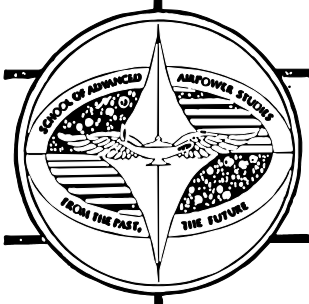

SCHOOL OF ADVANCED AIRPOWER STUDIES

THE COMPOSITE WING: BACK TO THE FUTURE!

By

Major James E. Moschgat

AIR UNIVERSITY
UNITED STATES AIR FORCE
MAXWELL AIR FORCE BASE, ALABAMA

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The Composite Wing: Back to the Future!

Major James Edward Moschgat

A Thesis Presented to the Faculty of
The School of Advanced Airpower Studies
For Completion of Graduation Requirements

School of Advanced Airpower Studies

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EXECUTIVE SUMMARY

In the Fall 1990 issue of Air Power Journal, General Merrill A. McPeak, Air Force Chief of Staff, pointed out what he believed to be a significant shortfall in the way US Air Force assets would be employed in any future conflict. His article, "For the Composite Wing," identified the central problem as one of organization and communication. In short, on the eve of combat, the Air Force would deploy critical air assets into a theater and distribute them on different and perhaps widely scattered airfields. To integrate and mass these far flung air assets into a cohesive fighting force, the Air Component Commander would then be forced to rely on a sophisticated, delicate, often cumbersome command and control (C^2) net. Over this fragile yet vital link pass hundreds of critical pieces of information--up-channel readiness reports and down-channel multi-page, highly complex Air Tasking Orders (ATO). General McPeak's solution to this problem is the composite wing. Basically, the concept would create a fighting unit that possesses at one base, under one commander, all the assets needed to execute a highly complex combat task independently.

"Futuristic," hailed some airmen; "revolutionary," lauded many others. In reality, however, General McPeak's composite wing concept is neither futuristic or revolutionary. Composite units, though never plentiful, have existed in American air forces as far back as 1911 when the Signal Corps brought together two Wright Type-B and two Curtiss IV Model-D airplanes at Fort Sam Houston, Texas, to explore their potential military applications. Immediately after World War I, America formed a number of composite units to provide coastal defense for overseas possessions--Hawaii received the first in 1920--and some soldiered on throughout the Second World War. Composite units probably received their widest combat employment during World War II, the 509th Composite Group that delivered the atomic bombs on Hiroshima and Nagasaki undoubtedly being the most famous. However, the fact that only five of 243 groups (2%) on the Army Air Forces register in March 1945 were composites gives some indication of the rarity of the breed. Later, in the 1950s, TAC developed the Composite Air Strike Force (CASF), an innovation remarkably similar to General McPeak's proposal, designed to deploy a composite, nuclear-capable, tactical force anywhere in the world for thirty days of independent combat operations. Since then, de facto composite wings have officially existed, although seldom branded with the "composite" moniker. Strategic Air Command wedded the B-52 and KC-135 in composite matrimony in its heavy bombardment units. Tactical

Air Command collocated F-5s, F-16s, F-15s, A-10s, and others under the command of the Tactical Fighter Weapons Center at Nellis AFB. Nevada. Likewise, to simplify pilot training, Air Training Command has conveniently assigned T-37s and T-38s at one base, under the same commander, for over three decades.

The purpose of this study is not to denigrate the composite wing concept or reject it out of hand as so many of its critics have done. Obviously, senior Air Force leaders believe in the idea and have taken significant, far-reaching steps to transform the concept into reality. In just a short while, Air Combat Command (ACC) will have at least three officially sanctioned composite wings in combat-ready configuration poised to support Air Force Secretary Donald Rice's "Global Reach--Global Power" philosophy. Therefore, the purpose of this study is to survey more than seventy years of Air Force history, distill and extract what lessons about composite units may be hidden there, if any, and if so, apply them to today's concept to help planners avoid potential pitfalls that could destroy the composite wing's effectiveness. Specifically, this study will endeavor to answer a number of questions. First of all, what is the nature of the composite wing debate and is it a recent bone of contention? Second, what exactly is a composite wing and has the term been applied consistently throughout Air Force history? Third, if composite wings have existed throughout Air Force history, how have they fared, especially in combat? Fourth, do today's aerial battlefields and aircraft differ enough from those of previous periods to make the composite wing workable? Finally, what can airmen learn from past composite units' exploits--pro or con--that might allow them to mold today's composite wings into effective, viable combat forces? Not surprisingly, the answers to each of these questions and more are written in the pages of over seventy years of Air Force composite wing history.

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BIOGRAPHY

Major James E. Moschgat (BS, USAF Academy; MS, Troy State University) is an F-16 pilot. A recent graduate of the inaugural class of the School of Advanced Airpower Studies, he was just assigned to the 366th Wing, Mountain Home AFB, Idaho. Also a graduate of Air Command and Staff College, his previous assignment was as an action officer at Headquarters, USAFE, Ramstein AB, Germany. Previous assignments were in the F-16 at Torrejon AB, Spain; as a T-38 instructor pilot at Laughlin AFB, Texas; and as an F-4D pilot at Taegu AB, Korea.

CHAPTER I

INTRODUCTION

> It has been said that the real crux of generalship is organization and not tactics A disorderly mob is no more an army than a heap of building material is a house. Men, Units, Groups, and Commands--all must be arranged and organized before efficiency and expediency can be achieved.
>
> General Henry H. "Hap" Arnold
> General of the Air Force, 23 January 1940

In the Fall 1990 issue of Airpower Journal, General Merrill A. McPeak, Air Force Chief of Staff, pointed out what he believed to be a significant shortfall in the way US Air Force assets would be employed in any future conflict. His article, "For the Composite Wing," identified the central problem as one of organization and communication. In short, on the eve of combat, the Air Force would deploy critical air assets into a theater and distribute them on different and perhaps widely scattered airfields. To integrate and mass these far flung air assets into a cohesive fighting force, the Air Component Commander would then be forced to rely on a sophisticated, delicate, often cumbersome command and control (C^2) net. Over this fragile yet vital link pass hundreds of critical pieces of information--up-channel readiness reports and down-channel multi-page, highly complex Air Tasking Orders (ATO). "Thus," according to General McPeak, "our present concept gives rise to the requirement for detailed centralized direction. There are lots of reasons to doubt that we can in fact provide effective, detailed, central direction under stressful conditions."[1] General McPeak's solution to this problem is the composite wing. Basically, the concept would create a fighting unit that possesses at one base, under one commander, all the assets needed to execute a highly complex combat task independently.

According to General McPeak, the primary advantage of a composite wing would be its potential for reducing the amount of higher-headquarters guidance and up-channel reporting needed to prosecute daily combat operations. For example, a composite wing commander would receive mission-type orders--a target, a desired result, and an execution time--instead of hundreds of pages of guidance. He simply informs headquarters whether he can or cannot execute the mission and, if not, how much outside

assistance he requires. In General McPeak's words, "So much for 50 page ATOs and volumes of unit status reporting."[2] The Chief cites other benefits including: 1) an increased capability for independent action if the air tasking link is interrupted; 2) an enhanced ability to train in peacetime for expected combat contingencies, thus reducing the impact of friction on operations; 3) reduced vulnerabilities resulting from the dispersal of critical assets; 4) less pre-hostilities unit shuffling, i.e. taking one squadron from Base A and two squadrons from Base B to form a combat unit, reducing the demand on overtaxed airlift assets; and 5) consolidated command responsibility in one individual, the wing commander.[3] Surprisingly, the general's comments and assertions, intended to spur open, objective debate within the Air Force, met with unquestioned acceptance. "Futuristic," hailed some airmen; "revolutionary," lauded many others. In short order and seemingly with little debate, the Air Force gave its formal blessing to wed the KC-l0 tankers and F-15E fighters at Seymour-Johnson AFB into one unit--the former arrangement being akin to common-law cohabitation--and formulated plans to grow several composite wings from the ground up at Mountain Home AFB, Idaho, Pope AFB, North Carolina, and Moody AFB, Georgia

In reality, however, General McPeak's composite wing concept is neither futuristic or revolutionary. Composite units, though never plentiful, have existed in American air forces as far back as 1911 when the Signal Corps brought together two Wright Type-B and two Curtiss IV Model-D airplanes at Fort Sam Houston, Texas, to explore their potential military applications.[4] Immediately after World War I, America formed a number of composite units to provide coastal defense for overseas possessions--Hawaii received the first in 1920--and some soldiered on throughout the Second World War. Composite units probably received their widest combat employment during World War II, the 509th Composite Group that delivered the atomic bombs on Hiroshima and Nagasaki undoubtedly being the most famous. However, the fact that only five of 243 groups (2%) on the Army Air Corps' register in March 1945 were composites gives some indication of the rarity of the breed.[5] Later, in the 1950s, TAC developed the Composite Air

Strike Force (CASF), an innovation remarkably similar to General McPeak's proposal, designed to deploy a composite, nuclear-capable, tactical force anywhere in the world for thirty days of independent combat operations.[6] Since then, de facto composite wings have officially existed, although seldom branded with the "composite" moniker. Strategic Air Command wedded the B-52 and KC-135 in composite matrimony in its heavy bombardment units. Tactical Air Command collocated F-5s, F-16s, F-15s, A-10s, and others under the command of the Tactical Fighter Weapons Center at Nellis AFB, Nevada. Likewise, to simplify pilot training, Air Training Command has conveniently assigned T-37s and T-38s at one base, under the same commander, for over three decades. The list could go on.

Despite the obvious wealth of historical composite unit information available to Air Force leaders and planners, sadly much of it has been ignored in the race to develop the new wings. This is due in no small part to the fact that the Chief of Staff himself originated and has backed the present composite wing initiative in media such as the Airpower Journal. In fairness to the Chief, however, he immediately withdrew his Airpower Journal article upon nomination for the Air Force's top position, fearing the piece "might quell the very debate it was intended to precipitate. In short, [General McPeak] did not want to bring undue influence on an idea that needed to be examined openly and objectively within our institution."[7] However, believing the idea had merit, many at the Air University urged General McPeak to reconsider his decision to halt publication and, after prompting from Lieutenant General Charles G. Boyd, Air University Commander, he acquiesced. Unfortunately, General McPeak's initial gut reaction not to publish was probably a good one--most open and objective debate quickly dried up once his article appeared, at least within official Air Force circles.

Since General McPeak's article appeared in Airpower Journal, actual composite wing construction has far outpaced the concept's intellectual foundation building. To illustrate this point, one composite wing already exists at Seymour-Johnson AFB and two others are well on their way to completion elsewhere. Surprisingly, the Air Force's official Concept of Operation (COO) for the

composite wing--the document that will contain the subjective and doctrinal guidelines for its use--has yet to go beyond the draft stage.[8] At the same time, anyone speaking out against the concept or any of its tenets is admonished as a heretic or a nay-sayer. For example, when asked for his expert advice for making a composite wing work, Colonel Hal Hornburg, commander of Seymour- Johnson's Fourth Wing, responded, "Rehabilitate or decapitate the nay-sayers. This is an all-in or all-out proposition. You're either going to be in the Air Force of the future or linger in the Air Force of the past."[9] Though Colonel Hornburg's comments are no doubt directed mainly at those who are simply resisting any and all change, such attitudes emanating from senior Air Force leaders stifle open, constructive criticism and are characteristic of many who see the composite wing issue as an entirely black-and-white, for-or-against battle. Fortunately, this is not the case. The Air Force of the future stands to benefit a great deal from the Air Force of the past--especially from its rich and varied composite wing history. If it continues its breakneck pace to build composite wings without at least momentarily slowing to consider the past, the Air Force may well find itself in a predicament similar to a carload of teenagers hurtling headlong down a country road at night without headlights. Both will get somewhere in a hurry, but the final destination may be Quite unintended.

The purpose of this study is not to denigrate the composite wing concept or reject it out of hand, as so many of its critics have done. Obviously, our senior Air Force leaders believe in the idea and have taken significant, far-reaching steps to transform the concept into reality. In just a short while, Air Combat Command (ACC) will have at least three officially sanctioned composite wings in combat-ready configuration poised to support Air Force Secretary Donald Rice's "Global Reach--Global Power" philosophy. Therefore, the purpose of this study is to survey more than seventy years of Air Force history, distill and extract what lessons about composite units may be hidden there, if an, and if so, apply them to today's concept to help planners avoid potential pitfalls that could destroy the composite wing's effectiveness. Specifically, this study will endeavor to answer a number of questions. First of all, what is the nature of the composite wing debate? Second, what exactly

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NOTES CHAPTER I

[1]Merrill A. McPeak, "For the Composite Wing," .Airpower Journal, (Fall 1990), 8.

[2]Ibid., 8.

[3]Ibid., 10-11

[4]Juliette A. Hennessy, The United States Army Air Arm, April 1861 to April 1917 (Washington, D.C.: Office of Air Force History, 1985), 42

[5] Alfred Goldberg, ed., The History of the United States Air force. 1905-1957 (New York: D. Van Nostrand Company, Inc., 1957), 94.

[6]Ninth Air force History (1 Ju1y-31 December 1957), 166.

[7]Charles G. Boyd, "A Note from Lt Gen Charles G. Boyd, Air University Commander," Airpower Journal. (Fall 1990), 4.

[8]Telephone conversation, author to Maj Mark Harpole, HQ TAC/XPPC. 11 May 1992.

[9]Yickie M. Graham, "One for All," Airman, Yol.36, No.2, February 1992, 5.

