers in conclusion some analysis-based proposals for improving the concept and its initial implementation.

Section 2: Four Tests of the AEF Concept, 1995-97

AEF I: Bahrain, 28 October – 18 December 1995

The first test of the new Air Expeditionary Force concept, AEF I, was under the command of Col Randy Honnet, USAF. It deployed 18 fighter aircraft to Bahrain's Shaikh Isa Air Base, spanning the period 28 October –18 December 1995. Originally scheduled to deploy on 10 October, the Force was delayed for over two weeks by political and diplomatic problems, thus underscoring the show-stopping potential of access restrictions. Senior U.S. officials wanted to send about 30 aircraft, but Bahraini authorities agreed to only 18, ostensibly because a 30-plane force would exceed in size Bahrain's entire air force.

The AEF consisted of six F-16CJs from Shaw AFB and 12 F-16Cs from Moody's 347th Wing and it totaled 576 people. The aircraft and people from Shaw were already in theater, having deployed on 30 September to nearby Qatar where they had participated in exercises.¹⁹ During more than seven weeks of operations from Bahrain, AEF I flew 673 sorties – an average of nearly 100 a week.

Operations got off to a slow start as the fighters arrived before some essential supporting elements. Use of a "CE [civil engineering] follow-on package rather than [a] robust initial set up team ...slowed down [the] initial tent city build-up resulting in delays in OPS priority needs," according to Col Honnet.²⁰ To expedite erection of 80 tents, Col Honnet committed 220 people for 48 hours. This effort would have impacted flight operations even more negatively if some of the fighters had not been delayed 24 hours in their arrival by a weather hold. "A bare base won't handle [an AEF] support needs to arrive before [the] fighters."²¹

To further complicate matters, the site survey arrived late – well *after* Col Honnet had landed in Bahrain. "[The] site survey needs to be proactive in determining requirements and equipment necessary to accomplish [the] mission based on existing support and terrain factors."²² Col Honnet recommends that the "initial site survey should place more emphasis on munitions storage and disposal, environmental problems, and aircraft parking requirements"²³

¹⁹ Steven Watkins, "Expeditionary force moves fast: Short-notice deployment is being tested in Bahrain," *Air Force Times*, 6 November 1995, p. 3.

²⁰ "Lessons Learned" paper received from Col Honnet 21 January 1999, p. 2.

²¹ Col Honnet provided details and opinions in this paragraph during talks at the Airpower Research Institute (CADRE/AR) and the Air War College on 21 January 1999 and 17 February 1999, respectively. He was also interviewed by the author on 12 December 1999. Col Honnet advises at least five days lead time to ensure the tent city is built before fighters and other support personnel arrive ("Lessons Learned" paper, p. 5).

²² *Ibid.*

²³ "Lessons Learned" paper, p. 2.

For AEF I, the total transportation package was described as “inadequate,”²⁴ and characterized by less than optimal phasing/sequencing. In addition to disadvantageous orders of arrival (e.g., operations personnel arriving before support), there were “many cases of people in theater and no equipment or vice versa.”²⁵ The suggested remedy: “match people and equipment on home station departure.”²⁶

Finally, while there were both predictable and unanticipated problems associated with this first test of the new expeditionary concept, AEF I must be judged a successful beginning. It was *not* the short-notice deployment envisioned by Expeditionary Aerospace Force theorists. AEF I planning extended back about three months before deployment, to August 1995 at 9th Air Force Headquarters.²⁷ But it did succeed in demonstrating the feasibility of deploying and sustaining a significant airpower package to a distant and austere location, and returning it expeditiously to home bases.

AEF II: Jordan, 12 April – 28 June 1996

Second in the series of AEF test deployments during the 1995-97 period was a two-and-a-half-month deployment to Jordan, 12 April – 28 June 1996. Commanded by then Brig Gen William R. Looney III, USAF, AEF II was roughly double the size of its Bahrain predecessor with a total of almost 1,200 people and 34 aircraft. Included were 12 F-15Cs from the 94th Fighter Squadron at Langley AFB, 12 F-16CGs from the 68th FS at Moody, six F-16CJs from the 389th FS at Mountain Home, and four KC-135Rs from the 96th Air Refueling Squadron at Fairchild.²⁸ The fighters were bedded down at Shaheed Mwaffaq Air Base near Azraq, Jordan – hereafter referred to as “Azraq” – about 45 miles northeast of Amman. The KC-135s were based 25 miles northeast of Azraq at Prince Hassan Air Base, but the tanker personnel lived at the Azraq base.

The invitation to deploy to Jordan is said to have resulted from several factors, among them the success of AEF I in Bahrain. The Jordanian Crown Prince visited Bahrain during that deployment and reportedly was favorably impressed by the training benefits and infrastructure enhancements enjoyed by the Bahraini Air Force as a consequence of the Americans’ presence.²⁹ Furthermore, the Jordanians were then expecting delivery of 16 F-16s (12As and 4Bs) – since received from the U.S. – and they were also thought to be anxious to restore close relations with Washington after the strains caused by Amman’s perceived tilt toward Saddam Hussein in the 1991 war over Kuwait.³⁰

²⁴ Ibid., p. 9.

²⁵ Ibid., p. 4.

²⁶ Ibid.

²⁷ Col Honnet’s Air War College talk, 17 February 1999.

²⁸ Pat McKenna, “Air Jordan,” *Airman Magazine*, August 1996, and Clint Williams, “AEF operating successfully in Jordan,” *Air Force News*, May 1996.

²⁹ Honnet, AWC talk, 17 February 1999.

³⁰ COL Michael Shaw, USA, USDAO in Amman during deployment of AEF II, interviewed at CENTCOM Headquarters, 05 November 1998. According to McKenna (“Air Jordan”), more than 100 AEF maintainers were paired up with their Royal Jordanian Air Force counterparts in a joint training program in F-16 maintenance and service.

From the American perspective, the deployment of AEF II would be a timely test of the emerging AEF concept and would also facilitate coverage of Operation Southern Watch (OSW) mission requirements during the anticipated gap (14 May – 24 June) in aircraft carrier presence in the region. Five hours after the fighters arrived in Azraq the AEF conducted its first combat sorties, and during the two-month period from 12 April – 10 June 1996 it recorded more than 1,450 combat and training missions combined.³¹

In contrast to the AEF I deployment, “all the tents [were] up and ready when the main body of the AEF arrived” in Jordan.³² “Our ... civil engineers ... and our advance team did a great job of preparing the site where we built our tent city. They also installed the essentials, such as electricity, plumbing, and an adequate water supply.”³³ Arguably—also in contrast to AEF I in Bahrain—AEF II went well beyond “the essentials” in fashioning a home in the desert. According to one report, AEF II’s services squadron: operated a field exchange that sold an average of 60 cases of soda and eight cases of candy and chips daily; ran a recreation center with a 10-machine videogame room that also loaned out games, cards, and sporting equipment; managed a 24-hour library, a 24-hour satellite television tent, and a movie tent with two large screen TVs; and oversaw a golf course driving range, horseshoe pits, and a gym and weight room.³⁴ Other diversions included an ice cream maker, and a swimming pool loaned by the Jordanians.³⁵

According to AEF II commander, General Looney, “there are a lot of misconceptions about what an AEF is Some people think AEFs can go anywhere. They cannot.”³⁶ “Looney noted that the rapid transit and sortie generation times belie the extensive preparation that supports an AEF operation.”³⁷ In the case of the Jordan AEF, the U.S. Air Force needed several months’ preparation to get required diplomatic clearances and to bring Azraq Air Base up to requirements.³⁸

A significant proportion of the reports captured by JULLS (Joint Uniform Lessons Learned System) commented directly or indirectly on the consequences of the “dual-base, one wing concept of operation” that characterized the AEF II deployment. Contrary to the case of AEF I, tanker aircraft were integrated into the wing organization of AEF II. Rather than utilizing existing theater tanker assets, AEF II relied on an attached squadron of four KC-135Rs, the 92nd Air Refueling Squadron (ARS).

³¹ McKenna, “Air Jordan.”

³² Quoting Col Terry Thompson, 4417th Support Group commander, in Williams, “AEF operating successfully in Jordan.”

³³ Ibid.

³⁴ Pat McKenna, “Services increases ‘hang time’ in desert,” *Airman Magazine*, August 1996.

³⁵ Ibid.

³⁶ John A. Tirpak, “The Expeditionary Air Force Takes Shape,” *Air Force Magazine*, June 1997.

³⁷ Quoting Tirpak, *ibid.*, p. 31.

³⁸ Ibid.

In the estimation of the 92nd ARS commander, “unless operationally necessary, the use of existing theater tanker assets should be considered before integrating KC-135s in future AEF organizations. Robusting existing theater assets could take advantage of existing tanker infrastructure and resources. If a combined AEF is operationally necessary, AMC should have senior leadership (O-6) representation on the AEF wing staff.”³⁹

The commander continues: “if tankers must integrate in the AEF wing structure, they should be collocated, rather than dispersed If dispersal is required, the tanker base should be a stand-alone organization (including billeting)”⁴⁰

The reasons for the tanker commander’s preferences, stated above, were apparent in a series of JULL reports on subjects ranging from security to chain of command to dual-base operations. Negative consequences of the separate basing of tankers (at Prince Hassan AB) and fighters (at Azraq AB) were reported as follows: (1) “The 60 mile round trip commute on a crowded ...two-lane road posed a serious security risk, particularly during the drive through the city of Azraq. An increased terrorist threat would have made the daily commute extremely dangerous and could have severely impacted tanker operations.”⁴¹ (2) The six-days-a-week commute from billeting to the tanker base added two hours to the 12-hour workdays of the tanker aircrew and support personnel, subjecting them to fatigue and boredom and depriving them of “a daily face-to-face prebrief/debrief between the fighters and tankers.”⁴² (3) It was expensive to move tanker personnel between the two bases.⁴³ (4) Separate operating locations created logistical problems regarding parts, services, and meals.⁴⁴ (5) “Poor telephonic communication between Azraq and Prince Hassan severely impacted command and control of tanker forces.”⁴⁵ (6) “With a dual base concept, 50 percent of the tanker personnel were dangerously exposed to potential no-notice chemical attacks since they were displaced from their chemical gear protection which was stored at the MOB. The only option would have been to transport the C-bags to and from work each day.”⁴⁶

In summary—and in contrast to AEF I—AEF II was well served by advance teams that more thoroughly prepared for deploying forces; AEF II created a less austere base environment; and AEF II tested the concept of dual-base, one wing operations.

³⁹ Lt Col Dale G. Cook, USAF, Commander, 96th ARS, in JULL #91157-25081 dated 9/9/96.

⁴⁰ JULL #91157-29355 dated 9/9/96.

⁴¹ JULL #69934-98900 dated 9/9/96.

⁴² JULL #02950-64828 dated 9/28/96.

⁴³ Ibid.

⁴⁴ JULL #02950-66102 dated 6/28/96.

⁴⁵ JULL #91157-29355 dated 9/9/96.

⁴⁶ JULL #91157-30508 dated 9/9/96.

AEF III: Qatar, 02 July – 20 August 1996

Before the main body of AEF II arrived in Jordan, CINCENT had already requested (on 8 April 1996) that another AEF be sent to his AOR to further validate USAF capabilities to rapidly reinforce the U.S. posture in Southwest Asia. On 17 April, the Chairman, JCS, with approval of the Secretary of Defense, ordered the deployment of AEF III to Doha, Qatar.⁴⁷ Twelve F-16Cs, already stationed in the Gulf, arrived in Qatar on 24 June 1996. Eight days later, 2 July, F-15Es and F-16Cs and CJs deployed from the U.S. bringing the total to 34 fighters, four tankers, and around 1,200 personnel.⁴⁸

The aircraft from the U.S. flew sorties in support of Operation Southern Watch the day they arrived. AEF III would also participate in combined operations with American partners in the Gulf and conduct joint maritime operations with U.S. naval forces in the area, flying a total of 1,323 sorties. In addition to the aircraft in theater, three B-1Bs and three B-52Hs were on permanent call. During its deployment from 02 July – 20 August 1996, AEF III became the first AEF to stage a "Global Power" mission when two of its on-call B-52Hs flew a non-stop round-trip mission from Barksdale AFB, Louisiana and dropped 27 Mk-117 bombs on the Udari Weapons Range, Kuwait.⁴⁹

Brig Gen Lance L. Smith, deploying commander of AEF III, met with returning AEF II commander Brig Gen Looney as the two officers were passing through Moron AFB, Spain. Force protection was undoubtedly a subject of great urgency as General Smith debriefed his predecessor. Just days before, on 25 June, a massive truck bomb had exploded at the Khobar Towers complex in Dhahran, Saudi Arabia killing 19 U.S. Air Force personnel and injuring about 500 Americans.⁵⁰ The attack was directed at the 4404th Wing (Provisional) under command of Brig Gen Terryl J. Schwalier, USAF, theater COMAFFOR (Commander, Air Force Forces), directly above the AEF commanders in the chain of command.

In the wake of Khobar Towers, General Smith saw his "mission changed from bombs on target to force protection."⁵¹ One hundred to 150 civil engineering personnel had been sent ahead to Qatar to prepare for the arrival of the AEF. Extensive earth berm construction measures were undertaken; fences were erected; camp layout was designed with security concerns uppermost; security patrols were mounted. "After Khobar, all force protection measures [were] authorized."⁵²

⁴⁷ Richard G. Davis, *Immediate Reach, Immediate Power*, p. 24.

⁴⁸ Ibid. Elements of the 4th Fighter Wing from Seymour Johnson AFB, the 20th FW from Shaw, and the 33rd FW from Elgin were included in the fighter force. Four KC-135Rs were provided by the 319th Air Refueling Wing at Grand Forks AFB.

⁴⁹ The on-call B-1Bs were based at Dyess AFB (5th Bomb Wing); the on-call B-52Hs were based at Minot (5th BW) and at Barksdale (2nd BW).

⁵⁰ Otto Kreisher, "To Protect the Force," *Air Force Magazine*, November 1998. See also Rebecca Grant, "Khobar Towers," *Air Force Magazine*, June 1998.

⁵¹ Maj Gen Lance L. Smith lecture at the Air War College, 17 February 1999.

⁵² Ibid.

Security imperatives soon strained AEF III manpower levels that had been established prior to the Khobar incident. "Manpower levels did not consider the build up of physical security, e.g., gate shack, concertina wire, communication wire, defensive fighting positions, etc."⁵³ Personnel demands were further complicated by the necessity of escorting all local contractors and service providers while on base and watching them continuously as they performed their various duties.⁵⁴ Sewage trucks presented a special problem. Fully aware that it had been a sewage truck that exploded at Khobar Towers, AEF III procedures were put in place requiring all such trucks to come to base empty and to undergo tank probings and inspections.⁵⁵ Security considerations not only required all personnel to perform extra duties, but all recreation activities (during the two days off each month⁵⁶) were confined to base.⁵⁷

The threat environment was not limited to possible terrorist actions. In an after-action report, the 319th Operations Group commander observed that his tanker aircraft "flew many of their sorties within Iranian threat rings and without AWACS coverage. These rings included fighter and SAM threats. After discussing options with the AEF fighters and JTF/SWA remaining air refueling was conducted in Bahrain controlled airspace"⁵⁸

Air Expeditionary Force III achieved a number of "firsts." It was the first AEF to integrate bombers into the force; the first AEF into Qatar where future access is critical; the first AEF to have to cope with the heightened threat environment after Khobar Towers, relying principally on its own resources and measures. And, as events unfolded, it became the first AEF to return with many of the same personnel and force elements to the location of its previous deployment. Doing so served as a test of how well it had prepared the Doha site for follow-on forces.

⁵³ Joint Uniform Lessons Learned (JULL) report #81335-92268 dated 8/20/96.

⁵⁴ JULL #81335-89930 dated 8/20/96. The report recommended that AEFs "deploy with sufficient people to perform escort duties or [to] perform as many services as possible with deployed forces while not using contractors."

⁵⁵ JULL #81335-10411 dated 8/20/96. JULL recommendation was to "provide a 'Dominant' sewer truck ...so field latrines can be maintained by engineers. This would help prevent future terrorist attacks."

⁵⁶ "Assignment Qatar," *Air Force Magazine*, October 1996, p. 36.

⁵⁷ JULL #81335-13156 dated 8/20/96.

⁵⁸ Col Dan R. Goodrich, USAF, JULL #32831-07299. Col Goodrich also expressed concern over an operational SA-7 threat. "Having no defense systems, the tankers used opposite direction departures to the maximum extent."

AEF IV: Qatar, 09 February – 21 June 1997

Available information indicates that the continuity between AEFs III and IV did indeed prove beneficial in almost all respects. Previous Doha site improvements were largely intact. Force protection measures – especially physical security measures – were much further advanced than at the beginning of the earlier deployment. Additional actions were taken to protect personnel and equipment. Twelve-foot double sand berms were completed; a “giant voice” warning system and surveillance cameras were activated; joint off-base patrols with Qataris were mounted.