CHAPTER II

BACKGROUND

Though many view the composite wing as a totally modern innovation, the concept is in fact nothing more than the continuation of an organizational debate that has raged since the dawn of military operations. Simply put, the age-old question is one of how and at what level within an organization to integrate various weapons or different types of troops to achieve an efficient, well balanced fighting force. Napoleon was perhaps the first to successfully grapple with this problem. Rather than accept the conventional wisdom of marching an entire army to battle in one long, ponderous column, General Bonaparte, acting on the theories of military practitioners like French artilleryman Jean-Pierre du Teil, split his army into smaller composite groups, later known as divisions, comprised of infantry, cavalry, and artillery. His divisions could march to battle over varied, circuitous routes much faster than one large army, and at the same time, compound the enemy's defensive problem while retaining all the combat elements needed to fight an independent engagement. As noted historian Peter Paret points out in, Makers of Modern Strategy, this integrated technique

> ….was to be fundamental to Napoleon's strategy and his conduct of battle: the breaking up of the formerly unitary army into permanent divisions and corps, combining infantry, cavalry, artillery, and support services. On campaign these large subunits usually moved on separate roads, each responsible for its own area, but capable of mutual support. The extended army covered much ground, which made it easier to maintain, but also, and primarily, enabled its component parts to move more rapidly, gave them greater flexibility, and multiplied the commander in chief's operational choices….These and other innovations broke with the assumptions, techniques, and practices of generations of European soldiers. They radically changed the conduct of war between 1792 and 1815, and established patterns that remained influential throughout the nineteenth century, and beyond.[10]

Not surprisingly, few generals could match Napoleon's organizational genius or mastery of the battlefield and his success touched off many years of debate and experimentation.

Many later theorists and military writers expounded on Napoleon's organizational combined-arms theme. Antoine Henri Jomini, one of Napoleon's lieutenants and greatest admirers, later concluded in his seminal work, Summary of the Art of War.

> It seems a waste of breath to say that the commander of a body of troops composed of the three arms should employ them so that they will give mutual support and assistance; but, after all, this is the only fundamental rule that can be established, for an attempt to prescribe for such a commander a special course of conduct in every case that may arise, when these cases may be infinitely varied, would involve him in an inextricable labyrinth of instructions.[11]

Similarly, Carl Von Clausewitz wrote in his masterpiece, On War.

> Combined arms are therefore desirable, to say the least, for any unit that frequently finds itself operating in isolation….From the strategic point of view, a combination of forces in the order of battle is important only for those parts of the whole that, under ordinary conditions, might be stationed separately, and forced into a separate engagement.[12]

Sadly, despite their insight and wisdom, neither Jomini or Clausewitz could prescribe a formula for properly achieving the integrated or composite arms approach to war. That dilemma survived for over one hundred years and fell on the airman's shoulders from almost the earliest days of aerial warfare.

Like almost any air force, the United States Air Force is by nature a composite force. Unlike Napoleon, however, airmen do not worry about the proper mix of infantry, cavalry, and artillery; they are concerned with the efficient and effective integration of fighter, bomber, attack, transport, and reconnaissance aircraft into a capable fighting force--a composite force. Again the questions arises, "At what organizational level within the Air Force must integration occur to achieve the desired combat performance?" Should aircraft types and capabilities mesh at the squadron level or at some higher gradient of command? Airmen have long wrestled with these questions, but none more so than theorists at the Air Corps Tactical School (ACTS) in the 1920s and '30s. For example, in his 1928 ACTS student thesis, The Composite Wing, Major Arnold N. Krogstad argued against the composite wing concept as it then existed, citing unnecessary layers of command and unrealistic basing requirements as major pitfalls.[13] However, just three years later another ACTS student, Lieutenant C. McK. Robinson, wrote a paper deploring the Air Corps' lack of integration and teamwork and calling for composite forces built around the bomber as a nucleus. Lieutenant Robinson pointed to the infantry division as the epitome of a composite fighting machine. Its respective elements offered mutual support and overall operations were easily coordinated in a simple plan of action. Unlike the Air Corps, argued Lieutenant Robinson, the

infantry division was a naturally existing, basic striking force suitable for any circumstance, not an arm requiring special tailoring for a special occasion.[14] To illustrate how ridiculously segmented Air Corps' organization had become in Lieutenant Robinson's opinion, he asked his readers to

> ….suppose the infantry had not been fighting for centuries--had not tested its organization in battle down thru (sic) the ages, and, using the Air Corps as a guide, fashioned its organizations into homogeneous brigades of machine guns, homogeneous brigades of one-pounders, homogeneous brigades of trench mortars, homogeneous brigades of light artillery and homogeneous brigades of riflemen--the whole comprising a division. Of course the division commander could secure "coordination"--after a fashion, but where is the element of leadership, the element of teamwork, and the semblance of a composite force, trained as a combat team?[15]

Although today's airman might take Lieutenant Robinson's amusingly twisted argument to task based on its dubious reverse logic, both he and Major Krogstad provide ample evidence that the composite wing issue is not revolutionary or unique to today's air force but is merely the continuation of a heated debate nearly as old as the US Air Force itself.

Interestingly enough, General McPeak's "one-base, one-commander" concept is also not revolutionary in the Air Force but has been around long enough to accumulate more than a little dust. In 1940, for example, General Henry H, "Hap" Arnold reviewed and approved a study to guide the Air Corps' existing organization and pending expansion. Citing proper organization as a subject "of immediate and primary importance" to the Air Corps' health and effectiveness. General Arnold outlined twenty-three rules of thumb for effective organization, the first two of which stated

> a. That a common local commander at each permanent Air Corps station should be responsible for all units, troops and activities thereat (sic). [and]
> b. That a commander of units, troops and activities at one permanent station should not be in the chain of command for units, troops or activities at any other permanent station.[16]

Another similar document bearing General Arnold's signature and personal comments declared: "It is of paramount importance that the 'chain of command' be single and direct. Unity of command is required. Any situations where two officers are jointly responsible is intolerable."[17] Sadly, history is replete with examples of units and commanders that failed to follow these basic, enduring principles. Clearly, while Arnold and his lieutenants might have stumbled in execution, their leadership theories have endured for over five decades.

Unfortunately, the term "composite wing" itself has not weathered the test of time quite as well. Before proceeding further, it is extremely important to understand what a composite wing is and what the term has meant in the past. The very phrase "composite wing" is a booby trap threatening to ensnare any unwary airman or scholar struggling to understand its history. A brief look at a WWII-era composite wing, the Chinese-American Composite Wing, will illustrate this point. Its name suggests it might be an ideal unit with which to compare and contrast today's composite wing concept. Unfortunately, nothing could be further from the truth.

The Chinese-American Composite Wing (CACW) developed in the fertile mind of Major General Claire Chennault, commander of the Fourteenth Air Force in China and former leader of the American Volunteer Group, the Flying Tigers. By 1943, the Chinese, teetering on the precipice of defeat, desperately needed American assistance. Unfortunately, America, committed to a Europe-first strategy for prosecuting the war, could spare equipment but little manpower to the far flung fight in China. Chennault's solution was simple--Chinese pilots would augment the ranks of American units assigned to the Fourteenth Air Force. Commanded by an American with a Chinese colonel as his deputy, each CACW unit was manned with nearly equal numbers of American and Chinese operations and maintenance personnel. To add a confusing twist, the CACW's aircraft bore the twelve-pointed Nationalist Chinese star and its squadrons were numbered in the Chinese Air Force, duplicating designations of US squadrons flying throughout the world and even in China itself. Eventually the Wing comprised three four-squadron groups, the Third and Fifth Pursuit and the First Bombardment Groups.[18] The fighter squadrons employed P-40 Warhawks and later switched to the P-51 Mustang, while the bombardment group flew B-25 Mitchells. Despite worn and often obsolete lend-lease aircraft, primitive living conditions, a rock- bottom priority on the Fourteenth AF supply list, and seemingly insurmountable cultural and linguistic differences, the Chinese-American Composite

Wing racked up an enviable record in its remote corner of the war in just twenty-one months. For example, the CACW won a unit citation for its two-month effort to blunt a large Japanese offensive threatening the Honan Province beginning on May 1, 1944. The citation credited the Wing with 2,317 enemy troops killed or wounded; 1,317 cavalry and pack horses destroyed; and 865 enemy vehicles, 48 enemy aircraft, and 110 supply boats destroyed or damaged. In addition, the Wing caused extensive destruction and damage to rail yards, docks, supply dumps, gun positions, and other critical installations, all with negligible losses to themselves.[19] This tradition of excellence continued until the Chinese-American Composite Wing disbanded just over one month after the Japanese surrender on September 21, 1945.[20] Retired Brigadier General Gene Strickland, a former CACW pilot and squadron commander, insists the wing's record compared favorably with any all-American unit, a remarkable feat considering the many obstacles in its path.[21] All in all, the Chinese-American Composite Wing appears to validate many of the virtues General McPeak ascribes to his composite wing concept. In reality, however, the CACW and a modern composite wing are radically different.

The first difference is size. The CACW, true to the definition of a wing before 1951, consisted of two fighter groups and a bomber group, in all totaling twelve squadrons and roughly 300 aircraft.[22] On the other hand, General McPeak's concept calls for units of varying size, but generally equal to or slightly smaller than a normal seventy-two-plane tactical fighter wing. For example, one tentative proposal for the 366th Wing at Mountain Home AFB, Idaho, would give the unit roughly forty-two aircraft--thirty-three fighters and nine large support aircraft.[23] The difference between the two organizations is rooted in the definition of the term "wing." Prior to 1951, a wing was essentially a tactical unit consisting of two or more groups normally of the same class of aviation; e.g., fighters or bombers, etc. A "group" was both a tactical and administrative unit consisting of two or more squadrons. In 1951, the Air Force found this breakdown increasingly confusing and cumbersome, primarily because the "group" designation counted only the aircraft and the crews who flew them. The term failed to acknowledge the roughly 795 maintenance personnel or the nearly 1,200 men and women who handled the supply, logistics, medical, or

staff functions. "In 1951, the Air Force included these 2,300 personnel in its basic unit--an Air Force Wing. Each wing was composed of a combat group, three supporting groups, and a headquarters unit, all commanded by a brigadier general."[24] In short, today's three-squadron, seventy-two-plane fighter wing is small when compared to a WWII-era wing like the Chinese-American Composite Wing. A wing as we know it today is really the equivalent of a WWII group. For the remainder of this study, therefore, we will consider a pre-1951 group to be the equivalent of a post-1951 wing.

Another terminology problem encountered when comparing the CACW to today's concept of a composite wing is the word "composite" itself. Webster's New American Dictionary describes "composite" as anything made up of distinct parts. General McPeak and the USAF Dictionary define a composite wing simply as one possessing different types of aircraft.[25] Ironically, the Chinese-American Composite Wing was designated composite because it not only combined fighter and bomber squadrons, it integrated personnel of different nationalities and races.[26] Similarly, the Air Force liberally applied the term "composite" to any number of different organizations. For instance, the Air Force labeled units "composite" that were comprised of different classes of airplanes (bombers and fighters), airplanes of the same class but different types (B-25s and B-17s), men and women, whites and blacks, and regular and reserve officers, to name a few. Recognizing these anomalies, this study will ignore those units that do not strictly adhere to General McPeak's definition of a composite unit and focus primarily on wing-sized units having different types of aircraft.

One final bit of terminology clouds the composite wing issue. Just as the Air Force liberally hung the term on many sorts of organizations, it also failed to apply the term to those justly deserving the name. One of the earliest such units was the First Air Commando Group, formed to fight in the jungles of Southeast Asia during World War II. The Air Commandos, examined in greater detail below, flew L-l Vigilant liaison aircraft, C-47 cargo types, UC-64 Norseman utility craft, P-51 Mustang fighters, B-2) Mitchell bombers, CG-4A Waco gliders, and even YR-4 helicopters.[27] Not only was the group not labeled "composite," according to the

group's wartime commander, Colonel Philip G. Cochran, the unit was not even originally designated as a group, but "got a group designation after awhile because we drove the lines of authority bats because we didn't have a number."[28] Likewise today, as we have already seen, the Fourteenth Flying Training Wing at Columbus AFB, Mississippi, is not labeled a composite wing although, like all undergraduate pilot training bases, it operates both T-37 and T-38 aircraft. Air Force history is replete with examples of the use and misuse of the "composite" nomenclature. The haphazard way in which the term has been applied makes it extremely difficult to quickly identify composite units. For this reason, and for the sake of time, this study confines itself only to selected composite units from American Air Force history; i.e., the Army Air Service, the Army Air Corps, and the U.S. Air Force. That history effectively began in 1917, the year America entered the Great War.

NOTES CHAPTER II

[10]Peter Paret, ed., Makers of Modern Strategy (Princeton: Princeton University Press, 1986), 125.

[11]Antoine Henri Jomini, "Summary of the Art of War." In Roots of Strategy, Book 2, ed by Brigadier Genera! J.D. Hittle (Harrrisburg, Pennsylvania: Stackpole Books, 1987), 551.

[12]Carl Von Clausewitz, On War, ed. and trans. by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1984), 294-295.

[13]Students were required to periodically expound upon current airpower issues during their year-long course of study at Langley Field. As a sidelight, Major Krogstad could undoubtedly argue with some authority on the composite wing issue, having previously been assigned to the 6th Composite Group, Hawaiian Department. Krogstad, "The Composite Wing."

[14]C. McK. Robinson, "Air Force Organization," Air Corps Tactical School Study, Langley Field, Virginia, 20 February 1931, 2. Call 248.2l1-62B, 20 Feb 31 in the USAF Collection, USAFHRC. Hereafter, call numbers will be listed in the bibliography, when available.

[15]Ibid., 3.

[16]Staff Summary, "Organization of Air Corps Tactical Units and Command Agencies." Study conducted for the Adjutant General. 23 January 1940.

[17]"The Air Force in Theaters of Operations: Organization and Functions." Headquarters Army Air Forces. The War Department. Washington. D.C.: May 19-43, 3.

[18]Unit History of the Chinese American-Composite Wing (October 1943 -December 1943), 5.

[19]Carl Molesworth and H. Stephens Moseley, "Fighter Operations of the Chinese-American Composite Wing," American Aviation Historical Societv JournaI, (Winter 1982), 249.

[20]As we will see, composite units have historically been organized to perform specific tasks and, once these tasks were accomplished, the units, often lacking flexibility, generally disbanded. In this respect the CACW held true to form.

[21]Molesworth and Moseley, "Fighter Operations of the Chinese-American Composite Wing", 256.

[22]Unit History of the Chinese-American Composite Wing (Oct 43-Dec 43), 3.

[23]"The Composite Wing,"HQ AF/XOOT Briefing, No Date, Slide 14.

[24]"What Is a Combat Wing?", Flying, Special U.S. Air Force Issue, May 1951, 130.

[25]Woodford A, Heflin, ed., The United States Air Force Dictionary (New York: D. Van Nostrand Company, Inc., 1968), 133.

[26]Unit History of the Chinese-American Composite Wing (Oct 43-Dec 43), 11.

[27]Unit History of the 1st Air Commando Group (Sep 43 -Aug 45), 6.

[28]0ral Interview with Col Philip G. Cochran, Office of Air Force History, 20-21 October and 11 November 1975, 289.

CHAPTER III

EARLY AVIATION ORGANIZATION AND WORLD WAR I

On the eve of WWI, American possessed no composite groups; in fact, the Army Air Service did not have a single group. Despite the Wright Brothers' early lead in the aviation field, America had allowed this advantage to ebb away. While European air forces had been grappling in aerial combat for nearly three years, the United States entered the war against the Central Powers on 6 April 1917 with only fifty-four obsolete combat aircraft, 300 trainers, seven combat squadrons in various stages of readiness, 131 officers, and 1,087 enlisted men.[29] Just over one month later, French Premier Alexandre Ribot cabled President Wilson proposing the United States form a flying corps of 4,500 planes, complete with personnel and logistics, for service in France in 1918. Wilson and the Air Service accepted the proposal and, in addition, agreed to produce 12,000 combat and 5,000 training planes for the Allied cause during the first half of 1918. Congress responded with $64 million for the program, one of the largest single appropriations up to that time.[30] America's race for air power was on and the course would be a difficult one.

Of the hundreds of problems confronting the fledgling American Air Service, one of the most perplexing would be how to organize the rapidly expanding force. Faced with the seemingly insurmountable challenges of training hundreds of pilots and mechanics and producing thousands of airplanes, the Americans opted to simply mimic the organizational structures of the more experienced French and British. According to Lieutenant Lucien H. Thayer, one of the first American aviators to see combat on the Western Front, Air Service organization was almost an afterthought. In his diary he wrote, "The problems of the Air Service, AEF, had resolved themselves into two main groups: those of training and supply. Given the personnel, properly trained, and the machines to fly, the organism would function."[31] In other words, given the proper training and equipment, organization and function would take care of themselves. While Americans set about preparing for combat, "tactical organization and the determination of exact composition of Air Service units remained for many months in a more or less nebulous state."[32] However, when the first American aviators began to arrive in France in late 1917, they

were quickly organized into squadrons, equipped with the same make and model of aircraft, and sent into combat. Based on the French model, though different types of aircraft commonly flew in mixed formations for mutual protection, squadrons were always of one type and standard size: twenty-four ships for a day observation unit; twenty-five for day pursuit or bombardment squadrons; and ten planes for a night bombardment squadron.[33]

The French learned early in the war that homogeneous units were more efficient and retained more combat power than composite units.[34] A number of factors accounted for this. First of all, even the earliest airplanes were highly advanced, hand-crafted, technological puzzles requiring extraordinary efforts to keep them airborne. As Clayton Bissell, another early American WWI aviator noted,

> In the organization of a single squadron, forty-six trades were represented. The task was difficult, but even more difficult proved the subsequent problem of instructing [tradesmen] to apply their trades in their new work. A battle plane represents a compromise between speed, weight carrying, and safety. Tradesmen working on these structures, lightened to the point of breaking, and having men's lives at stake, had to be imbued with a realization of the necessity for thoroughness and care foreign to usual trade practice.[35]

Combat aviation began to show its propensity for what we today call a large tooth-to-tail ratio--it required forty-seven support personnel on the ground to put one WWI pilot in the air.[36] Second, the number and variety of aircraft in use was staggering; the French alone produced fifteen different types of planes and a like number of different engines.[37] Another problem proved to be the airplane's high turnover and attrition rate. Technological advances came so rapidly during the war that a state-of-the-art airplane could be obsolete in as little as one month. However, seldom did WWI combat planes last that long. Accidents and combat losses often claimed as many as eight of a French squadron's thirty planes each day. One French group based at Lille in 1916 had one plane left in commission after five days in combat. Those that managed to survive combat and return to Lille were grounded, never to fly again for lack of replacement parts or the facilities to handcraft them.[38] In short, the maintenance complexity alone would have been enough to

convince the French to stick to homogeneous units; however, there were other reasons as well.

Operational factors also argued for homogeneously equipped units. If early airplanes were hard to maintain, they were also difficult and risky to fly. It made good sense to keep a pilot flying a particular type airplane, especially if he survived the dangerous, accident-prone initial training period. Second, by 1917 the Allies found that squadrons improved their survival rate and striking power by flying in formation. However, performance varied so widely by type that a formation of mixed ships was almost impossible to maintain. Range, speed, altitude capability, endurance, and firepower all affected the ability of a formation to operate as one. Generally lacking radios to orchestrate order from such chaos, pilots found it easier to restrict formations to one make of aircraft. Training also played a major role in the decision to stick with one type of airplane per unit. While an observation pilot could be trained relatively quickly, a pursuit pilot required months of intense preparation for combat. Pilots, like their aircraft, became mission-oriented; and though they often worked in unison with other types in the air, thought processes and mental attitudes formed boundaries between the various branches of aviation. The rudimentary nature of airfields added to this class distinction. For most of the war, airfields were nothing more than cow pastures that would permit takeoffs into the prevailing wind. As air forces grew, suitable fields were often difficult to find and no space was overlooked. High performance, range-limited pursuit craft, able to take off in short distances, were stationed on small fields close to the front, while longer-legged bombers, requiring more spacious, developed airdromes, settled further to the rear. All these factors--safety, performance, training, function and more--continued to push Allied airmen to maintain homogeneously equipped units.

Later in the war, when American pilots began to reach France in large numbers and combat organizations expanded in size, units remained homogeneous. The First Pursuit Group, formed by combining the Twenty- seventh, Ninety-fourth, Ninety-fifth, and 174th Pursuit Squadrons on 4 May

1918, became the first American tactical unit larger than squadron size and set the organizational stage for what followed. Before long, the Americans formed bomber, observation, and attack groups. In the Meuse-Argonne Offensive in September 1918, Allied airmen put these groups to good use, massing them in coordinated attacks for maximum striking power and mutual defensive support. For example, on 9 October a massive, well-coordinated attack force of over 200 bombers, 100 fighters, and fifty-three attack planes converged on German positions near Damvillers, France. Met with strong opposition, the American bombers unloaded thirty-two tons of bombs on the target while friendly pursuit dispatched twelve enemy airplanes, losing just one of their own.[39] However, despite increasingly successful experiments to integrate various types of planes into combat striking packages, individual units remained homogeneously equipped.

Only one American unit, the I Observation Group, was composite, although apparently by coincidence. In the spring of 1918, the AEF formed the I Corps Observation Group by combining the First, Twelfth, and Eighty-eighth Observation Squadrons at Ourches, France.[40] The First flew Spad XIs; the Twelfth was equipped with French two-seat Renault ARs; and the Eighty-eighth received British Sopwiths. The group's mission was primarily visual and photographic reconnaissance to keep higher command informed of the enemy's general situation. As Maurer Maurer notes in his multi-volume set on WWI:

> It was not expected at this time that the work of the 1st Corps group (sic) would produce any important tactical results or render any great assistance to the conduct of operations. It was expected, rather, that this period on a quiet sector of the front would serve to complete the schooling of pilots and observers and render them more competent to undertake intensive operations elsewhere on a larger and more complete scale.[41]

Whether their composite nature caused the group any difficulty has been lost to history, although their overall performance appears to have been on par with other observation units of the period. However, of the three major types of aviation used in the war--pursuit, bomber, and observation--the last, generally flying alone or in flights of two aircraft, would have been least affected by a composite arrangement.

When the war ended in November 1918, the Americans had forty-five squadrons and five groups

on the front lines and, with the exception of I Corps Observation Group, all were homogeneously equipped. The war taught the Americans many important lessons about aerial warfare. They had come to realize air power's great destructive potential. They also learned that different types of aircraft could work together to further the goal of the overall force. However, airmen also learned air power was divisible by type and function and, therefore, should be so segregated. This belief became doctrine and official Army post-war texts preached this gospel. For example, one basic manual at the Army's main flying school stated

> The missions required of the Air Service differ so much in character as to necessitate various types of airplanes and a distinctive armament for each type….Each type is designed to perform a particular function and, therefore, is better fitted for the successful performance of such function than is any other type. It is a military axiom that not more than five different things should be directed by one individual, otherwise he will forget something and disaster will result. [This] tactical or fighting organization for the different branches of aviation has been worked out by evolutionary changes in actual campaigns in the air battles of Europe.42

Thus in the skies over the Western Front, early airmen cast the organizational die for almost all future American air power. Since then the Air Force has adhered mightily to the idea that air assets, although often dependent on one another for success, should be based separately by type. Ever since, composite units have been the exception rather than the rule.

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[29]Hennessy, The United States Army Air Arm, April 1861 to April 1917, 192-196.

[30]Maurer Maurer, ed., The U.S. Air Service in World War I, Vol. 2: Early Concepts of Military Aviation (Washington: U.S. Government Printing Office, 1978). 105.

[31]Lucien H.Thayer, America's First Eagles (San Jose: R. James Bender Publishing, 1983). 29.

[32]W. O. Brunow, "Notes and Extracts on the Army Air Corps." Air Corps Tactical School, Langley Field, Virginia, April 1936, 4.

[33]Ibid., 12.

[34]Homogeneous - Composed of parts of the same kind; alike in kind; the opposite of composite. For example, a homogeneous bombardment group might possess three squadrons of B-17s,

[35]Clayton Bissell "Brief History of the Air Corps and Its Late Developments," Study for the Assistant Commandant. Air Corps Tactical School, Langley Field, Virginia. January 1. 1927, 25.

[36]Ibid., 25.

[37]Ibid., 44.

[38] "Curtiss Report." Report of Curtiss Aircraft Company detailing maintenance difficulties experienced in French AF during WWI, 19-40, 6.

[39]Maurer Maurer, Vol. 2, Early Concepts of Military Aviation, 45.

[40]Thayer, America's First Eagles. 76.

[41] Maurer Maurer, ed. TheU.S.AirService in World War I. Vol. I, The Final Report and a Tactical History (Washington D.C., U.S. Government Printing Office, 1978) 172

[42]"Organization and Employment of Air Service," U.S. Army Air Service Advanced Flying School. Kelly Field. Tx.. 1925. 25-26.

CHAPTER IV

THE INTERWAR YEARS

Surprisingly, the interwar years witnessed an almost immediate break with the combat-tested homogeneous basing practiced during World War I. In fact, groundwork was set in place that could have established a much different tradition even before the war in Europe erupted. In 1911 General James Allen, head of the Signal Corps, recommended the Army establish an air station in the Philippines. On December 11, a Wright B with enough spare parts and supporting personnel for six months of operation left San Diego. While the Air Service set about organizing a flying school in the Philippines, another was already in its formative stages in the Hawaiian Islands. In June 1913 two Curtiss airplanes arrived in Hawaii.[43] These small units, though short-lived, would set the stage in America's overseas possessions for the largest use of composite groups in the interwar period.

Immediately after the war, air officers began to take stock of the aviation arm and formulate plans for its integration into America's overall defense network. Brigadier General William "Billy" Mitchell, Assistant Chief of the Air Service, advocated garrisoning strong air forces in America's overseas possessions to protect them and provide a forward defense for the continental United States. In a memo to his boss, Major General Mason M. Patrick, Mitchell said

> In so far (sic) as our insular possessions are concerned, the Philippines will have to have its air force, Hawaii will have to have its air force and a strong air force should be provided on the Island of Guam to act directly to the North in case of an Orange campaign.[44] The defense of the Panama Canal from the Pacific should be distributed between the Hawaiian Islands and the Panama Canal and formed by using airships as airplane carriers and long distance multi-motored planes acting at altitude and hitting the hostile seacraft or aircraft at least five hundred miles from the Panama Canal.[45]

General Mitchell's arguments fell on favorable ears, especially with those Americans hoping to retreat again into isolationism behind their formidable ocean barriers. Later, in 1923, the Lassiter Board, a group of General Staff officers looking into the organization and condition of the Air Service, agreed with Mitchell. By then, however, defense of overseas possessions had become one of Army aviation's basic missions and the Signal Corps received orders, "to conduct air operations of whatever type that are

required incident to the application of the defense plans of the particular overseas possession to which assigned."[46]

Unfortunately, a number of factors made it nearly impossible to transform those orders into reality. First, the 1920 Army Reorganization Act severely limited the Air Service's manpower, funding, and assets. For example, only twenty-eight squadrons were allotted for the defense of the entire United States.[47] While this situation would improve slightly during the interwar years, in 1920 there was barely enough air power to defend the United States adequately, let alone her overseas possessions. Second, maintaining aviation in overseas locations proved to be both difficult and expensive. Few suitable airfields were available in these austere territories and building more, where possible, required unavailable funding. In addition, an airplane's voracious appetite for spare parts consumed stockpiles at a tremendous rate, and long logistics lines aggravated the situation. Finally, many aviators pondered over the composition and size of any overseas aviation detachment. Obviously the units would have to be capable of independent action. They would also have to be able to meet any threat, including naval, air, or amphibious attacks. Though the mission called for large numbers of bombers, fighters, and observation types, the reality of the situation dictated otherwise. As Major H.C. Pratt, Chief of Air Service Operations and Training, would later admit, "a composite group is a very unnecessary organization and only to be resorted to when every other arrangement has been considered."[48] In reality, however, with few planes, little spare manpower, and a miserly budget, the Air Service found the composite group was just the arrangement needed to defend America's overseas possessions.

While air assets in the continental US remained almost religiously segregated, airmen set about organizing their overseas composite experiments. The Fourth Composite Group, the first American air unit to officially wear the "composite" badge, formed at Nichols Field, the Philippines, in 1920. In 1922 the Fifth Composite Group assembled at Luke Field, Hawaii, and the Sixth Composite Group was organized at France Field in the Panama Canal Zone. The primary mission of these units was coastal defense, but they were equipped to handle a variety of contingencies. Armed with an ever-evolving succession of aircraft including PW-9 fighter, B-12 bombers, 0-19 observation planes, and a myriad of

attack, liaison, and cargo types, America's overseas units epitomized the term "composite." Their proximity to water also required them to maintain and operate the earliest seaplane variants. So equipped, the composite groups demonstrated their flexibility by performing routine training, aerial photography, aerial reviews, goodwill flights, mercy missions, and search-and-rescue patrols, in addition to normal defense duties. The Fifth Composite Group also sowed seeds from the air for the Territorial Forestry Division and even bombed a lava flow to prevent it from destroying the town of Hilo.[49] The Sixth Composite Group achieved worldwide acclaim for its efforts to aid victims of a 1939 Chilean earthquake.[50] However striking these extracurricular activities might have been, the composite groups' primary role was defense, and they worked diligently to perfect their operations.