Recent contact with Qatari officials and contractors facilitated renewed relations. Good host-nation relations and continuous coordination with the U.S. Embassy were essential to mission success in the view of General Lance Smith, 4th Fighter Wing commander, who repeated as AEF IV commander.⁵⁹

General Smith judged favorably the performance of the “Mulvey Plan,” a classified airlift plan resulting from a Pentagon conference convened by then Lt Gen John Jumper, 9th Air Force and CENTAF commander. The October 1996 conference was held after AEF III returned and three months before the AEF IV deployment which, according to General Smith, demonstrated that the Mulvey Plan “worked well” and required only “minor refinements.”⁶⁰

While “logistics support improved” from AEF III to IV, in General Smith’s view, several additional changes were desirable:⁶¹ a dedicated C-5 for the lead unit;⁶² back-up aircraft and MSTS lift; fully reconstituted Harvest Falcon equipment on hand and operational;⁶³ and tankers departing from the tasked base.⁶⁴

The “lessons learned” system incorporating inputs from the three previous AEFs both served and failed the personnel of AEF IV. For example, one JULL report states that “the squadron incorporated lessons learned from AEF III A big plus was the continuity book from the Strike Shop.”⁶⁵ However, another report complains that “lessons learned in the AEF after action report ... were not made available to our planners until the final planning conference... This was too late to help.”⁶⁶ Another report states that “unnecessary last minute problems existed in reference to publications, aircrew aids, local procedures, etc.... There was not an ‘AEF archive’ between AEFs... [W]ho retains

⁵⁹ Air War College lecture, 17 February 1999.

⁶⁰ Ibid.

⁶¹ Ibid. The following items were characterized by General Smith as “lessons learned.”

⁶² During deployment of AEF III, General Smith’s C-5 broke down at Moron and 141s were dispatched to take stranded passengers from Moron to Doha.

⁶³ A JULL report, #03871-98062 dated 5/20/97, documented the observation that “procedures for controlling, maintaining, and issuing Harvest Falcon assets to users in the field is [sic] not conducive to AEF operations Reconstitution of 4 AEW assets was not accomplished after AEF III deployment, resulting in repeat discrepancies noted. This is a repeat from AEF III deployment, Jun-Sep 1996.”

⁶⁴ Another JULL report, #76760-56717 dated 03/23/97, states that “the tankers met us at the first refueling track on the deployment over Although it worked this time, it would be convenient to have them buddy launch with us out of Seymour Johnson Air Force Base as they did on AEF III. If a departure time slip has to be made, tanker coordination occurs immediately.”

⁶⁵ JULL #76760-74154 dated 03/23/97.

⁶⁶ JULL #56898-49951 dated 05/17/97.

the corporate knowledge once we leave so the next unit does not have to start from scratch[?] Somebody at the theater level should maintain a kit to get things going – not the FW.”⁶⁷

Notwithstanding some of the negative reports, the picture on “lessons learned” awareness and dissemination is definitely a mixed picture. As successive deployments occur to the same FOL (Forward Operation Location), it is reasonable to expect that the store of accumulated experience and wisdom will grow and become more accessible.⁶⁸ Indicative of that potential is a JULL report praising “the new CENTAF playbook for Qatar” which is judged to “be a big help to future AEF planners.”⁶⁹

One bit of wisdom regarding Qatar that was painfully acquired is the possibility of torrential rain even in the most arid and desert-like locations. AEF IV was subjected to 30 inches of rain in two weeks.⁷⁰ While very unusual, it did happen and could happen again. The unexpected “monsoon” caused many problems: eight tents were destroyed; tent floors not covered by vinyl turned into “mud pits” according to one report.⁷¹ The sand berms surrounding the camp created a flooding problem; raised walkways in low lying areas also trapped water.⁷²

Concluding this look at AEF IV, seven additional items require brief mention:

- (1) There was still a lot of turbulence in TPFDD design and execution. One report seems to have identified one source of this problem: “The building of the Timed Phased Force Deployment Data (TPFDD) is being done by far too many activities, i.e. lead unit, CENTAF, ACC Functional Managers [. . .] and these activities do not always correspond with each other’s desires. This leads to confusion by the Logistics Plans Office as to what the valid taskings are.”⁷³ In the case of AEF IV, as with the previous three AEFs, there were numerous examples of late arrival, non-arrival, out-of-proper sequence arrival, or duplication of various TPFDD items. That said, a look back over the first four AEFs results in the impression that TPFDD turbulence is ameliorating over time. The way to further reduce turbulence, according to the just-cited report, is to assign the handling of TPFDD taskings to one central function. “These taskings should be downward tasked by USAFCENTAF with inputs from the units if required ...higher headquarters having inputs should ...[work through] this central function. This would eliminate numerous changes and false data being input to the TPFDD and confusion at base level as to what is the actual tasking.”⁷⁴

⁶⁷ JULL #76760-78983 dated 03/27/97.

⁶⁸ Growth and accessibility will not be achieved automatically, however. They will require systematic and conscientious efforts to develop comprehensive knowledge of various sites and force requirements.

⁶⁹ Report #56898-38922 dated 05/17/97.

⁷⁰ General Smith, 17 February 1999 AWC lecture.

⁷¹ JULL #11617-13791 dated 03/27/97.

⁷² JULL #69480-56635 dated 05/05/97. This report recommended that the next AEF to Qatar bring along pumps capable of pumping 150 to 200 gallons per minute.

⁷³ JULL #03871-55712 dated 05/20/97.

⁷⁴ Ibid.

- (2) Continuing with the theme of logistics, the pre-positioned war readiness spares kits (WRSK) were not reconstituted or re-supplied after the previous AEF deployment.⁷⁵ The recommendation: "WRSK kits need to be re-supplied after each deployment to ensure sufficient parts availability. WRSK kit inventories need to be closely scrutinized to assure kit parts and vehicle types match."⁷⁶
- (3) One operational recommendation regarding AEF composition seems persuasive: "Restructure AEF composition to include 8 SEAD support aircraft and 13 pilots. If no additional assets can be allocated to the overall AEF, reduce the air-to-air assets from 12 aircraft to 10."⁷⁷ This recommendation follows from the observation that "with only 6 Suppression of Enemy Air Defenses (SEAD) aircraft and 10 pilots, the current AEF composition is inadequate. As a result, the overall mission [Operation Southern Watch] capability was diminished, and in some cases denied."⁷⁸
- (4) Continuing with operations, AEF IV was distinguished from its predecessors by having attached bombers (off-station) which conducted an actual mission in connection with Operation Southern Watch. On 20 February 1997, a successful bomb strike was carried out against an oil tanker loading facility near Basra in southern Iraq. The bombers subsequently diverted to Bahrain.⁷⁹
- (5) AEF IV was the first in the series that employed Air National Guard assets, in this case for 45 days.⁸⁰ Twelve F-16s from the 169th Fighter Wing, McEntire ANGB participated.⁸¹
- (6) AEF IV also broke new ground in the extent to which USSPACECOM assets and support were integrated into operations. Then Brig Gen G. W. (Wally) Moorhead III, Commander Space Warfare Center, and Brig Gen Smith arranged together to deploy on board the C-141 carrying initial strike crews the MSTS (Multi-Source Tactical System). MSTS made possible en route target planning and was used to great advantage throughout the AEF IV deployment. General Smith considered

⁷⁵ JULL #03871-69043 dated 5/20/97.

⁷⁶ Ibid.

⁷⁷ JULL #76760-38085 dated 3/23/97.

⁷⁸ Ibid.

⁷⁹ General Smith, 17 February 1999 AWC lecture. General Smith said that he did not feel like he "owned the bombers" in AEF III, but felt he did in AEF IV.

⁸⁰ Ibid.

⁸¹ See JULL #91941-15042 dated 04/10/97 and JULLS #56898-66541 and #56930-73200 of 05/17/97.

SPACECOM support “vital” and opined that such support should be “an integral part” of future AEFs.⁸²

- (7) Finally, AEF IV was the first to transport, set up, and use a Tactical Sensitive Compartmented Information Facility (TSCIF). This facility greatly abetted warfighter support and force protection efforts by making available the latest targeting and counter-terrorism intelligence.⁸³

⁸² General Smith, 17 February 1999 AWC lecture, and personal interview by author 22 March 2000. Now Maj Gen Moorhead is currently (as of March 2000) Director of EAF Implementation on the Air Staff, and now Maj Gen Smith is Commander, Air Force Doctrine Center. See also JULL #62844-38188 dated 05/20/97.

⁸³ General Smith, personal interview, 22 March 2000. See also JULL #63063-58547 dated 05/20/97.

Table 1. First Four Aerospace Expeditionary Forces at a Glance

	FOL	Dates	Commander	Aircraft	Personnel	Core Element
AEF I	Bahrain	28 Oct – 18 Dec 1995	Col R. Honnet	12 F-16Cs 6 F-16CJs	576	Moody's 347th FW
AEF II	Jordan	12 Apr – 28 Jun 1996	Brig Gen W.R. Looney III	12 F-15Cs 12 F-16CGs 6 F-16CJs; 4 KC-135Rs	1,200	Langley's 1st FW
AEF III	Qatar	02 July – 20 Aug 1996	Brig Gen L.L. Smith	34 F-16Cs, CJs, and F-15Es; 4 KC-135Rs 3 B-1Bs 3 B-52Hs (on call)	1,200	Seymour Johnson's 4th Fighter Wing
AEF IV	Qatar	09 Feb – 21 Jun 1997	Brig Gen L.L. Smith	F-15/F-16 mix, inclgd ANG F-16s; tankers; 3 B-1Bs 3 B-52Hs (off station)	1,200	Seymour Johnson's 4th Fighter Wing

Section 3: Analysis

Introduction

The United States Air Force Scientific Advisory Board has defined Aerospace Expeditionary Forces (AEFs) as “tailorable and rapidly employable air and space assets that provide the National Command Authority and the theater commanders-in-chief with desired outcomes for a spectrum of missions ranging from humanitarian relief to joint or combined combat operations.”⁸⁴ This notion of an AEF is generally descriptive of the four test deployments analyzed in this study.

The Air Force Chief of Staff, General Michael E. Ryan, subsequently stated that “an AEF will consist of geographically separated operationally-linked units to provide both rotational support to ongoing operations and rapid response to crises.”⁸⁵ The “rotational support to ongoing operations” (e.g., Southern Watch and Northern Watch) will be provided during successive 90-day intervals by two of the ten AEFs now formally designated.⁸⁶ The 10 AEFs described by General Ryan are “buckets of capability”⁸⁷ from which elements can be drawn to fit the requirements of particular operations. The two on-call or crisis-response Aerospace Expeditionary Wings (AEWs)⁸⁸ will be ready for “rapid response” to “pop-up” contingencies during alternating 90-day periods corresponding to AEF ready periods. Recognizing that low-end-of-the-conflict-spectrum operations (such as humanitarian relief and peacekeeping) will be lift intensive, Air Force leadership has also designated five Lead Mobility Wings (LMWs)⁸⁹ within the 10-AEF structure to deal on a rotating basis with that special type of contingency. These five wings will be successively on call for leadership for 90-day periods with each set of two AEFs and one AEW. Finally, as one official has put it, “all bets are off” should one or two major theater wars (MTWs) arise—e.g., Allied Force or Desert Storm.⁹⁰ A large

⁸⁴ United States Air Force Scientific Advisory Board, *Report on United States Air Expeditionary Forces*, Vol. 1: “Summary,” SAB-TR-97-01, November 1997, p. vii.

⁸⁵ General Michael E. Ryan, *Commander’s NOTAM 98-4*, 28 July 1998. Also available at: <http://www.issues.af.mil/notam984.html>.

⁸⁶ See Table 2 for a listing of the Combat Lead Wings for the ten AEFs.

⁸⁷ This phrase has been used repeatedly by Air Staff XOPE briefers to characterize AEFs which are collections of various types of aircraft, unit type codes (UTCs), and support elements numbering up to 200 aircraft and 15,000 people. The ten AEFs are meant to constitute roughly equivalent conglomerates of capability, though types of aircraft and numbers of personnel may vary.

⁸⁸ See Table 2 for the two designated AEWs. The AEWs are seen as a transitory measure as the Air Force reconfigures to an EAF. The two on-call AEWs are expected to be rolled into the ten AEFs at a future time (Atwood, et al., “Certain Options for an Uncertain Peace,” p. 17.)

⁸⁹ Air Force Instruction (AFI) 10-400 dated 1 October 1999, p. 2. See Table 2.

⁹⁰ Lt Gen Lawrence P. Farrell, Jr., then Deputy Chief of Staff for Plans and Programs, quoted in Bruce D. Callander, “The New Expeditionary Force,” *Air Force Magazine*, September 1998, p. 56. Callander describes General Farrell as the “architect” of the EAF.

proportion of the entire operational Air Force will have to “surge” to meet such challenges. Only after MTW termination will the USAF be able to reconstitute into the 10/5+2 rotational alignments described above. See Figure 1 for a depiction of the 15-month life cycle of an AEF.

As discussed in the Introduction (Section 1), the notion of an expeditionary force is not new to the Air Force. What is new, however, is the conception of the entire USAF as an Expeditionary Aerospace Force (EAF) that “will organize, train, equip, and sustain itself by creating a mindset and cultural state that embraces the unique characteristics of aerospace power – range, speed, flexibility, precision – to meet the national security challenges of the 21st Century.”⁹¹ This concept, officially announced in August 1998 and fully implemented on 01 January 2000, arose out of the changing strategic environment confronting Air Force leadership in the 1990s. The end of the Cold War brought a dramatic reduction in forward basing, slashed manpower levels, and substantial reductions in military spending.⁹² The national security strategy was transformed from containment to engagement, which in turn brought a four-fold increase in operational tempo to one-third fewer Air Force assets.

As the nature of new international strategic realities and consequent national security policy transformations became clearer in the mid-1990s, Air Force leadership began a series of “field tests” of the expeditionary force package that was to become the basic deployment element of the Expeditionary Aerospace Force (EAF). AEFs I-IV were tests of the feasibility of deploying a combat aerospace force to the Middle East, given 24 hours of strategic warning and given 48 hours from the execution order to achieve effects on targets. In reality, these first four AEFs were tests of much more: planning, diplomatic preparations, force protection, logistics, command and control, and education and training. This analytical section, organized around those issue categories, reflects the author’s interpolation of available information from unclassified reports, accounts of participants, and views of other writers. Some proposals for ongoing EAF implementation will be offered throughout this section and in the conclusion.

⁹¹ AFI 10-400, 1 October 1999, p. 2.

⁹² From a mid-1980s budget high, the Air Force budget declined 40 percent in a ten-year period. Active duty personnel have shrunk from 600,000 to a projected 370,000 by 2003. Meanwhile, fighter wings have decreased to 13 active and seven Air National Guard/Reserve, while bomber assets now total 187 airframes. Overseas forward basing has been reduced by two-thirds – from 39 major military installations to 13. (Nowak, *The Air Expeditionary Force*, Maxwell Paper No. 19, pp. 4-5, citing several sources, including the Secretary of the Air Force.)

Table 2. Lead Wing Designations

COMBAT Lead Wings (Aerospace Expeditionary Forces - AEFs)

- AEF #1: 388th Fighter Wing (Hill AFB, UT)
- AEF #2: 7th Bomb Wing (Dyess AFB, TX)
- AEF #3: 3rd Wing (Elmendorf AFB, AK)
- AEF #4: 48th Fighter Wing (RAF Lakenheath, England)
- AEF #5: 355th Wing (Davis-Monthan AFB, AZ)
- AEF #6: 20th Fighter Wing (Shaw AFB, SC)
- AEF #7: 2nd Bomb Wing (Barksdale AFB, LA)
- AEF #8: 28th Bomb Wing (Ellsworth AFB, SD)
- AEF #9: 27th Fighter Wing (Cannon AFB, NM)
- AEF #10: 1st Fighter Wing (Langley AFB, VA)

Aerospace Expeditionary Wings (AEWs)

- AEW #1: 366th Wing (Mountain Home AFB, ID)
- AEW #2: 4th Fighter Wing (Seymour Johnson AFB, NC)

Lead MOBILITY Wings (LMWs)

- MLW #1: 43rd Airlift Wing (Pope AFB, NC)
- MLW #2: 60th Air Mobility Wing (Travis AFB, CA)
- MLW #3: 22nd Air Refueling Wing (McConnell AFB, KS)
- MLW #4: 319th Air Refueling Wing (Grand Forks AFB, ND)
- MLW #5: 92nd Air Refueling Wing (Fairchild AFB, WA)

(SOURCE: Air Staff)

Life Cycle of an AEF

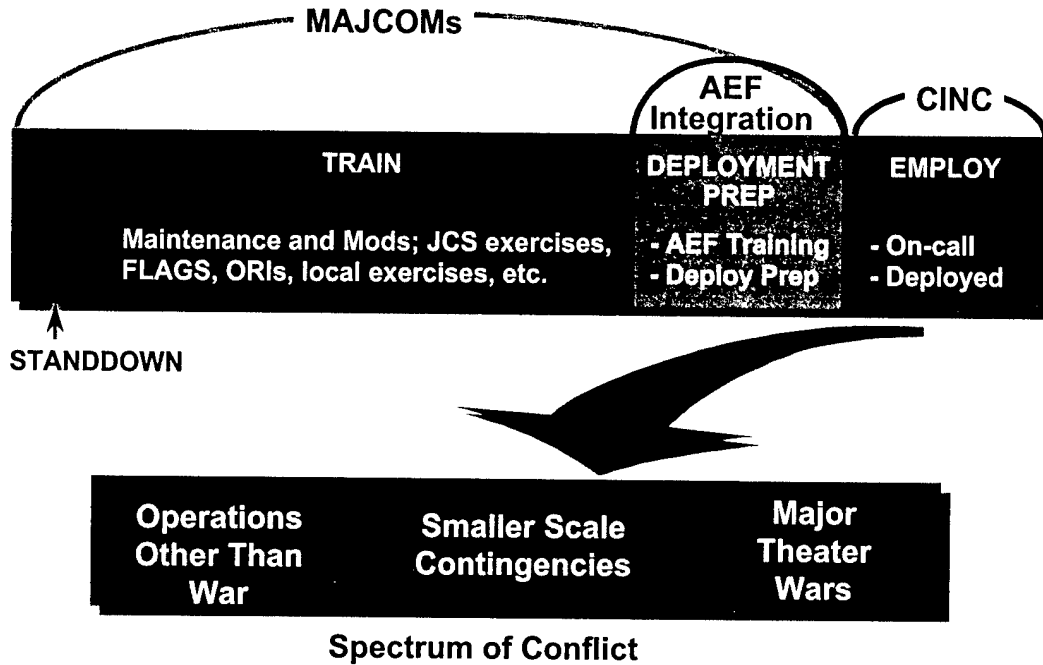


Figure 1. Fifteen-Month Aerospace Expeditionary Force Rotation

(SOURCE: Air Staff)