War exercises consumed a majority of the time at overseas garrisons. For example, in July 1931, the Fifth Composite Group sent a flight of eight bombers, six 0-19s, and two Sikorsky amphibian planes to attack nearby Wheeler Field. The group's remaining aircraft were to form a defensive screen around the island. More than ten years before the Japanese attack on Pearl Harbor the Air Corps News Letter prophetically reported:

> The weather favored the attacking forces and they approached the Island of Oahu unobserved, appearing suddenly from the clouds and staging a surprise attack….All the Wheeler Field planes were on the airdrome when the enemy appeared….The 26th Attack Squadron were (sic) not able to clear [the field] and would have incurred severe losses.[51]

One week later the group replayed the same scenario, only to have the defending force triumph. However, despite the composite groups' constant preparation for war, they were never intended to be a main combat force.

For several reasons, the Air Corps considered the overseas composite groups as temporary arrangements until Congress could provide more airplanes. First, their limited numbers did not generate enough combat power to withstand sustained attacks. For this reason, all three groups were designed to operate as expandable core units around which reinforcements from the United States could form. This affected the peacetime composition of the groups. Each group possessed large numbers of fighter, attack, and observation craft but relatively few bombers; the rationale being that long-range bombers could

rapidly reach the overseas bases in an emergency while fighters and other short-legged planes would arrive by ship.[52] Planners also believed the composite structure hindered combat power and efficiency. Discussing this limitation, one Air Corps study noted:

> The organization of homogeneous [units] in overseas departments is highly desirable. It is sound organization to provide two or more groups of bombardment or two or more groups of pursuit in each oversea department. This would require the formation of a homogeneous bombardment wing in Hawaii and a bombardment wing and a pursuit wing in Panama.[53]

When the Air Corps began a rapid expansion on the eve of WWII, this is exactly what happened. The Fourth and Fifth Composite groups became homogeneous units and were absorbed by larger organizations. Only the Sixth Composite Group soldiered through the war. Shedding all but its bombers in 1939, the Sixth Composite Group flew B-17s, B-18s, and B-24s on long range reconnaissance and anti-submarine missions throughout WWII.

The history of the Fourth, Fifth, and Sixth Composite Groups highlights some important lessons. For over two decades they demonstrated the ability of independent, highly integrated units to carry out operations in often austere locations. Conversely, while their extremely varied aircraft inventory afforded a high degree of mission flexibility, it also diluted the group's available combat power. As expected, it also drove maintenance crews crazy trying to keep such a menagerie in the air. Unfortunately, it is probably fair to say that these experiments in remote corners of the world had little impact on Air Force doctrine or organization.

Two other major composites formed during the interwar period are worth reviewing. The first is the Twenty-third Composite Group, a test and evaluation organization, and the Twenty-eighth Composite Group, forerunner of the Alaskan Air Command.

The Twenty-third Composite Group was activated at Maxwell Field, Alabama, on 1 August 1939. It consisted of the First Pursuit Squadron, the Fifty-fourth Bombardment Group (Medium), and the Twenty-fourth Attack-Bombardment Squadron, each equipped with the latest model service airplanes. The unit was formed in response to the Air Corps Tactical School's failed attempts throughout the '30s to

have regular tactical units demonstrate or test tactics and equipment. Invariably the selected units would be unavailable, improperly equipped, or ill-trained. To correct this deficiency, the Twenty-third Composite Group was chartered to serve as a laboratory for service test of equipment, to carry out research in tactics and aerial technique, and to demonstrate their perfected skills and innovations.[54] Throughout its short life the Twenty-third performed admirably, testing many of the tactics and much of the equipment later to see service in WWII. The group had only one major shortcoming. All of its flyers were required to be highly experienced aviators--a rare commodity in the rapidly expanding Air Corps of the late '30s. The battle over who would get the Air Corps' most highly trained men became a stumbling block between the ACTS Commandant and HQ Army Air Corps. According to HQ and official Tables of Organization, a group just couldn't have its entire complement of pilots consist of captains and majors. The problem resolved itself in June 1940, when the ACTS suspended classes. In a sleight of hand, the Twenty-third Composite Group changed its name to the Air Corps Proving Ground Detachment and quietly slipped away to Eglin Field, Florida, where it resumed its wartime mission. Designated a detachment instead of a group, the unit was free to continue its work without further interference from headquarters.[55] The Twenty-third Composite Group is significant in history because it demonstrated the value of an integrated, highly trained unit to test and perfect tactics and equipment. Similar units exist today at the Tactical Fighter Weapons Center at Nellis AFB, Nevada, and the Tactical Air Warfare Center, at Eglin AFB, Florida, the direct descendant of the Twenty-third Composite Group. In these units, the composite wing concept lives on.

One other composite unit emerged before America entered World War II--the Twenty-eighth Composite Group in Alaska. For years Alaska was little more than a curiosity to most Americans; and those who argued for a strong air force in the cold, unforgiving territory generally met with ridicule. In 1935 Congressman Anthony J. Dimond, one of Alaska's representatives to the Seventy-third Congress, introduced H.R. 9524, a bill authorizing a military base and an airfield near Fairbanks. The bill would have increased Army Air Corps strength by 2,500 men and over 100 airplanes. Though the Air Corps constantly clamored for more men and equipment during this period, they rendered an unfavorable report

on the project and H.R. 9524 died. The Air Corps opposed the bill primarily because it called for a permanent composite group at Fairbanks, but also because they could not foresee any plausible threat to Alaska.[56] By 1940, however, the growing Japanese menace in the Pacific began to shed a different light on Alaska's strategic importance. In April 1940, General George C. Marshall, Army Chief of Staff, warned, "...with Alaska relatively unprotected, an enemy might outflank the great defensive system at Pearl Harbor."[57] General Arnold, testifying before Congress, added

> Due to the changed world conditions since last Spring, a re-estimate of conditions from better facts received from a board of officers sent to Alaska during July and August, 1939, it now seems very necessary to establish an operating base at Anchorage in addition to the cold Weather Test Base at Fairbanks. There will be at Anchorage one Composite Group…The flights at Fairbanks will be rotated with flights from the Composite Group so that all personnel and equipment in Alaska will be utilized in the cold weather test conducted. In that way a more thorough cold weather test can be accomplished.[58]

The Air Corps had long dreamed of a cold weather test facility in Alaska. Now, however, the project assumed a sense of urgency previously missing. Once again the Air Corps raced to move air power into a potential combat zone.

General Marshall sent Brigadier General S. B. Breckner to Alaska in July 1940 to assume command of the territory, and what he found was shocking. Living conditions were at best primitive, communications were poor, weather was rotten, there were only two suitable air bases, and everything, especially aircraft, was in short supply. Almost at once General Breckner wrote to General Marshall, "My immediate concern is to build up an air force sufficiently strong to make any hostile expedition against Alaskan shores so hazardous a venture as to remove it from the realm of probability. This accomplished, our Navy can be released from the task of furnishing us with constant protection and will be free to operate elsewhere.[59] Less than than five months later the Japanese attack on Pearl Harbor would make General Breckner's plan a necessity.

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[43]"The History of 4 Composite Group," Chief Signal Officer Annual Report. 265.

[44]Army contingency plans were color coded to denote a particular potential enemy; "Orange" plans were aimed at Japan.

[45]Memorandum, Brigadier General William Mitchell, Asst Chief of Air Staff, to General Patrick, Chief Air Staff, subject: "Air Defense of Foreign Possessions," 10 May 1923.

[46]Transcript, "Proceedings of the Lassiter Board," March 1923, 7.

[47]Brunow, "Notes and Extracts on the Army Air Corps," 17.

[48]Memorandum, Major Pratt, Operations and Plans Div, to General Fechet, subject: "Location of Additional Air Corps Troops at Fort Bragg," 17 November 1927.

[49]History of Aviation in the Hawaiian Department, 1920-1928, 3-4.

[50]Maurer Maurer, Combat Squadrons of the Air Force (Washington: U.S. Government Printing Office, 1969), 127.

[51]"Luke Field Personnel Engage in Tactical Problems," Air Corps News Letter, Vol. 15, No, 9. 21 July 1931. 268.

[52]Staff Summary, "Organization of Aviation in Overseas Departments," U.S. Army Air Corps study of effective use of air power in America's overseas possessions, 1935. Tab F,

[53]Ibid.

[54]Study, "Establishment of An Air Corps Tactical Center" Air Corps Tactical School Study. Maxwell Field, Alabama, 15 September 1939. 29

[55]General Correspondence. "Matters Concerning Pursuit and Fighter Aircraft Assigned to the 23 Composite Group," Air Corps Tactical School, Maxwell Field, Alabama. 1940.

[56]Memorandum, Lieutenant Colonel McChord, Chief Air Corps Plans Div, to Chief, Air Corps, subject: "Development of Air Forces in Alaska," 7 December 1935.

[57]Report, "The Anchorage Base," To Air Corps Chief of Staff, 8 Apri1 1940.

[58]Transcript. "Air Corps Defense Estimates for Fiscal Year 1941," General.Arnold's testimony before Congress detailing plans for establishing a composite group in Alaska, 1940.

[59]Letter, General Breckner to General G .C. Marshall, subject: "Status of Air Forces in Alaska," 24 July 1941.

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CHAPTER V

WORLD WAR II

The period from 1940 to 1945 can probably be described as the composite group's golden years. Though still the exception rather than the rule, combat operations during World War II earned the composite group at least a modicum of respect in Air Corps circles. Composite groups served with distinction in nearly every theater of operations and faced some of the toughest wartime challenges handed the Army Air Forces. Nowhere were the challenges more imponderable than in Alaska's arctic reaches--destination for the Twenty-eighth Composite Group as war loomed on America's horizon.

The Twenty-eighth Composite Group, comprised of the Eighteenth Pursuit and Seventy-third Bombardment Squadrons, was activated at March Field, California, in February 1940 for deployment to Alaska. Not until March 1941, however, did the group's lead elements begin to arrive in Anchorage. Over the next two years the Twenty-eighth would include both the Eleventh and Eighteenth Fighter Squadrons, and the Thirty-sixth, Seventy-third, and Seventy-seventh Bombardment Squadrons. Its aircraft included whatever assorted types could be scraped together in the early days of WWII. From 1941 to 1943 the group flew P-38s, P-39s, P-40s, B-17s, LB-30s[60], and B-26 Marauders; in 1944 B-24s and B-25s were added.[61] The group conducted operations against the Japanese throughout the war until deactivated on 20 October 1945.

Although the Twenty-eighth Composite Group won a distinguished unit citation for its action in the Kurile Islands from April 1944 to August 1945, its aircraft often hampered the group's performance. Alaska's harsh climate and expansive territory demanded long-range, durable aircraft but, in the haste to get airplanes north, the Air Corps failed to consider these requirements. As a result, many of the Twenty-eighth's planes were either not "winterized" before flying north or were simply unsuited to the tasks assigned them. Almost all the group's airplanes lacked instruments for bad weather flying. Many fighters, especially P-39s and P-40s, lacking sufficient range or endurance to cope with the inclement conditions, ran short of fuel and crashed. Furthermore, the B-26 Marauder, known as a "hot ship" because of its fast takeoff and landing speeds, was ill-suited for operations in icy conditions. Many ended

up as twisted heaps off the end of Elmendorf's runway. Finally, the landing gear on P-39s, LB-30s and B-24 Liberators would often buckle on rough, cracked Alaskan runways. All of these deficiencies were reported through channels, and the Twenty-eighth repeatedly requested more long-range P-38 Lightnings and sturdy B-17 Flying Fortresses, to little avail, although the P-39s were withdrawn from Alaskan service after a brief but accident-plagued stint.[62] However, lacking the desired equipment, the Twenty-eighth simply used what it had. In one case the group's B-26s were uncharacteristically pressed into action as torpedo planes after some Army and Navy pilots came up with the idea over coffee.[63] While this feat highlights the innovation commonly found in composite units, it does not make up for the tremendous loss of life and assets that resulted when ill-suited aircraft were haphazardly sent to the region. In fairness, however, it is easy to understand how such miscalculations and errors were made, especially since American doctrine stressed homogeneous basing and airmen had little experience with composite units or the Alaskan weather.

During the interwar years and running through World War II Americans continued to believe in the virtues of homogenous units and technology helped reinforce the perception. Airplanes became increasingly difficult to fly and maintain following WWI, especially the big four-engine bombers. In 1941, for example, it cost over $55 per B-17 flying hour and only $15 for each P-40 hour.[64] Conversely, the B-17 could only perform eight monthly missions while the P-40 would produce twenty in the same period.[65] Figures such as these prompted one staff officer to remark:

> ….aircraft are mechanical vehicles with varying degrees of skill required to maintain them in an air-worthiness condition for combat operation. We cannot expect 100% operation of all aircraft all of the time, therefore, based upon years of experience, including actual combat in the World War, certain tactical groupings of aircraft [homogeneous groups] were determined as logical with the knowledge that these units would have an average of 75% of their assigned aircraft for the daily performance of missions. The individual aircraft of these tactical groupings are so interdependent on each other that any decrease below 75% would seriously, if not entirely destroy the combat power of a respective unit. The respective tactical units must be organized on a 100% basis [i.e., homogeneously] if we are to provide 75% as an effective trained team.[66]

In short, without adequate maintenance and the appropriate organizational structure, an air force would be

handicapped before it ever left the ground.

Once airborne, however, getting enough combat power to a target was a genuine concern, even with modern airplanes like the B-17. Some pre-war planners figured it would take over 280 B-17s to destroy just one oil refinery.[67] Still others predicted a formation of bombers would have to drop 1,200 bombs on a fifty-by-eighty foot target to ensure just three fell within 1,000 feet.[68] In many instances, this latter estimate proved to be overly optimistic. During OPERATION CORKSCREW, the 1943 capture of the Mediterranean Island of Pantelleria, American bomber crews won commendations for their accuracy; however, they dropped 1,486 bombs (219 tons) to destroy one large gun battery.[69] Other wartime bombing missions produced much less favorable results.