Comparative Analysis

Planning

Systematic AEF I planning began in early September 1995, nearly two months before deployment. At the direction of Headquarters, Air Combat Command (ACC), planning conferences were held with CENTAF because the prospective forward operating location (FOL) was within the Central Command AOR. Tasked supporting units were also represented at the planning conferences. Final plans were approved by CENTAF.⁹³

AEF II plans were not standardized with AEF I because different numbers of aircraft were deployed to different FOLs. Langley AFB began its planning for AEF II in February 1996 as a designated supporting command. Three to four weeks before the proposed deployment date in April, Langley's 1st Fighter Wing was given lead unit status, thus complicating planning because Langley had sent only one representative on the initial site survey of the FOL. Again, CENTAF was the final approval authority.⁹⁴

AEFs III and IV had the same lead unit (4th Fighter Wing, Seymour Johnson) and deployed to the same FOL – Doha, Qatar. This continuity proved beneficial as previous experiences from AEF III provided the majority of the planning guidance for AEF IV. The Seymour Johnson base deployment plan, an extension of AFI 10-403, gave structure to the planning process. No AEF UTC (Unit Type Code) template was established for the first three AEFs, but Seymour Johnson eventually built a template for AEF IV. Once again, CENTAF was the final approval authority for all plans.⁹⁵

Overall, the planning function for the first three test AEFs was conducted on an *ad hoc* basis, facilitated by months of advance notice but burdened by the reality that planners were breaking new ground. Only in the case of AEF IV was formalized planning introduced.⁹⁶ As the EAF concept is being implemented in the year 2000 and beyond, it seems likely that there will be much greater scope for "deliberate planning" using the Joint Operation Planning and Execution System (JOPEs). As AEF deployments become routinized and regularized – and as they return to well-developed and previously-used FOLs – it is likely that fairly standardized concept plans (CONPLANS) and operations plans (OPLANS) can be built and reused, subject to locality and mission variations.

⁹³ Information in this paragraph is gleaned from Tam T. Vo, "Exploratory Analysis of the Deployment Feasibility of United States Air Force Expeditionary Forces," Wright-Patterson AFB, OH: Air Force Institute of Technology MS Thesis, September 1997, p. 50.

⁹⁴ *Ibid.*, pp. 52-53.

⁹⁵ *Ibid.*, p. 55, 57. Generic planning guidance is contained in AFPD 10-4, *Operations Planning*. AFI 10-403, *Deployment Planning*, AFI 10-404, *Base Support Planning*, and AFI 10-406, *Mobility for Air Mobility Command (AMC) Forces*, are key implementing instructions (*ibid.*, pp. 22-24).

⁹⁶ Maj Gen Smith has remarked that "only after AEF III" was AMC brought in on formal planning; theretofore, planning was "*ad hoc*." (AWC lecture, 17 February 1999)

Time sensitive, or emergency, planning will remain the process of choice when unanticipated or pop-up crises arise lacking adequate time for deliberate planning. The two contingency AEWs and the five LMWs will need to be particularly responsive to *ad hoc* taskings requiring emergency planning. The Crisis Action Planning (CAP) process allows for rapid tailoring of preplanned options (developed by the deliberate planning process) to facilitate rapid response to a crisis.⁹⁷

Diplomatic Preparation

Lack of access or transit permission can be a show-stopper. Or, at the very least, it can take the “rapid” out of rapid deployment. Whether the mission is deterrence, or a “halting action,”—whether re-enforcement, re-supply, or humanitarian relief—timeliness is a critical variable. “First and foremost, an AEF would require access to the host country and/or clearances into any airspace that requires transit to get to the fight without access the AEF is not an option.”⁹⁸

“We have been burned in the past in several places around the world by taking for granted that we would receive diplomatic clearances,” according to Lt Gen Michael Short.⁹⁹ “Operation El Dorado Canyon,” conducted against Qaddafi’s Libya in April 1986, exemplifies potential future challenges for the USAF. Fear of terrorist reprisals and loss of business apparently caused France, Germany, Italy, and Spain – friends and allies all – to refuse to cooperate in the punitive U.S. strike against Libya. Denied French airspace, USAF F-111s from RAF Lakenheath, England flew round-trip missions of 6,400 miles that lasted 13 hours and required up to 12 in-flight refuelings.¹⁰⁰

As previously noted, AEF I’s deployment was delayed for over two weeks and limited to 18 vice 30 aircraft by diplomatic problems. And one report has it that AEF IV was originally earmarked for Jordan but “ended up in Qatar because Jordan denied base access.”¹⁰¹ Gaining access is only part of the challenge. Operational constraints have complicated deployments. For example, since the end of the Gulf War, Saudi Arabia has repeatedly opposed the use of Saudi-based American fighters for attacks against Iraq.¹⁰² And during the deployment of AEF II to Jordan, there was a delay in obtaining diplomatic clearances for cross-border operations over Saudi Arabia in support of Operation Southern Watch.¹⁰³

How best to minimize disruptions resulting from clearance denials, delays, or revocations is a problem lacking a single solution. Part of the solution undoubtedly lies in the cultivation of long-term host-nation relationships through mil-to-mil relations, combined exercises, and routine contacts. Then, when contingencies arise, the

⁹⁷ Arquette et al., “The Expeditionary Aerospace Force Concept,” pp. 55-56.

⁹⁸ Brig Gen [now Maj Gen] William R. Looney III, USAF, “The Air Expeditionary Force: Taking the Air Force into the Twenty-first Century,” *Airpower Journal*, Winter 1996, p. 7.

⁹⁹ “Over Here, Over There,” *Airman*, October 1998.

¹⁰⁰ Shelton and McLachlan, “21st Century Warfare,” citing Walter A. Boyne, “El Dorado Canyon,” *Air Force Magazine*, March 1999, p. 59.

¹⁰¹ Shelton and McLachlan, p. 23.

¹⁰² Douglas Jehl, “U.S. Fighters in Saudi Arabia Grounded,” *New York Times*, 19 Dec 1998, p. 9.

¹⁰³ JULL #69933-31800 dated 9/9/96.

foundation of good will and shared interests should facilitate cooperation. "We must build new relationships, nourish our friendships, build trust and instill confidence through formal and informal agreements with other nations to ensure continued access."¹⁰⁴ Another part of the solution may lie in more expedient handling of the diplomatic clearance process – for example, by pursuing pre-approved clearances or "blanket-dips"¹⁰⁵ or by centralized control of clearance requests.¹⁰⁶ Yet another part of the solution may be to hedge bets by developing additional alternative FOLs in key theaters.

This vitally important subject of diplomatic preparations – and "diplomatic sustainment" – will be given a closer look and analysis in a follow-on study tentatively entitled "Diplomatic Preparation of AEF Deployments: Ends and Means," forthcoming this year from CADRE/Airpower Research Institute.¹⁰⁷

Force Protection

According to the U.S. Air Force Scientific Advisory Board, "force protection is the detection, warning, defeat, and/or delay of threats and mitigation of the effects of threats on mission performance."¹⁰⁸ The Board goes on to stipulate that "threats include enemy (*terrorist, special purpose and guerrilla force, and small tactical group*) operations (*kidnapping, standoff, and penetration attack*), weapons (*biological, chemical, conventional, laser, nuclear, and radio frequency*), naturally occurring phenomena (*dangerous flora and fauna, fatigue, high elevation, hunger, infectious disease, night, low-level radiation, thirst, and weather*), and occupational hazards (*fire, hazardous waste, injury, and toxic agents*)."¹⁰⁹

Naturally occurring phenomena and occupational hazards arguably are more susceptible to advance planning and mitigation than are enemy operations and weapons which are characteristically more variable and unpredictable. In the AEF concept there is inherent tension between the imperative to be "light, lean, and lethal" on the one hand, and also capable of self-protection on the other. Lethality may be rendered consistent with lightness and leanness by recourse to precision/smart munitions and stealthiness. But lightness, leanness, and lethality are difficult to reconcile with the requirements of robust force protection.

¹⁰⁴ Air Force Vice Chief of Staff Gen Ralph E. Eberhart in Christopher J. Haug, "Access key to AEF success: Air Force looks at 'megabase' concept," *Air Force News*, 6 May 1998, http://www.af.mil/news/May1998/n19980506_980612.html.

¹⁰⁵ Arquette et al., "The Expeditionary Aerospace Force Concept," p. 76.

¹⁰⁶ For AEF III, Grand Forks AFB coordinated 905th Air Refueling Squadron diplomatic clearances for aircraft going into Moron AB, Spain and Langley AFB coordinated diplomatic clearances for aircraft going into Doha, Qatar. "The process worked, but the potential is there for clearances to be missed when more than one agency is working clearances for a given aircraft." (JULL #32831-07299, dated 10/23/96)

¹⁰⁷ Maj Gen [now Lt Gen] Donald G. Cook, USAF, previous Director of Expeditionary Aerospace Force Implementation (XOP), was the moving force behind this study.

¹⁰⁸ *Report on United States Air Expeditionary Forces*, SAB-TR-01, Vol. 1, p. 45.

¹⁰⁹ *Ibid.* Italics added to improve readability.

To the extent that AEFs are forward-based in high threat environments, they will have to devote more lift and operational capability to threat mitigation (as we saw with AEF III following the Khobar Towers bombing). Conversely, to the extent that AEFs mitigate threats by operating out of locations removed from the adversary's threat radius, they will be less lethal in sustained operations because greater distance means fewer combat sorties.

While the age-old contest between offense and defense will continue to play out – for example, in the ongoing development by the U.S. of theater missile defense (TMD) – there are reasons to suppose that AEFs deployed to forward operating locations will remain vulnerable to asymmetrical attack. Among the reasons for likely continued FOL vulnerability are the inexorable proliferation of weapons of mass destruction (WMD) — especially chemical and biological — and of missile delivery systems — both ballistic and cruise. Add to that the menace of international terrorism and the casualty-aversion obsession of American public opinion, and it is easy to conclude that AEF force protection will become more and more problematic.¹¹⁰

One answer to this dilemma lies in the observation that AEFs are intended to deploy across the spectrum of conflict from low-threat or no-threat operations (e.g., humanitarian relief) to high intensity combat. Thus, many AEFs will need only minimal organic protection.¹¹¹ Another answer lies in defensive countermeasures in addition to TMD: i.e., counterforce, other active defense measures, and passive defense (e.g., sensors, chem-bio suits, inoculations, hardening, decontamination capabilities, etc.).

Possible organizational answers to mitigation of threats include the fostering of multiple capabilities and roles in both personnel and equipment. AFDD 2.4-1 states, for example, that every airman should receive training in basic weapons skills, self-aid and buddy care, NBC defense, anti-terrorism, and threat awareness.¹¹² In 1997, the U.S. Central Command published force protection guidelines and requirements, including minimum standards for awareness training, weapons qualification, medical readiness, security procedures, site configuration, and facility construction standards.¹¹³

Another organizational measure, integration of the most critical force protection functions – intelligence, antiterrorism, physical security, EOD, fire prevention, NBC response, safety, and medical care – should enhance overall threat mitigation.

¹¹⁰ Chem-bio terrorism may be a threat not only to forward-based expeditionary forces, but also to the same forces in pre-deployment marshalling locations, at en route transit nodes, and during redeployment. (See Byron C. Hepburn on this point, "Chemical-Biological Attack: Achilles Heel of the Air Expeditionary Force?" Maxwell AFB, AL: Air University, Counterproliferation Center Paper No. 4, September 1999, pp. 17-20 passim.) Furthermore, as putative adversaries' ballistic missile capabilities increase to intermediate ranges, en route transportation nodes will become vulnerable to missile attack.

¹¹¹ A rejoinder to this observation is that low-threat deployments may escalate to high-threat missions, as the Somalia operation ("Restore Hope") did in the early 1990s. Even "low-end" deployments may eventually require robust force protection.

¹¹² Draft Air Force Doctrine Document (AFDD) 2.4-1, *Force Protection*, Maxwell AFB, AL: Air Force Doctrine Center, 4 September 1998, pp. 4-7, as cited by Randy Newsom, "Redefining Force Protection: Considerations for an Expeditionary Air Force," Maxwell AFB, AL: Air War College Research Report, April 1999, p. 37.

¹¹³ Headquarters, USCENTCOM, Operational Plan 97-01 as cited in Newsom, "Redefining Force Protection," p. 47.

Recognizing the need for more coordinated efforts, Chief of Staff General Ronald R. Fogleman in 1997 established the 820th Security Forces Group and the Force Protection Battlelab. The 820th SFG combines the force protection specialties above with engineering and communications expertise in deployed support of expeditionary operations, while the Force Protection Battlelab applies those specialties toward improvement of force protection readiness and equipment.¹¹⁴

Within the intelligence community, operational intelligence, counter-intelligence, and security force efforts can usefully be more integrated and coordinated in both training and operations. Sean J. Cantrell, in "Integrated Intelligence Operations: The Key to Force Protection," argues that there has been insufficient cooperation between Air Force Intelligence and the USAF Office of Special Investigations (OSI). "To best address the issue of Force Protection Intelligence," he argues that "an integrated intelligence organization ... is needed that combines combat intelligence, counterintelligence, special operations forces, security forces, and aviators."¹¹⁵ Indeed, progress has been made since the Khobar Towers incident in distribution of all-source reporting. General Smith, working with the OSI leadership, arranged for OSI agents to report directly to him in the field rather than obtaining their reports through Washington, the first such AEF counter-intelligence support arrangement.¹¹⁶

No matter how many threat mitigation capabilities and measures are developed, standardized, and institutionalized by AEFs at the tactical and operational levels, the question of force protection is ultimately a strategic-level question regarding national interests. What are national priorities? What risks are acceptable to the American people? What risks are unavoidable? What risks are too great? Given that such questions have proven to be very difficult to answer in the abstract—requiring, instead, cases of concrete threats to concrete interests – responsible Air Force leaders are left to grapple with force protection as one of the most critical challenges surrounding transition to the new EAF construct.

Further analysis will be brought to bear on this issue in a spin-off study of the Persian Gulf region – arguably one of the two most strategic arenas for likely future force application. "Weapons of Mass Destruction in the Persian Gulf: Threat and Response" will be published this year by CADRE/Airpower Research Institute.

¹¹⁴ Newsom, pp. 19-20. One force protection initiative, the "Phoenix Ravens," are specially-trained security personnel that deploy to austere locations with AMC aircraft to protect the airplanes, cargoes, and crews.

¹¹⁵ Unpublished article forthcoming in *Aerospace Power Journal*, Executive Summary, p. "b." There appears to be a consensus among analysts on this subject that a more integrated force protection intelligence architecture is needed; Cantrell's proposal for a new organization, a "USAF Antiterrorism Analysis Center" (p. 36), was less well received by a Force Protection Intelligence conference organized by Cantrell, conducted at Goodfellow AFB in early June 1999, and attended by the author.

¹¹⁶ General Smith interview, 22 March 2000. This arrangement, together with the first-time availability of a deployed Tactical SCIF, provided much more timely intelligence support to the AEF Commander.

Logistics

Along with force protection, logistics is the most daunting challenge to fulfillment of the vision of “light, lean, and lethal” – and rapid – expeditionary forces. Experience in the four test AEFs between 1995 and 1997 reveals a number of difficulties. Among the difficulties previously noted were late arrival, non-arrival, out of sequence arrival, and duplication of various TPFDD items. Site surveys were inadequate, or late, or lacking in key personnel. En route breakdowns of transports without backups delayed ingress of some people and equipment. Site preparations in some cases were not completed before arrival of the main forces. Dual basing of tankers and fighters during AEF II was disadvantageous. The “light, lean” warriors of AEF II enjoyed 40 cases of soda a day, 10 videogame machines, a weight room, an ice cream machine, and 40 washers and dryers. Prepositioned war readiness spares kits (WRSKs) and Harvest Falcon equipment were not properly reconstituted between AEF III and AEF IV deployments.