Aircraft performance also argued against composite units. In 1936, a modern bomber cruised at 220 MPH. had a ceiling of 25,000 feet and a range of 2,220 miles, could land on a 2,000-foot runway, and required a prepared operating surface. On the other hand, a front line fighter cruised at 270 MPH, was able to climb to 30,000 feet and range out to 1,255 miles, but could land and stop on 1,000 feet of pasture.[70] Considered alone, the bomber's requirement for a paved operating surface helped segregate it from other types. Later, during WWII, an even wider disparity in aircraft performance ensured homogeneous basing. The B-29, for example, required 8,500-foot, twelve-inch-thick runways stressed for 140,000 pounds.[71] The B-29's primary escorts in the Pacific, the P-47N and the P-51D, required 3,800- and 2,900-foot surfaces, respectively.[72] While the Mustangs and Thunderbolts could operate from B-29 bases, they would then lack the range to escort the Superfortresses to enemy targets. All in all. performance played a large part in keeping air power segregated by aircraft type.

However, doctrine helped shape the face of Air Corps tactical organizations. Air Corps doctrine of the '20s and '30s stressed the need for homogeneous units. According to Air Corps doctrine, the group was the largest entity one commander could command, coordinate, and control in flight.[73] In 1934 General Benjamin Foulois, Chief of the Air Corps, stated, 'Tactical units, especially attack, pursuit and bombardment, must be homogeneous to be effective as combat units. It is highly desirable to have the entire group equipped with the same or closely similar models, since close coordination of speed, range,

load, and ceiling is necessary for the unit to operate.[74] In 1941 Chief of the Air Corps, General Hap Arnold, took Foulois' statement one step further by calling for homogeneous wings.[75] Arnold declared, " there are two types of wings, composite and [homogeneous]. The present trend is toward the latter, since it is believed to be more efficient tactically to have only one type of combat aviation in one command of that type."[76] It also might have been more efficient to place all airplanes on a few large airfields, but doctrine dictated otherwise. In 1934 General Foulois told a group of Army War College students, "[Air power's] principal defense against destruction while it is on the ground is in its ability to disperse over many airfields."[77] Consequently, units were homogeneously based and dispersed as much as possible. Finally, the predominance of bomber aviation in the interwar years dealt the coup de grace to composite units. Bomber theorists believed the "bomber would always get through" without aid from other aviation. In fact, basing their arguments on the big bomber's payload capacity, many advocates believed other types of aircraft were superfluous. They claimed, for example, that big bombers caused less congestion in the air than other types per ton of bombs delivered, and also required fewer airdromes to be built, defended, and administered.[78] Obviously, bomber pilots didn't need any support and certainly saw no need to share their airfields or unit insignia with fighter or observer pilots. By December 1941, doctrine clearly delineated organizations along functional lines and homogeneous units were by far the norm.

Despite technology or doctrine, war and the demands levied upon limited air power assets placed new and unusual requirements on the Army Air Corps. These unique demands caused many aviators to reevaluate their thinking about composite units. As a result, the period from 1941 to 1945 produced some of the most unusual and interesting composite groups ever assembled. Surprisingly, one of the war's first such units was not a group at all, but a squadron--the First Composite Squadron. Like composite units before it, the First waged war independently in a remote corner of the world.

The First Composite Squadron was activated on 5 December 1942 to counter the German V-Boat threat in the South Atlantic and provide air defense for the islands and passing convoys.[79] Based at Wideawake Field on Ascension Island, the squadron flew sixteen P-39 fighters and five B-25 bombers. The squadron's aircraft were somewhat of a compromise. Like the Twenty-eighth in Alaska, the First got

what happened to be available. However, the P-39, firing a 37mm cannon, possessed the speed to arrive Quickly on the scene when enemy subs were sighted and had ample firepower to deal decisively with the threat. The B-25 complemented the P-39 shortcomings with increased range and a heavy payload. The squadron's P-39s sat alert with a loaded cannon and one 325-pound depth charge and responded to submarine reports: B-25s, armed with two depth charges and high explosive bombs, flew long-range patrol and attack missions.[80] This complementary situation is an excellent example of the virtues of composite forces. On the other hand, the matchup also presented problems. For example, the squadron's B-25s were chronically grounded for lack of engine parts and on one occasion nine of the squadron's sixteen P-39s (fifty-six percent) were grounded for weeks for want of tires. Unfortunately, parts were not interchangeable between the types.[81] The squadron requested radar-equipped B-24s and B-25s packing 75mm guns, but never got them. By April 1944, the U-Boat menace had all but disappeared from the South Atlantic and the P-39s were phased out of service. In September the rest of the squadron was pulled from combat duty and deactivated, its assets going to other needy commands.

The Air Corps formed two other composite squadrons in 1943. The Second Composite Squadron at Fort Riley, Kansas, supported training exercises at the Army's Cavalry School. The Third Composite Squadron at Lawson Field near Fort Benning, Georgia, provided air support to exercises at the Army's Infantry School. Both squadrons flew fighter, attack, bomber, and liaison aircraft to familiarize soldiers with combined air-ground operations. The squadrons performed almost any type of mission the Army Air Forces could execute in any theater of war. In one case, the Third Composite Squadron's P-40s, fitted with smoke tanks filled with molasses, sprayed ground troops with simulated toxic mustard agent.[82] Both squadrons won high praise for their extraordinary performance supporting Army exercises. In January 1944, the Third Squadron even received the Kepner Award, a trophy presented to the 1st Tactical Air Division's top unit for outstanding operations and maintenance efficiency.[83] No doubt this efficiency and performance surprised many airmen who remembered the Air Corps' terse rebuff to a 1927 request for just such a composite unit at Fort Bragg, North Carolina. At that time one sceptical staff officer warned General Fechet, "….there is absolutely no reason that can be seen for such a unit and, besides, placing an

air unit next to an Army base will ruin its effectiveness."[84] The Second and Third Composite Squadrons proved many in the Air Corps wrong, serving admirably and effectively throughout the war. Although both squadrons deactivated after WWII, they had been instrumental in ironing out many of the air-land interface problems during the war. Surprisingly, no similar units exist today, although the composite wings forming at Pope AFB, North Carolina, and Moody AFB, Georgia have all the potential for filling such a void.

Similar in purpose to the First Composite Squadron, the 342d Composite Group was hastily activated in Iceland in September 1942. Unlike its contemporary to the south, however, the 342d, a two-squadron composite fighter group, did not conduct anti-submarine warfare. Equipped with P-38s, P-39s, and P-40s, the 342d served as part of Iceland's defense force, intercepting unknown aircraft and providing air cover for Allied convoys in the North Atlantic. The group's aircraft were again nothing more than a jumble of available types. The P-39s and P-40s adequately dealt with the German reconnaissance planes frequently found in the area; however, both had already proven inferior to high performance enemy fighters. By far, the 342d's pilots favored the P-38. Not only did it possess greater range, firepower, and endurance, the P-38's twin-engine design provided a margin of safety for pilots flying long patrols over the frigid arctic waters. The group downed only two enemy aircraft during the war, both long-range German reconnaissance planes. In March 1944, with enemy air activity becoming infrequent and the threat of German invasion nil, the 342d Composite Group disbanded.[85]

When the 342d Composite Group disbanded, the European Theater of Operations (ETO) lost its only officially sanctioned composite group. Throughout the war, ETO units stressed homogeneity as much as possible to ease logistics difficulties. Exceptions did surface from time to time, but generally on a very small scale. For example, the Fifth Emergency Rescue Squadron operated throughout the war from RAF Boxted and RAF Halesworth, flying war-weary P-47 s, B-17 s, and OA-10As in the air-sea rescue role.[86] However, unlike war in the vast Pacific Ocean, operations from East Anglia were characterized by good communications and supply routes, close proximity to supporting bases and higher headquarters, and relatively large numbers of aircraft. Logistics for this huge, highly mechanized war

machine became critically important. The organization of two of the major European commands--Eighth and Ninth Air Forces--reveals the measures Air Corps planners took to organize units by aircraft type and thus ease the logistics burden.

Tasked with carrying the strategic air war deep into Germany, the Eighth Air Force relied almost exclusively on the Boeing B-17 and the Consolidated B-24 to provide bombing muscle. In November 1943, planners at Eighth Headquarters drew up a plan to expand the bomber force to forty-three four-squadron bombardment groups and increase tactical mobility without interrupting operations or dislocating essential supply and maintenance services already in existence. These groups would be organized into twelve three-group and two two-group bombardment wings. The wings, in turn, were placed under the command of three air divisions, the First, Second, and Third Air Divisions. The First Division would possess twelve B-17 groups, the Second would have fourteen B-24 groups, and the Third would have a mix of nine B-17 and five B-24 groups. Each division would also be assigned roughly five fighter groups. Thus, combat integration would occur at the air division-level, although bomber operations remained highly stratified.[87] According to famed Eighth Air Force expert, Roger Freeman, when this organizational plan came to fruition on 10 October, 1944, it was one, "….further step to making the divisions and air force within an air force. The chief advantage was a simplified chain of command and easier planning of fighter support for bomber operations, each fighter wing supporting its respective Division."[88] Mr. Freeman also noted two other important aspects of the reorganization. First, though directly assigned to a Air Division, fighter groups in reality often supported bombers from other Divisions because VIII Fighter Command maintained centralized control of all fighter assets. Second, "although the new command structure administratively linked the bomber and fighter units closer together, groups remained very much a clan unto themselves. The worlds of the fighter pilot and the bomber crews were as different as the aircraft they flew, despite the fact that their operations were essentially complementary."[89] Thus, Eighth Air Force planners achieved a high degree of homogeneity and simplified logistics by integrating, but centrally controlling, a highly effective composite fighting force.

Coincidentally, the unglamorous task of providing pre-combat training for the Eighth's fighter

and bomber crews, as well as performing a host of other administrative duties, fell upon the Eighth Air Force Composite Command, headquartered at RAF Cheddington. Although labeled "composite," the Composite Command was as structurally segregated as other Eighth AF units--it just performed a hodgepodge of specialized functions that freed frontline units for purely combat operations.[90]

Like the bomber organizations, ETO fighter commands also worked toward homogeneity; however, the process was more evolutionary than planned. For example, initial plans for building up the Ninth Air Force in England called for it to receive fourteen P-51 groups, six P-47 groups, and a few night-fighter and reconnaissance units. However, when fully equipped, the Ninth had thirteen P-47 groups, three P-38 groups, two P-51 groups, and a few others.[91] The shift away from P-51s toward P-47s was the handiwork of General Elwood "Pete" Quesada, the Ninth's commander, who recognized the logic of such a move. Not only was it operationally smart--the Eighth AF needed P-51s for long-range escort and the Ninth AF needed the rugged P-47 for ground attack--but the move eased the considerable maintenance burden on lower command echelons.

While plans for the strategic air campaign against Adolph Hitler's Festung Europa were taking shape in the United Kingdom, the idea for another composite unit was taking shape in the steaming jungles of Burma. In 1942 British Brigadier General Orde Wingate developed and demonstrated a combat concept later known as Long-Range Penetration. The concept called for highly trained, lightly armed columns of infantry troops to conduct hit-and-run operations deep, behind Japanese lines. Operating for weeks at a time, Wingate's Raiders were resupplied entirely from the air.[92] The possibilities of similar large scale-adventures spurred the imaginations of Allied leaders. At the 1942 Quebec Conference, the Allies decided on a plan to conduct an airborne invasion of Burma based on Wingate's model. In general, the plan called for the air transport, supply, and evacuation of more than a division of Wingate's commandos.[93] Supplying the air support would be a composite unit known as "Air Commandos."

Uncharacteristically, in light of his earlier comments, General Hap Arnold became intrigued with the "air commando" idea and gave it his direct attention. He personally interviewed and chose its

commander, Lieutenant Colonel Philip G. Cochran, and ensured the new composite force received all the men and equipment Cochran asked for. Designed with one purpose in mind--supporting Wingate's ground forces--Arnold and Cochran tailored the Air Commandos to be flexible and self-sufficient. To prevent anyone from getting in the group's way. Arnold had Cochran report directly to him.[94]

Under Arnold's protective umbrella, Colonel Cochran set about building an air force the likes of which had never before been seen. Cochran let his imagination run wild and laid out a grandiose scheme. Independent air operations in remote Burma would require a wide array of air assets and Colonel Cochran requested everything from small liaison planes and helicopters to transports, fighters, and bombers. Placing it before General Arnold in late 1942, the colonel thought, "Boy, he's going to throw me out of the office." Instead, Arnold took the papers, initialed and slammed them down, and said, "All right, do it."[95] At that moment, the First Air Commando Group was officially formed.

Arriving in India late in 1943, the Air Commando's combat performance soon became legend. Aggressiveness, audacity, inventiveness, and teamwork became unit trademarks. For example, when bombers were unavailable to attack a Japanese troop column, C-47 crews flew over and hand dropped fragmentation bombs and mortar rounds from the airplanes' side doors.[96] The group racked up an impressive statistical record. Air Commando cargo planes and gliders delivered over 760,000 pounds of supplies to Wingate in March 1944. Their light planes also evacuated 1,500 casualties by the end of the first month in combat. That same month the group's single fighter squadron and twelve bombers destroyed fifty enemy aircraft and countless numbers of enemy troops, equipment, and supplies.[97] Most importantly, however, the airborne invasion of Burma, OPERATION BROADWAY, was a complete success. The assault broke the back of the Japanese Fifteenth Army in Burma and swung the pendulum permanently in favor of the Allies.

The First Air Commando Group's startling performance in Burma points out some of the greatest attributes of composite forces. Trained as a team, the Air Commandos demonstrated tremendous flexibility and cohesiveness under difficult combat conditions. Also, with all air assets at his fingertips,

Colonel Cochran's independent air force quickly responded to General Wingate's every need. In addition, unlike the Twenty-eighth Composite Group in Alaska, the Air Commandos had carefully selected their aircraft and tailored their unit to fit the assigned task. Finally, under Colonel Cochran's capable leadership and General Arnold's protective care, the First Air Commando Group was allowed to pursue its mission relentlessly. When the group was still in training, Arnold had told Colonel Cochran, "To hell with administration and paperwork; go out and fight!"[98] The First Air Commando Group did just that, proving for the first time the combat viability of a well-organized, properly tailored composite group.