That said, a lot did go right in the four deployments. Overall, they demonstrated the efficacy and future potential of the AEF concept. In all cases, significant combat forces were deployed, sustained, and returned. Combat sorties were achieved within 72 hours of receipt of the warning order, within 48 hours of the execution order, and within 24 hours after arrival at FOLs. AEF III, in one test period, was able to sustain 70 sorties a day for three days.¹¹⁷

The time parameters are somewhat deceptive, however, because “warning” was really months in advance, site preparations typically went on for weeks before deployments, and initial logistics packages took days longer than scheduled in arriving. That said, AEF IV came closest to a true test of the AEF rapid deployment concept. Leadership took pains not to allow any deployment actions until the warning order was actually received. Advanced site preparations were limited to work on infrastructure — specifically, erection of a runway safety barrier — and the construction crew and its security personnel were counted against the authorized number of deployment seats.¹¹⁸

Many of the difficulties cited above can reasonably be expected to yield to the regularized 15-month AEF cycles that take two AEFs at a time sequentially through normal training and exercises, spin-up/deployment preparations, 90 days on call or deployed, and recovery time.¹¹⁹ AEFs I – IV were, in many ways, *ad hoc*, one-of-a-kind evolutions. Except for the return of AEF IV to Qatar, they each broke new ground – figuratively *and* literally. They lacked the advantages that undoubtedly will accrue to expeditionary forces returning multiple times to the same FOL, using the same or similar TPFDDs, the same prepositioned equipment, working with many of the same host-country officials, and operating in a familiar environment. Yet, AEFs I – IV do provide insights into challenges that all successor expeditionary forces are likely to encounter – especially forces deployed in pop-up contingencies where FOLs are austere and previously unused, or little-used, as U. S. operating locations.

¹¹⁷ General Smith, Air War College, 17 February 1999.

¹¹⁸ General Smith interview, 22 March 2000.

¹¹⁹ AFI 10-400, 01 October 1999, p. 4. Also, see again Figure 1 of this study.

Command and Control

Just as logistics needs can be better anticipated and provided for in the new EAF construct, so too have command and control issues been sorted out since the deployments of AEFs I – IV. The major players involved in 1995-97 deployments were as follows: CENTCOM owned the AOR; ACC owned most of the aircraft and provided the Lead Wing and expeditionary force commander; CENTAF was the senior CENTCOM Air Force commander in the rear; the 4404th Wing (Provisional) commander was theater COMAFFOR (Commander, Air Force Forces) in some cases and the AEF commander was himself COMAFFOR in others; finally, Commander JTF/SWA was the joint operational commander for Operation Southern Watch, but Commander JTF/Operation “Rugged Nautilus” (under NAVCENT) was joint operational commander for a specified period of AEF operations.

Operational and administrative chains of command were thus manifestly labyrinthine and shifting. For example, Brig Gen Smith reported to two different JFACCs (Joint Forces Air Component Commanders) during his deployment as AEF III Commander: JTF/SWA in Riyadh for Operation Southern Watch, and an afloat U.S. Navy JFACC for Operation Rugged Nautilus.¹²⁰

Air Force Instruction 10-400, of 01 October 1999, has since clearly stipulated command and control concepts for the new EAF construct. First, it is now more appropriate to refer to deploying elements or packages as “Aerospace Expeditionary Task Forces (ASETFs)” rather than as Aerospace Expeditionary Forces (AEFs). The ten AEFs, as previously mentioned, will never deploy as full AEFs. They are, instead, “buckets of capability” from which force packages are developed and tailored to meet mission requirements. Those specifically tailored forces are presented to theater commanders as ASETFs – *Aerospace Expeditionary Task Forces*.

According to AFI 10-400, these ASETFs will be “commanded by the supported Commander, Air Force Forces (COMAFFOR). AEWs, Aerospace Expeditionary Groups (AEGs), and Aerospace Expeditionary Squadrons (AESs) are the wings, groups, and squadrons attached to an ASETF or in-place numbered air force (NAF)”¹²¹ Further, “deploying active duty AEF force packages will be operationally and administratively assigned to theater command elements Air Reserve Component (ARC) forces will be operationally assigned to the theater commander The supported COMAFFOR provides centralized control, with decentralized execution occurring at the AEW, AEG, or AES level.”¹²² Mission requirements will be assigned by the Joint Force Commander (JFC) to the Joint Forces Air Component Commander (JFACC), or to the COMAFFOR if no JFACC is designated.¹²³

¹²⁰ General Smith, Air War College, 17 February 1999 and interview, 22 March 2000. For Rugged Nautilus, the afloat JFACC in turn reported to JTF/Rugged Nautilus in Bahrain.

¹²¹ AFI 10-400, p. 5.

¹²² Ibid.

¹²³ Ibid.

Facilitating command and control, as the coordinating authority authorized direct liaison (DIRLAUTH) across all MAJCOMS, USAF components, and AEF/AEW scheduled units, is a newly established management center: the AEF Center (AEFC). Stood up last summer (1999) and still getting organized, the Center is located administratively in ACC. It consists of two teams, Blue and Silver, each commanded by a Brigadier General and each encompassing over 50 people from many Air Force functional specialties as well as the Guard and Reserve. Each team will provide oversight to two paired AEFs (e.g., 1 & 2; 3 & 4, etc.) and their associated on-call AEW and LMW. The Center will host and conduct planning conferences before the respective AEFs enter their spin-up/preparation phases, thus relieving Lead Wing commanders of many coordination requirements while standardizing planning and preparation across the EAF.¹²⁴

In the words of AFI 10-400, “the AEF Center (AEFC) is a cross-functional, centralized management team designed to facilitate EAF operations that include AEF force package preparation for contingenc[ies,] steady state rotations[,] and on-call AEW operational requirements.... The AEFC facilitates AEF/AEW management and administrative tasks to include: AEF/AEW preparation for a given tasking and location; providing AEF/AEW continuity; assisting the sourcing of forces (UTCs/individuals) ...; developing unit preparation and training templates; guiding all aspects of AEF/AEW planning, to include TPFDD refinement and DRMD [Deployment Requirements Manning Document] preparation; and monitoring AEF/AEW readiness.”¹²⁵

In short, the AEFC is assuming responsibility for many of the planning, logistical preparation, and training oversight duties handled by AEF I, II, III, and IV commanders on an essentially *ad hoc* basis. (Recall that only AEF IV undertook “formal” planning.) Furthermore, “the AEFC provides continuity during crisis action planning, escalation to surge or full-scale MTW operations, and the return to steady-state operational levels.”¹²⁶

Training and Education

If a transformation in Air Force culture is one objective of the creation of the Expeditionary Air Force¹²⁷—as well as one likely effect – certainly the Air Force’s training and education programs will have a prominent place in achievement of that vision. The Air Education and Training Command has been leaning forward in this regard since the EAF was announced.¹²⁸ Midway through a two-year implementation program, Air University is integrating the EAF cultural perspective across its entire “continuum of education” from AFROTC/OTS to the Air War College.¹²⁹ Likewise, the

¹²⁴ Various sources, including: https://www.cadre.maxwell.af.mil/geiv_gray/readahead/briefings/eaf_brief/eaf24n.html.

¹²⁵ *Ibid.*, p. 13.

¹²⁶ *Ibid.*

¹²⁷ See the forthcoming CADRE/Airpower Research Institute study by Thomas R. Searle entitled “Transforming the US Air Force Culture to Meet the Expeditionary Challenge: Lessons from the Transformation of US Army Culture, 1890-1914.”

¹²⁸ For example, Air University hosted an EAF MAJCOM Education and Training IPT Conference 4-5 May 1999.

¹²⁹ Dr. Tom Renckly “Talking Paper on Air Expeditionary Force Curriculum in Air University Schools,” 15 March 1999.

Air Force Wargaming Institute, an integral part of the College of Aerospace Doctrine, Research, and Education (CADRE), has incorporated the EAF concept into its major wargames. Most notably, the Chief of Staff's Title 10 Wargames, "Global Engagement 98" and "Global Engagement 99," both centrally featured AEFs.

Periodic operational exercises are also playing a key role in the ongoing transformation of the Air Force. The "Expeditionary Force Experiment" (EFX) series, inaugurated in 1998 (EFX 98) and replicated as a Joint EFX (JEFX 99), has focused on a number of concepts including the notion of electronic "reachback" from a small forward-based Joint Air Operations Center (JAOC) to a large rearward JAOC. A Theater Battle Management Core System (TBMCS) has also been the object of experimentation with the objective of real-time, dynamic battle control.¹³⁰

Finally, the USAF Warfare Center at Nellis AFB is set to play a key role in training the designated AEFs in its "Flag"- series of realistic live flying exercises. One report states that the "Red" and/or "Green Flag" exercises devoted to work up AEFs are expected to more than double in size to comprise up to 200 aircraft.¹³¹ "There will be more focus on operations other than war and stealth assets are also being integrated into the Flag exercises"¹³² The Air Warfare Center will be instrumental in shaping the AEFs into coherent, well-trained fighting units, even though they are made up of components that will not otherwise be working together because they are based separately.¹³³

¹³⁰ William H. McMichael, "Joint Experiment in Expeditionary Force," *Air Force Magazine*, January 2000. See also Robert Wall, "Expeditionary Nerve Center," *Air Force Magazine*, August 1998.

¹³¹ "US Air Force's Expeditionary Aerospace Force gets off to a flying start," *Jane's International Defense Review*, October 1998, p.12.

¹³² Ibid.

¹³³ Ibid.

Section 4: Conclusion

Force protection and logistics emerge from this study as the two most challenging issues confronting the architects and implementers of the EAF concept.

As concluded above, force protection becomes ultimately a strategic issue. Air Force leaders are prudently taking measures and seeking solutions to mitigate threats to deploying personnel and equipment. Frustrating would-be terrorists and deterring or defending against both conventional and unconventional (NBC) weapons will remain leadership imperatives. But ultimate determinations of when to operate expeditionary forces in the teeth of grave threats and high risks must be made by political leadership sensitive to, but, one hopes, not controlled by, public opinion. What's at stake? And when is the risk too high? – These are questions that must await contextual answers.

More needs to be said regarding logistics challenges. The weight and bulk of force protection measures potentially destroy any hopes of lightness and leanness. For example, one Patriot (PAC-2) battery requires approximately eight C-141s and two C-5s to transport and set up.¹³⁴ So we are left with the choice of going light and lean only into low-threat or no-threat environments. Or into high threat environments where much of what is needed is prepositioned, especially POL and ammunition, and where some force protection measures are already in place. Arguably, a large proportion of assigned AEF missions will occur on the low end of the spectrum of conflict. But, as previously observed, threats can and do escalate. Getting in may be much easier than staying in.

The main challenge, then, is to design and implement a concept of operations that allows for light, lean, lethal, and, thus, rapid deployment of AEF forces tailored to requirements – one that is able to work around or to defeat high-level threats when interests require it. (The low threat missions will not be a problem; the high-threat, low-interest situations can and should be avoided altogether.)

The most incisive and persuasive analysis known to this writer that tries to come to grips with what could be called the “lift/force protection trade-off” described above, is that of Paul Killingsworth and his six colleagues at RAND.¹³⁵ The key objective now, and for the foreseeable future, is how to work around high threat levels. Defending against or defeating determined adversaries armed with unconventional weapons¹³⁶ and capable of exploiting asymmetric advantages is a much tougher nut to crack. Reliable TMD technology is arguably years away; chem-bio warfare countermeasures are agonizingly slow to materialize. Both promise to be very costly. Both represent

¹³⁴ Paul S. Killingsworth, et al., *Flexbasing: Achieving Global Presence for Expeditionary Aerospace Forces*. Santa Monica, CA: RAND (Project Air Force), 2000, p. 66.

¹³⁵ Ibid.

¹³⁶ The principal emerging threat by most accounts is now in the area of biological weapons. Chemical weapons do not represent the same level of threat. Nuclear weapons are beyond easy availability and represent an escalation beyond the regional contexts envisioned by most EAF deployments.

opportunity costs in terms of offensive capabilities. If it takes most of one's capabilities simply to survive in a FOL, it would seem timely to look for a work around.

Killingsworth and his fellow analysts have proposed what they call a "flexbasing" strategy.¹³⁷ Rather than focusing on gaining an elusive assured access to specific bases around the world, it requires developing a robust and flexible *capability* to move swiftly into, and operate effectively out of, whatever locations become available during crises.¹³⁸ Furthermore, "the locations that become available to the expeditionary aerospace forces could be distant from the fight, or quite close. They could be allied military bases, international airports, or abandoned airfields. To be expeditionary, the Air Force must be prepared to employ effectively from all these locations and more, many of which will be less than ideal."¹³⁹

"The Air Force needs a strategy," the analysts believe, "for deploying and employing its forces overseas in the face of significant uncertainty regarding its operating locations."¹⁴⁰ The uncertainty arises from crisis-specific factors that are virtually impossible to predict in advance. Access and overflight rights, threat levels at various locations, who is friendly and who is adversarial – these and other variables make it difficult to know whether a particular location will be suitable for operations in a particular circumstance. Thus, the challenge is, yes, to develop flexible forces – that will be a hallmark of the EAF – but also to develop numerous options as potential operating locations in a contingency.

These options are what Killingsworth et al. classify as core support locations (CSLs), forward support locations (FSLs), and forward operating locations (FOLs).¹⁴¹ CSLs are mainly CONUS-located USAF Main Operating Bases (MOBs), along with a few overseas MOBs. FSLs are regional support facilities outside of CONUS located at sites with very high assurance of access and normally staffed at low levels. The FSLs will be primarily storage sites with resources stored including munitions, spare parts, humanitarian supplies, and other items appropriate to the region. FSLs will take maximum advantage of host-nation funding and commercially available products and services. They will be the best option for conducting intermediate-level maintenance on engines and avionics components, thus reducing the deployment "footprint" forward by accommodating maintenance manpower. FSLs will also provide en route refueling support for deploying forces, as well as beddown sites for bombers and enabling assets.

FOLs in three categories represent a potentially large number of deployment sites throughout a theater. The greater the number of potential sites that can be developed, subject, of course, to access and available funding, the better. FOLs will have varying levels of infrastructure and prepositioned U.S. supplies and equipment, depending on the level of American interest involved and the quality of the relationship with the host country. Shaikh Isa in Bahrain, Azraq in Jordan, and Doha in Qatar, hosts respectively to AEFs I, II, and III – IV, are logical long-term candidates for CENTCOM AOR FOLs.

¹³⁷ Killingsworth et al., *Flexbasing*, p.17, 76.

¹³⁸ *Ibid.*, p. 21, 84.

¹³⁹ *Ibid.*, p. 83.

¹⁴⁰ *Ibid.*, p. 76.

¹⁴¹ *Ibid.*, pp. 19-25, *passim*. The ensuing discussion of these concepts is based on this citation.

Obtaining access to and maintaining FOLs throughout critical regions of the world is a process not unlike that undertaken by the Royal Navy in the course of operations in Great Britain's far-flung empire. The FOLs are in some ways analogous to the coaling stations on which the steam-powered Royal Navy relied.

The flexbasing strategy proposed by RAND analysts also advocates the development and maintenance of a robust mix of long-range and short-range combat systems. The EAF must have the capability to project combat power whether or not close-in bases are immediately available. Long-range strikes sometimes provide access to more forward locations by ameliorating or eliminating forward threats. Additionally, bombers provide deterrence and punitive strike capabilities.¹⁴²

Another feature of the flexbasing strategy would be to develop space as a type of FSL. "The EAF should seek to place as many enabling assets as it can in earth orbit. AWACS and JSTARS functions could be performed from low earth orbit within a few years. The feasibility of accomplishing the SEAD and anti-theater ballistic missile missions from space should be investigated."¹⁴³

Next, implement the flexbasing strategy by developing a global "air mobility network" that "will support the peacetime and crisis movement of equipment and personnel between FOLs, FSLs, and CSLs. The air mobility system will enable the periodic deployments and redeployments of forward-based EAF forces and exercise the routes used for assured resupply during wartime. Mobility forces will also support *shaping* by regularly deploying to FOLs and training with coalition partners."¹⁴⁴

Finally, the RAND analysts advocate the provision of "full-spectrum force protection" for the EAF. Robust force protection is meant to enable the EAF to deploy to any FOL in a theater without being deterred by enemy threats.¹⁴⁵ However, this objective may prove to be "a bridge too far."

"Full-spectrum force protection" may be too expensive and/or unattainable in the face of certain unconventional and asymmetric threats that one can imagine. As in the classic "indirect approach," it may simply be prudent to bypass or to work around such FOLs as may prove indefensible, or indefensible at acceptable cost to the mission.

Meanwhile, the expeditionary force tests of AEFs I – IV, as well as subsequent operational experience and the progress already made in institutionalizing the EAF, together justify confidence that the USAF is on course to maximize its contribution to U.S. foreign and security policy goals in the new century.

¹⁴² Ibid. See also the draft study of Killingsworth, et al., "Air Expeditionary Forces: Global Presence for a New Century," DRR-2044-AF, March 1999, p. 66.

¹⁴³ Draft study, p. 66. See also *Flexbasing*, pp. 26-27.

¹⁴⁴ Draft study, pp. 68-69, and *Flexbasing*, p. 29.

¹⁴⁵ *Flexbasing*, p. 29 and chapter four.

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Acknowledgements

The author wishes to acknowledge the helpful advice of his professional colleagues in the Airpower Research Institute – Dan Mortensen, Ken Werrell, and Tom Searle. Dr. Jim Titus, Air University Dean of Research, also read the draft manuscript and provided valuable suggestions. The author especially appreciates the encouragement and patience of Col Al Howey, Director of Airpower Research Institute.

Maj Gen Lance L. Smith, USAF, who commanded AEFs III and IV to Qatar in 1996 and 1997, generously shared his insights. His unique vantage point contributed greatly to the fidelity of this study. Col Randy Honnet, USAF, commander of AEF I to Bahrain in 1995, was likewise gracious in his assistance.

Thanks also go to Paul S. Killingsworth of RAND's Project Air Force (and his joint authors) whose work and personal advice were very helpful, as footnote citations in this study attest. Finally, the technical assistance of Ms. Cathy Parker was greatly appreciated in preparing the manuscript for publication.

As always, any remaining errors are those of the author alone.

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