However, the First Air Commando Group's performance also showed some organizational and doctrinal flaws. Because the group was not a standard unit, all supplies had to be special ordered. Normal units--a fighter group, for instance--worked from a common table of organization that detailed everything the unit would require, from shoe laces to aircraft engines. Conveniently then, once a normal homogeneous unit was in the pipeline, the system knew to send it certain things at regular intervals. Not so for the First Air Commando Group. According to Colonel Cochran, "When you said 'Air Commando Task Force' the [supply] system would spit back, 'don't know, cancel….tilt.'"[99] Without General Arnold's personal intervention in supply matters, the group's training schedule would have been hopelessly delayed. The greatest problem, however, developed because of the group's ability and insistence on operating independently from the theater air commander and his air campaign plan. As the group's history noted, "It was natural enough that other commanders, hungry for aircraft in this starved theater, and unaware of plans kept rigidly secret, would propose other uses for all this [air power]."[100] Admiral Mountbatten, British commander of the Southeast Asia Command in whose territory the group operated, was constantly meddling in Air Commando operations or attempting to siphon off their assets for his campaigns. It took a personal letter from General Arnold to finally set the situation in order. From then on the First Air Commando Group was to left to its own purposes. Referring to the situation, Colonel Cochran said. "We made some people mad, and we're sorry about that, but it couldn't be helped."[101] Unfortunately, the Air Commandos did more than make some people mad. The independent

way in which the group was employed violated the doctrinal principle of concentrating all theater air assets under one air commander. Although the group proved extremely effective, one must wonder what impact the Air Commandos might have made in the China-Burma-India Theater had their assets been massed with those already in existence. What is known however, is that although General Arnold's experiment was successful, the First Air Commando Group withdrew from combat in the summer of 1944, never again to see action. Although two other air commando groups later formed using the First as a model, they never achieved the success of General Arnold's First Air Commando Group.

These two additional Air Commando groups, the Second and the Third, were formed in the summer of 1944 along lines very similar to their sibling, the First. However, they lacked two important attributes of their predecessor. First, although both were equipped and trained for independent airborne assault operations, the war's rapid pace made it increasingly difficult to find locations that required their unique capabilities. The Allies had already invaded France; Burma was in hand; and island assaults were too tough for a small force to handle. Second, General Arnold, having achieved success with the First Air Commando experiment, no longer had the interest or time to invest in the administration of a couple of combat groups. Nonetheless, the war was far from over and the US couldn't afford to hold precious air assets in reserve. In the fall of 1944, the Air Commandos were pressed into action.

The Second Air Commando Group was committed to the Philippine Invasion and immediately placed under Fifth Air Force control. Unlike Cochran's operations in Burma, the Philippine Campaign saw the group's assets employed like any other air unit in theater, not autonomously but as a part of a bigger team. Although the Second continued to function as a unit, its liaison and cargo aircraft were regularly stripped away and given to other outfits. In the same vein, the group's fighters and bombers rarely worked as an independent entity as intended but were generally assigned to augment larger forces. However, few of the unit's personnel were more misused or underemployed than the glider crews--not one flew a single mission. Left idle because their talents were not needed, glider pilots augmented the group's administrative and supply staff.[102] All in all, the highly trained Second Air Commando Group found little special recognition or glory in the Philippine jungles.

Near the end of the Philippine Campaign the Third Air Commando Group too entered combat; however, based on the Second's experience, it shed its glider detachment while still training in the US. Like the Second, the Third fought well but without the elan or acclaim of Cochran's men. Perhaps lacking a sense of special purpose, both groups exhibited a breakdown in unit cohesion not seen in Burma. This was especially noticeable between the groups' various sections. For instance, transport and bomber pilots believed the fighter sections incurred special favor and they demeaningly referred to the fighter pilots as, "fair-haired boys."[103] While this envy never developed into a major problem, the situation highlights one of the leadership challenges of composite units. When one element misunderstands another's tasks or responsibilities, animosity or resentment can result. However, the greatest lesson we can learn from the Second and Third Air Commando Groups is the inefficiency of sending a highly tailored unit into a generic combat situation. In plain terms, it's like paying Cadillac prices for a Chevy.

At the same time the Air Commandos were preparing for action, two of the war's most unique composite units were also taking shape in the Central Pacific. These units, the 5230th and the 5276th Composite Rescue Groups, were organized to perform air-sea rescue operations in the vast reaches of the Pacific Ocean. Each group operated a wide variety of aircraft--PBY flying boats, L-5s. C-47s, B-25s, and B-17s--chosen specifically to provide complementary performance capabilities. For example, the B-17s, known as "Dumbos", were fitted with wooden life rafts which could be dropped to survivors in the water; L-5s picked up downed aircrews from difficult-to-reach, makeshift 200-foot jungle strips.[104] However, what is even more amazing is the fact that each group had its own navy--seventy ships in all.[105] During B-29 raids against the Japanese mainland, air-sea rescue teams usually consisted of a submarine with one or two Dumbos orbiting overhead. Teams were positioned so that any point along the bombers' recovery route could be reached by a rescue plane in at least thirty minutes or by naval vessel in no more than four hours. During fighter missions the submarines worked as close as five miles to the Japanese coast. Working as a team, the groups' air and sea assets combined to rescue over 3,500 aviators and sailors by the war's end, including 600 B-29 crewmembers.[106] As the 5276th's unit history noted in January 1945,

each American rescued from Pacific improved morale, intensified fighting spirit, and "dedicated anew [another life] to the continuance of our war against Nippon and its menace to the pillars of democracy."[107] Impact, the Air Corps' official pictorial magazine, rightly concluded that statistics could never tell the life or death story behind every rescue, nor could they truly measure the influence such composite operations might have on the war or future events. Perhaps no one would have agreed more with that statement than Lieutenant (j.g.) George Bush, a young Navy pilot rescued by an air-sea rescue team near the Japanese-held Bonin Islands on 2 September 1944.[108]

On 7 March 1945, the 5276th was redesignated the Fifth Emergency Rescue Group and later that month also absorbed the 5230th. Despite the name change, the group continued composite rescue operations throughout the war and into the Korean conflict. One of its last combat duties in WW II was flying escort for the aircraft carrying the official Japanese surrender delegation to Tokyo Bay.[109] The Fifth Emergency Rescue Group continued operations until sometime in the mid-50s before it was phased out of service. However, its enviable combat record provides one more glimpse into the history of composite unit operations.

As already mentioned, another famous composite group destined for the Pacific action was formed at Wendover Field, Utah, on 17 December 1944--the 509th Composite Group. Earlier, on 1 September, Colonel Paul Tibbets, the group's commander, received orders to organize, equip, and train a self-sufficient, highly secret organization capable of operations in Europe or the Pacific.[110] Given carte blanche in selecting both men and equipment, Tibbets also received top priority on anything he needed by merely mentioning the code-word, "SILVERPLATE." The requirements for mobility, secrecy, and independence dictated a composite force. Colonel Tibbets selected the 393d Bombardment Squadron. equipped with B-29s, for the tactical half of the group; the 320th Troop Carrier Squadron, flying C-54s, made up the logistics and transport part of the team. Operating from Roswell Field, New Mexico, near the atomic laboratories at Los Alamos, the 320th Troop Carrier Squadron regularly shuttled scientists, senior officers, nuclear components, and practice atomic bombs in the utmost secrecy across the United States. When time came to deploy overseas, the 509th left its troop carrier squadron behind. From June

through July 1945, the 320th averaged one seventy-two-hour round-trip supply mission to Tinian every third day. After Japan surrendered, the squadron ferried scientists and test equipment to Hiroshima and Nagasaki to study the A-Bombs' radiation and blast effects.[111] Interestingly, while history is replete with the heroics of the 393d Bombardment Squadron, little else is known of the 320th's contributions to the group's wartime effort. Obviously, the 509th could not have carried out its highly secretive atomic mission without the 320th's direct support. However, the transport pilots were not included in any of the 509th's group photographs; they are almost never mentioned in conventional history books; and even Brigadier General Paul Tibbets only gives them scant mention in any of his writings. Perhaps their role was shrouded in wartime secrecy, but their fate seems to indicate they were little more than third-string players in a world-class game.

After the war, the entire 509th Composite Group relocated to Roswell Field and opened the last chapter of its history. Assigned to Strategic Air Command on 21 March 1946, the group was America's only nuclear-capable air asset. In the spring of 1946, the 509th was detailed to OPERATION CROSSROADS, highly classified military and civilian experiments to test the atomic bomb's effect on naval vessels and military installations.[112] The tests were conducted in the Marshall Islands, with Kwajalein as the base of operations and Bikini Atoll the target. The 393d Bombardment Squadron flew over 100 missions during the tests practicing bomb drops, flying observation and photography missions, and, on 1 July 1946, actually dropping an atomic bomb.[113] The 320th Troop Carrier Squadron was also deeply involved in the tests. Several C-54s were loaded with VIPs and scientists and flown just 200 feet over ground-zero not more than twenty minutes after the atomic blast at Bikini.[114] In July the squadron flew 37 missions to Kwajalein carrying 828 passengers, 47 tons of cargo, and all the film of the tests.[115]

On 22 August, the 509th returned to Roswell Field to face significant organizational changes. The 320th Troop Carrier Squadron was reassigned, and the 509th picked up two additional bomb squadrons becoming the 509th Bombardment Group (Very Heavy). On 17 November 1947, the group

was redesignated the 509th Bombardment Wing and gained a three-squadron group of P-5l Mustangs in addition to its own B-29s.[116] Interestingly enough, the 509th retired its composite designation almost at the same time it took on an entirely new composite structure, a bizarre end to a unit that proved the ability of composite units to execute mobile, independent, highly secret operations.[117]

Ironically, the culmination of the 509th Composite Group's mission at Nagasaki sounded the death knell for the last wartime composite unit. On 21 June 1945, the 477th Composite Group was formed by combining the 477th Bombardment Group (Medium) with the Ninety-ninth Fighter Squadron at Godman Field, Kentucky. The 477th Bombardment Group, equipped with B-25s, had been struggling unsuccessfully for months to achieve combat-ready status. Hampered by manpower shortages and numerous moves from base to base, the group appeared to be stalled. Senior officials believed combining the struggling bomber group with the combat veterans of the Ninety-ninth, recently returned from the ETO, would speed their readiness for action in the Pacific. At least that was the Air Corps' official story. There is sufficient cause to believe the true reason for forming a composite unit was to segregate the 477th and the Ninety-ninth--both were manned by black airmen.[118]

Even though the Air Corps opened limited flying training to blacks, the service remained a tightly segregated institution and racial discrimination was common. For example, before the composite group formed at Godman Field, white officers refused to allow black officers to use the officers' club, a policy in direct violation of Army Regulation 210-10. This sort of treatment, condoned by high ranking officials including General Arnold, precipitated a great deal of racial conflict that impaired the 477th Bombardment Group's performance.[119] When large numbers of black officers protested, the base commander branded them as malcontents and shipped them off to another base, further disrupting training schedules. When the combat-proven Ninety-ninth Squadron returned from Europe expecting immediate orders for the Pacific, they were rebuffed. General George Kenney, with General Arnold's concurrence, blocked the move fearing racial tensions would harm overall combat efficiency of all units involved.[120] Not welcome anywhere, the simple solution was to consolidate the stray fighter squadron with the faltering bomb group at one base.

In reality, the combination proved fairly effective. Under black leadership for the first time, the 477th Composite Group's morale and performance improved immeasurably. The union also solved many of the group's manpower problems and boosted sortie rates 300%.[121] Mechanics learned to fix engines on both the P-47 and B-25, a task made easier since both types used radial engines. In July 1945, Headquarters First Air Force personnel inspected the 477th and proclaimed its maintenance "excellent," morale "very high," day-to-day operations efficient, and the group headquarters "ready to function in combat"--a dramatic turnaround from just a few months prior.[122] Finally, many members of the group also obviously took a measure of pride in their new unit's special structure. In July 1945, group historian Lieutenant George Greenlee noted, "It is important that we carefully document every detail of the unique situation we now find ourselves in so that others may learn from our experience."[123] However, the war would end before the 477th could test their experiment in combat.

After the war the 477th lived on, but moved to Lockbourne AAF, Ohio, and reduced to one fighter and one bomber squadron as veterans left the service. Its main tasks included maintaining routine combat proficiency, conducting aerial demonstrations, and recruiting. Despite the advancing age and variety of their aircraft--P-47s, B-25s, AT-6 trainers, and C-47s--there is little evidence the group's composite structure ever hurt its performance. On 6 November 1946, the entire group deployed without incident to Blythe AAF, California, to participate in amphibious warfare exercises. Throughout the fifteen-day deployment the group's aircraft met an eighty-one percent readiness rate despite a severe lack of spare parts--better than wartime requirements.[124] Despite such achievements, the group's unique composite organization failed to make any lasting impressions on its two most famous members, future Generals Benjamin O. Davis, Jr., and Daniel "Chappie" James, Jr. In their memoirs or biographies, neither gives more than passing comment to the 477th Composite Group's unique structure.[125] Likewise, Tactical Air Command, the 477th's parent command after the war, seldom mentioned the group in its unit histories except to note it existed. On 1 July 1947, the 477th Composite Group was deactivated. The Ninety-ninth Fighter Squadron absorbed most of the remaining B-25 pilots and became the core unit for the all-black 322d Fighter Group at Lockbourne AAF. The 477th's legacy is simple. Faced with

integration or creating a composite group, the Army Air Corps chose the latter. That alone indicates the Air Corps' doctrinal taboos against composite units were not strong enough to overcome other institutional predilections, especially racial segregation.

The 477th Composite Group's drawdown closed the lid on officially recognized composite groups for almost a decade.[126] In the interim, the Pentagon's decision to organize the Air Force into strategic, tactical, and air defense commands helped further to segregate units along functional lines, although SAC owned fighters and TAC owned bombers throughout the '50s. In Korea, the Air Force fought another war along functional lines and did rather nicely without composite tactical units.[127] During the 1950s, technology continued to produce ever greater disparities in aircraft performance. No fighter even came close to matching the intercontinental range of the B-36. Doctrine also continued to make a strong case for homogenous units. SAC's nuclear-armed strategic bombers were America's vanguard and, reminiscent of the Army Air Corps' infatuation with the B-17 in the late '30s, few airmen saw the need for anything else. However, this thinking was flawed and gave rise to another kind of composite unit, Tactical Air Command's Composite Air Strike Force (CASF).

NOTES CHAPTER V

[60]The LB-30 was the transport version of the famed Consolidated B-24 Liberator.

[61]Maurer Maurer, Combat Squadrons of the Air Force, 127.

[62]History of the 28th Composite Group, Elmendorf Field, Alaska, June 1940-May 1945, 10. See also, History of the Eleventh Air Force, 1941-1945.

[63]John Cloe and Michael Monaghan, Top Cover for America (Missoula, Montana: Pictorial Histories Publishing Company. 1985), 53.

[64]"Air Corps Defense Estimates for Fiscal Year 1941," General Arnold's testimony before Congress. 1940.

[65]Manuscript "A WPD-l." Headquarters Army Air Corps, Air War Planning Department, Washington, D.C., August 1941. 3.

[66]Letter, Colonel Rush B. Lincoln to Commanding General, GHQ, subject: "Enlisted Manning for the Air Corps," 12 October 1938. 2.

[67]AWPD-1, 7.

[68]"The Air Force in Theaters of Operations: Organization and Functions." Headquarters Army Air Forces, The War Department, Washington, D.C., May 1943, 26.

[69]AAF Evaluation Board Report, Mediterranean Theater of Operations, Operation Corkscrew; The Capture of the Island of Pantelleria, 113.

[70]Report, "Equipment, Tactics, and Technique Necessary for Continuous Offensive Air Operations," Air Corps Tactica1 School, Department of Tactics and Strategy, 1936, 3

[71]Report, "Specifications for Very Heavy Bomber Airdromes," HQ United States Strategic Air Forces in Europe, 15 March 1945, Annex I.

[72]Report, "Combat Performance Report on P-47N Aircraft," April 1944, 2.

[73]Manuscript, "Bombardment Aviation," Ft Leavenworth, Kansas: The Army Extension Program, Special Text #199, 1938, 4.

[74]Benjamin O. Foulois, "The Present Status of Military Aviation and Its Trend of Development," lecture,

Army War College, Washington, D.C., 12 September 1933, 7-8.

[75]Remember, a pre-1951 wing had 2 or more groups and 150+ aircraft.

[76]H.H. Arnold and Ira C. Eaker, "Winged Warfare," Flying and Popular Aviation, Vol. XXIX, No.3., September 1941, 244.

[77]Foulois, "The Present Status of Military Aviation and Its Trend of Development," 27.

[78]AWPD-l, 2.

[79]History of Ascension Island, Dec 41-Dec 44, 30.

[80]History of the 1st Composite Squadron, December 1942, 1; History of Ascension Island, Dec 41-Dec 44, 30.

[81]History of the 1st Composite Squadron, December 1942, 1.

[82]History of the 3rd Composite Squadron, August 1944, 2.

[83]"3rd Composite Honored," Tail Skid, Lawson Field, Ga., Vol. 4, No.1, 1 January 1944, 6.

[84]Memorandum, Major Pratt, Operations and Plans Div, to General Fechet, subject: "Location of Additional Air Corps Troops at Fort Bragg," 17 November 1927.

[85]History of the 342 Composite Group, Sep 42-Mar 44.

[86]Roger A. Freeman, The Mighty Eighth (New York: Orion Books, 1989), 293.

[87]Plan, "Proposed Plans for the Organization of the Eighth Air Force." Headquarters Eighth Air Force, High Wycombe, United Kingdom, 13 March 1944.

[88]Freeman, The Mighty Eighth, 190.

[89]Ibid.

[90]History of the VIII Air Force Composite Command, 15 Feb 44 - 30 Apr -44, 4-5

[91]Manuscript, "The Ninth Air Force and Its Principal Commands in the European Theater of Operations." Vol 1., Headquarters Ninth Air Force, No Date, Appendix A.

[92]General Wingate's troops were commonly referred to in the American press as Wingate's Raiders. Elsewhere, primarily in Britain, they were known as Chindits. A Chindit is a statue of a fiercly snarling mythological lion that commonly guards the entrances to shrines and tombs in Thailand and elsewhere in Southeast Asia.

[93]Col Philip G, Cochran, Oral History Interview, Office of Air Force History, 20-21 Oct 1975 and 11 Nov 75, 150-151,

[94]Ibid., 202,

[95]Ibid., 162-163.

[96]History of 1st Air Commando Group, Sep 1943-Aug 1945, 12.

[97]Ibid.

[98]Cochran, 170.

[99]Ibid., 171.

[100]1st Air Commando Unit History, 1943-1945, 23

[101]Ibid.. 17.

[l02]History of 2nd Air Commando Group, Mar 1944-Sep 1945, 6.

[103]History of 3rd Air Commando Group, June 1944-December 1944, 10.

[104]History of 5230 Composite Rescue Group, 20 Oct 44 -31 Dec 44, 2.

[105]Historica1 Report of 5th Emergency Rescue Group, 1 March 1945-31 March 1945. 2.

[106]"A Tale of Dumbos, Super Dumbos and Subs." Impact, September - October 1945,76.

[107]History of the 5276 Rescue Composite Group, 1 January 1945 - 31 January 1945, 8.

[108]Joe Hyams, Flight of the Avenger: George Bush at War (New York: Harcourt, Brace, Jovanovich, Publishers, 1991), 114-119.

[109]History of the 3nd Air Commando Group, Mar 1944-Sep 1945, 4.

[110]Ramsey G. Winston, "The Atomic Bomb," After the Battle. No. 41,1983. 49.

[111]History 3Transport Unit, 21 January 1946-11 May 1946, 1.

[ll2]Task Force 1.52 Historical Report, U.S. Department of the Air Force, Headquarters 509th Composite Group, 1

[113]Task Force 1.52. 6-7.

[114]Personal Interview with Col Fitzhugh Fulton, Maxwell AFB, AI., 12 June 1991.

[115]History of the 320th Troop Carrier Squadron, 1 July - 31 July 1946, Section II.

[116]US Department of the Air Force, Headquarters 509th Bombardment Group, Combined History of the 509th Bombardment Group (VH) and Roswell Army Air Field, 4 December-31 December 1947, Roswell AAFld, N.M., December 1947, 2

[117]In 1982, the 509th Bomb Wing retained its composite force structure, flying FB-111s and KC-135s from Pease AFB, N.H. That year the 509th won five awards at SAC's annual bomb competition: top bombing and navigation score for bombers and tankers; best bomber unit; best tanker unit; best FB-111 unit in low-level bombing; and outstanding tanker unit in celestial navigation.

[118]0ral History Interview with Col Herbert Carter, USAF (Ret), former pilot and maintenance officer with the 99th Pursuit Squadron in Europe and later with the 477th Composite Group, Tuskegee, Alabama, 31 March 1992.

[119]Alan M. Osur, Blacks in the Army Air Forces During World War II (New York: Arno Press, 1980), 52 -59.

[120]Ibid., 40.

[121]History of the 477th Composite Group, January 1944-September 1945, 10.

[122]Report. "Inspection of 477th Composite Group and 387th Air Service Group as of 21 July 1945," Headquarters First Air Force Liaison Party, Fort Knox, Ky., 21 July 1945, 1-2.

[123]History of the 477th Composite Group, 16 April 1945-15 July 1945), 1.

[124]History of the 477th Composite Group, 15 October-31 December 1946, 9.

[125]Davis' autobiography is free of any comments about the 477th, especially surprising since he was its wartime commander. In J. Alfred Phelp's biography, Chappie, Gen James comments on little more than simply flying B-25s. Both men, for good reason, spend considerable time discussing racial problems.

[126]While secondary sources discuss a number of short-lived composite units in the immediate aftermath of WWII, the author could find no more than passing reference to them in official AF records. One was the 86th Composite Group flying from Landstuhl AAf, now Ramstein Air Base, Germany. Others mentioned were generally stateside Air National Guard units.

Most probably, these units were composites because of the large numbers of surplus aircraft returning from overseas that fell into their care. Many units were tasked with keeping these aircraft in flyable condition until final disposal. Whatever the reason, groups like the 86th did not bear a composite designation for more than about six months and it is doubtful they were ever intended to perform combat missions.

[127]0fficially designated composite units do not appear in Korean War histories, but the author would be foolish to suggest they did not exist. Facing dire straits during the conflict, air planners undoubtedly fed men, units, and planes into combat as they became available. Under such demanding wartime contingencies, composite units were undoubtedly formed ad hoc and disbanded with hardly an afterthought. Officially, however, homogeneous units remained the order of the day.

CHAPTER VI

COLD W AR DEVELOPMENTS

In 1950 America's threat of massive nuclear retaliation failed to prevent the communist incursion into South Korea, revealing the flawed thinking inherent in such an all-or-nothing strategic nuclear doctrine. The Korean conflict had exposed a seam in America's defense planning, prompting fears the Soviet Union, unable to match our nuclear muscle, would attempt to spread its influence subtly and test America's worldwide resolve with piecemeal aggression. Sponsoring indigenous regional communist activity without introducing Soviet troops, according to Soviet thinking, would surely cause the United States to stop short of a nuclear attack on the Soviet homeland. Thus was born the peripheral or limited war theory of Soviet world domination--a theory that looked very plausible to Americans in the late 1950s.[128]

Long saddled with military doctrine espousing massive retaliation as its one and only trump card, America quickly found herself ill-prepared to handle a limited conventional war contingency. For years the lion's share of the defense budget went to strategic nuclear forces while tactical air forces and Army ground units atrophied. In 1959 General O.P. Weyland, Commander of TAC. warned of the dangers of the situation, saying:

> Whereas total war constitutes the greatest danger to our country, it
>
> > has become abundantly clear that any armed conflict in the near foreseeable future will most probably be of the limited variety. SAC and ADC are dedicated as major war deterrents, and their postures, armaments and concepts of operations are limited to total war situations. SAC forces are not suited for, and cannot cope with the essential tactical air aspects of limited wars. Although they may be considered as a backup force, they should not become seriously involved in local war since that would jeopardize their effect and posture as a deterrent to major war. Consequently, tactical air power must be the primary deterrent and operating air force for limited war.[129]

According to General John D. Stevenson, TAC's Director of Plans and one of the fathers of the CASF concept, limited war called for "a small force that could be moved to any part of the world on a very rapid notice, so that a small amount of power at a very early date might keep the conflict from enlarging [to the point] where we would not be able to cope with it."[130] Fortunately, technology handed TAC just such a

force.

In the early '50s three technology breakthroughs came together to give TAC worldwide reach and striking power. In 1950 scientists finally succeeded in reducing the size and weight of nuclear devices to permit their carriage on fighter-sized aircraft. Then, early in 1952, TAC's Twentieth Fighter Bomber Wing deployed overseas with specially modified F-84Gs, the first operational fighters able to carry tactical nuclear weapons. That summer sixty-eight F-84s flew 11,000 miles from Turner AFB, Georgia, to Yokota AB, Japan, using air refueling to cross large parts of the Pacific.[131] These innovations guaranteed tactical aircraft the ability to reach any part of the world quickly, in small numbers, but with tremendous firepower. When matched with recently increased airlift ability, TAC had a force that could take on the limited war challenge.[132]

In 1956 TAC finished its CASF test program and began building a balanced tactical air task force. Basically, this was a plan to rapidly assemble and deploy a tailored force package comprising tactical fighter, bomber, reconnaissance, and support aircraft together with the personnel and equipment needed to sustain them in the field for periods up to thirty days. According to General Weyland, the plan "….called for suitable aircraft and equipment, planning, training, in-flight refueling, fly-away kits[133], know-how, and dedication to the mission and its importance."[134] CASFs were drawn from predesignated, highly skilled units and quickly molded into a fully capable tactical force. In the case of a Middle East crisis for example, plans called for the first F-l 00 squadron to arrive in theater seventeen hours after notification and all other aircraft to be in place within 48 hours.[135] The force got its first real test in 1958.

On Monday, 14 July 1958, President Camille Chamoun of Lebanon requested American military assistance within forty-eight hours to put down an externally sponsored armed rebellion that threatened to topple his government. The request kicked off the largest military deployment since the Korean War. Unfortunately, the CASF's performance was less than spectacular. Of the first twelve airplanes to launch, one crashed en route, seven aborted into alternate fields along the flight path, and only four made it all the way to Adana, Turkey. Five full days passed before the entire CASF reached Adana. Even the CASF's command element failed to arrive until three days after receiving the alert order.[136]

Serious problems plagued the CASF's inaugural deployment. First of all, in its rush to get aircraft into theater TAC deployed several unprepared units. None of these units brought their full complement of equipment, and one hastily assembled fly-away kit was discovered to contain "nothing more than 5,000 pounds of random items."[137] The swift deployment also led to an air power inversion at the destination base. Unarmed transport planes arrived first, followed much later by the fighting forces. By 17 July, seventy percent of the fighters and bombers had landed, but fifty percent of their support equipment was still en route. None of the reconnaissance planes arrived, although photo intelligence was the most urgently needed information.[138] Also by the 17th, every available foot of space at Adana was occupied. Over 147 airplanes, including fifty transports, flooded the ramp causing traffic congestion and delays and providing a lucrative target for any potential enemy. Finally, the tactical air forces found themselves improperly trained and equipped to handle the situation in Lebanon. Few of the F-100 pilots had fired their guns at ground targets; none had launched rockets or dropped conventional bombs. Even more shocking, the B-57 bomber crews could not accurately deliver conventional weapons. Not surprisingly, however, all CASF crew were qualified to deliver nuclear weapons.[139] Though officially deemed a success, the facts behind the CASF's deployment to Lebanon tell a slightly different story.

The CASF concept would get other chances to prove itself in the months and years ahead. Just a few months later a CASF deployed to Taiwan in response to growing tensions with the mainland. Later CASFs responded to the Cuban missile crisis and the Gulf of Tonkin incident. While their deployment performance improved with practice, a dilemma remained in the overall CASF theory. Colonel Albert Sights, writing in the Air University Review, identified the problems, saying:

> Crises--if they turned into wars--would be conventional, at least at the outset. However, the re-emphasis on conventional capabilities simply deepened the dilemma of how to meet the divergent demands for these two types of conflict: the one requiring large numbers of airplanes, high sortie rates, enormous stockpiles, and a continuing flow of replacements to sustain a long-drawn-out battle of attrition; the other requiring almost the antithesis in every respect.[140]

In short, the CASF's inherent dilemma essentially boiled down to a question of combat power versus speed. Taking time to assemble an adequate force often took too much time, placing the CASF in theater

beyond the point where it could control the situation. At the other extreme, rushing a CASF into a situation for the sake of speed alone, without adequate numbers of aircraft or supplies, would strip it of combat power and place it in a very tenuous position with two possible outcomes. First, the CASF might be soundly defeated, allowing the situation to rage out of control and blacken America's reputation throughout the world. Second, a weak CASF could find itself unable to deal adequately with the rapidly escalating situation, necessitating a further infusion of American forces--a classic "tar baby" case. Neither alternative appeared attractive, and the power-versus-speed question proved a difficult one to answer with proponents lining up on both sides of the issue. After Lebanon, for example, U.S. Secretary of Defense Neil H. McElroy trumpeted the CASF's virtues, claiming its intervention had calmed the situation and prevented escalation. In 1959 he told the U.S. Senate, "The speed with which you respond is really as important as the force with which you respond,"[141] On the other hand, General Maxwell Taylor, Chairman of the Joint Chiefs of Staff, gave the CASF less than perfect marks. He claimed advanced warning, limited force requirement, and lack of combat operations all but assured the CASF's success in Lebanon and rendered any lessons learned from the experience of dubious value.[142] Still others believed the requirement to employ a conventionally armed CASF unduly limited its usefulness. For example, Lieutenant General Charles S. Irvine, USAF deputy chief of staff for materiel, told the Senate, "….we can fight an iron bomb war if that is what the President says he wants....We can only say if you want to destroy targets efficiently, we can do it better with a nuclear bomb."[143] Unfortunately, the CASF died before any of these issues were resolved.

No single person or agency killed the CASF concept; the tidal wave of air power heading for Viet Nam in 1964 simply swept the program away. As the war in Southeast Asia (SEA) heated up and consumed more air assets, America could not afford to withhold badly needed air power. CASF units, being well equipped and trained for quick combat deployment, were increasingly fed piecemeal into the Viet Nam War. For instance, in 1964 the 401st Tactical Fighter Wing, a CASF- earmarked unit, deployed three squadrons to Southeast Asia

consecutively. Once there, the squadrons were promptly split into three or four detachments and sent to widely dispersed bases causing manpower, supply, and communications problems and destroying the squadron's integrity and combat potential. Squadron commanders complained and theater commanders implemented corrective action; however, in the larger scheme of Pacific events these actions proved inconsequential.[144] The CASF was simply overcome by events and died of neglect.

NOTES CHAPTER VI

[128]Henry P. Viccellio, "Composite Air Strike Force," Air University Quarterly Review, Vol. XI, No, 1, Winter 1956-57, 27,

[129]0.P. Weyland, "The Composite Air Strike Force," Air War College Presentation, Maxwell AFB, AI., 18 Feb 1959, 11-12.

[130]John D. Stevenson, Oral History Interview, Maxwell AFB, AI.. September 1%6, 24.

[131] Albert P. Sights. Jr., "Lessons of Lebanon: A Study in Air Strategy," Air University Review. Vol. XVI, No.5, July-August 1965, 3O.

[132]Surprisingly, much information surrounding the CASF's origins remains classified. The author endeavored to have some of the more revealing documents declassified; regrettably time constrains prohibited including them in this work. Those with the proper security clearance interested in a detailed explanation of the CASF's beginnings should see History of the Tactical Air Command, January - June 1964, 54-70.

[133]A Fly-away kit is an air-transportable, prepackaged set of spare parts calculated to supply a given number of aircraft for a specific period of time. These are known today as WRSK kits.

[134]Weyland, The Composite Air Strike Force, 14.

[135]Sights, "Lessons of Lebanon: A Study in Air Strategy," 31.

[136]Ibid., 39.

[137]Ibid., 41.

[138]Ibid., 41.

[139]Ibid., 42.

[140]Ibid., 43.

[141]Senate, Missile and Space Activities: Joint Hearings before the Preparedness Investigating Subcommittee on Armed Services and the Committee on Aeronautical and Space Sciences, 86th Cong., lst sess., 1959, 34-35, 42-43.

[142]House, Department of Defense Appropriations for 1960: Hearings before a Subcommittee of the Committee on Appropriations, 86th Cong., 1st Sess., 1959, pt.1: 97-101, 297-99, 317-18; Senate, Missile and Space Activities, 100-1.

[143]House, DOD Appropriations for 1960. pt. 5: 658.

[144]History of Ninth Air Force (Tactical Air Command), 1 July - 31 December 1964, Volume 1, 93-100.

CHAPTER VII

THE VIET NAM YEARS

By the time of the CASF's demise, another composite unit, the First Air Commando Group, had already been formed to conduct and teach counterinsurgency operations. The group, deriving its name from Colonel Cochran's WWII Air Commandos, found its basis in an operational concept known as "Jungle Jim," formulated at Hurlburt Field, Florida, in 1959.[145] The concept called for a squadron equipped with sixteen C-47s, eight B-26s, and eight T-28s capable of operating under austere conditions from unimproved strips. The new Air Commando's primary mission would be instructing allied airmen to use the group's aircraft in counterinsurgency operations. The group would also maintain in storage an equal number of like aircraft for immediate delivery to friendly nations.[146] The First Air Commando Group was officially activated at Hurlburt Field on 14 April 1961 with a goal of becoming fully operational on 8 September 1961.[147]

The new Air Commandos were an all-volunteer, highly motivated, elite group. Members trained in all manner of counterinsurgency techniques, from day or night close air support to psychological operations. They also received extensive survival and hand-to-hand combat training. The first contingent deployed to Viet Nam under the codename OPERATION FARMGATE in November 1961 to begin training South Vietnamese pilots.

During 1962 the First Air Commando Group trained thirty-seven South Vietnamese pilots, flew 4,040 sorties in support of the South Vietnamese government, expended 1,212 various types of ordnance, and flew 1,037 sorties escorting trains, convoys, and aircraft. Furthermore, the group claimed to have inflicted 3,381 enemy casualties and destroyed or damaged 4,151 structures and 405 boats. As a result, Viet Cong attacks on convoys, forts, and aircraft decreased by more than fifty percent.[148]

Despite these impressive but suspect figures, the First Air Commando Group's 1962 history yields little information about its composite operations. The fact that no Vietnamese pilots were trained in either the B-26 or the C-47 suggests these aircraft were being used for purposes other than the group's

primary training mission. Eventually these aircraft became costly to maintain and too outmoded to survive the war's heightened threat environment. Later the Air Commandos abandoned the original "Jungle Jim" training concept and formed composite special operations wings to conduct search-and-rescue operations for downed airmen and other highly specialized tasks. The First Air Commando's legacy is carried on today by the First Special Operations Wing, Hurlburt Field, Florida.

Highlighting the inadequacy of the Air Commando's WWII-era equipment, the air war in Viet Nam increasingly required sophisticated aircraft and tactics to get the job done and survive. Soviet-made, high technology antiaircraft systems like the radar-guided 57mm gun and the SA-2 surface-to-air missile (SAM) transformed the North Vietnamese air defense system into one of the world's toughest antiaircraft networks. Specialized aircraft like the F-105 and F-4 Wild Weasels were designed to attack and destroy the enemy guns and SAMs to improve the survivability of friendly strike aircraft. However, beating Soviet SAMs systems required highly coordinated tactics between attack aircraft and their specialized support aircraft. At least two units successfully combined these assets into composite wings in Viet Nam. However, because they did not wear the "composite" brand, their exploits have been overlooked in the annals of composite wing operations. Such confusing terminology has tripped up even professional historians causing one to declare,

> Despite the successful use of composite forces in World War II and in the crises in Lebanon and Taiwan, they do not seem to have been used during the war in Southeast Asia. Although different kinds of aircraft were sometimes located at bases and learned to work well together, they were not under the administration of any one wing.[149]

If nothing else, the First Air Commandos disprove this assertion, but there were other composite units as well.

Perhaps one of the most unlikely candidates for composite status was the 432d Tactical Reconnaissance Wing (TRW) stationed at Udorn Royal Thai Air Force Base, Thailand. Initially assigned to Southeast Asia in 1966 to conduct day and night pre- and post-strike reconnaissance, electronic countermeasure (ECM) and electronic intelligence (ELINT) missions over North Viet Nam, in 1967 the wing flew RF-4C Phantom, RF-l01 Voodoo, and EB-66 Intruder aircraft. It had fourteen assigned and

thirty-seven tenant units and was responsible for maintaining, supplying, and servicing thirteen different aircraft weapons systems including F-102s, F-l04s, A-1Es, T-28s, HC-130Ps, WC-130Es, C-130Es, C-47Ds, RC-47Ds, VC-54Gs, HH-3Es, CH-3Cs, and HH-43Bs.[150] As the wing historian noted, "In performing these many and varied missions, immense support efforts, both in size and scope and men and material were required and expended….Despite the many missions and the problems associated with them, the [432d] compiled an enviable combat record and is daily fulfilling its mission of prosecuting the air war over North Viet Nam."[151] Indeed, the 432d was flying some of the most dangerous and important of the missions of the war. On 18 January 1967 it flew the first fighter-escorted mission over North Viet Nam; on 28 February 1967 it flew the first night reconnaissance mission over Haiphong Harbor; and on 27 April 1967, an EB-66C intercepted one of the first SAM sites outside of North Viet Nam. During this period the Wing lost twelve aircraft and eighteen crewmembers. Despite the tough going, the wing's overall maintenance effectiveness was reported as "outstanding," with aircraft utilization rates exceeding 125 percent and aircraft not-operationally-ready-for-maintenance (NORM) rates below the Air Force's twenty-four percent standard.[152] Despite these challenges and achievements, even greater challenges lay ahead for the 432d.

By the first quarter of 1969, the 432d's mission changed slightly and it received a facelift to match. Now with an overall mission to conduct tactical reconnaissance and strike operations in support of the United States objective in Southeast Asia, the Wing traded its RF-101 Voodoos for two entire RF-4C squadrons and picked up two F-4D squadrons for strike, escort, and attack, including the soon-to-be-famous 555th Tactical Fighter Squadron, aka the Triple-Nickel. It also added a C-130E airborne command and control squadron. "The integration of these units," noted the wing's official history, "was accomplished in an outstanding manner…."[153] Although the wing still experienced some problems, its operationally ready (OR) rates for all assigned aircraft exceeded the seventy-one percent Air Force standard by ten percentage points and non-operationally ready for supply (NORS) rates well undercut the standard of five percent or less. Unfortunately, a decrease in the supply system's support to the base began to appear, primarily "….due to an increase in aircraft and missions, aging of aircraft requiring more

maintenance, and multiple requisitioning, resulting from denials of funded supplies from the PACAF Asset Redistribution Centers."[154] This decline is not surprising considering the wing supported eight attached flying organizations operating sixteen different aircraft types, including many near-obsolete types like the AC-47 and EC-121.155 At the same time, the wing picked up a number of new tasks and ad hoc missions including a new F-4 forward air control (FAC) program, experimental integration with AC-47 and AC-130 gunships, and increased close air support (CAS) to friendly forces engaged in heightened action in Laos.[156] Finally, maintenance performed a number of major modifications to the wing's aircraft during the period such as reworking all assigned F-4 tail hooks and fairings and installing new radar altimeters.[157] Despite these and other problems and distractions, every assigned flying unit performed outstandingly, maintaining the highest operational and maintenance status (C-1).[158]

The first quarter of 1970 found the 432d TRW even more drastically reshaped. By then Udorn RTAFB possessed all the air power assets and elements employed in Southeast Asia except for strategic bombers and tankers. The wing itself retained its RF-4, F-4D, and C-130E squadrons but also gained three AC-47D gunships as a result of its successful experiments the preceding year. This particular composite mix--a total of eighty-six aircraft--was unique within Southeast Asia and represented "….the only team effort in the Air Force of a coordinated reconnaissance/strike unit."[l59] Concurrent with its new structure, the 432d's mission evolved increasingly toward one of "attack and destroy," and it continued to play a major role in the Viet Nam War. Its reconnaissance aircraft provided almost all surveillance over Laos and North Viet Nam; the wing's strike aircraft were a major part of the USAF's effort against the Ho Chi Minh Trail and also provided reconnaissance and B-52 escort over North Viet Nam; and its gunships "….continually supported friendly outposts in Laos and often meant the difference of holding these outposts or being overrun."[l60] The 432d continued to provide maintenance support to a host of tenant units, albeit at reduced levels from previous periods: nine different types totaling

twenty-five aircraft.[161] Through it all, the Wing achieved 75.8% and 75.1 % OR rates for its F-4D and RF-4C aircraft, respectively, and handily met Air Force NORS rates, those for all assigned F-4s remaining near the lowest in the entire USAF.[162] In addition, the two fighter squadrons and the Seventh Airborne Command and Control Squadron (C-130Es) maintained the highest possible combat readiness rating (C-l); both reconnaissance squadrons operated at reduced readiness levels due to reduced aircrew availability.[163] All in all, however, the 432d's performance during this period marked a continuing trend in excellent composite operations. Unfortunately, although the Wing continued to operate in SEA, the remainder of its unit histories and supporting documents remain classified, which prevented further discussion in this paper.[164] However, the available unclassified information speaks volumes about the wing's capabilities.

Before leaving the 432d, however, it is important to note two important aspects about the wing's latter exploits that vaulted into Air Force history books. First of all, two senior officers assigned to the 432d during 1971-1972 were destined to rise to greater positions in the Air Force. The first, Colonel Charles A. Gabriel, 432d TFW Commander, would one day become Air Force Chief of Staff. The second, Colonel Jerome F. O'Malley, the 432d's Vice Commander, later took charge of the Tactical Air Command, supervising the USAF's fighter force until his untimely demise in a military aircraft mishap. Lastly, but most importantly, in January 1972 Sergeant Lonnie D. Franks, an intelligence specialist assigned to the 432d TFW, informed his congressman of suspected unauthorized bombing raids on North Viet Nam and the false statements the wing's aircrew members were reporting to cover up the incidents. Sergeant Franks' accusations set off tremors felt at the U.S. government's highest levels and ultimately toppled General John D. Lavelle from his command at Seventh Air Force, the Air Force component in Viet Nam.[165] Although this scandal, usually known as the "Lavelle Affair," has since clouded the 432d TFW's outstanding record in SEA, it should not overshadow this mislabeled composite wing's significant and unique contributions to the war in Viet Nam or composite unit history. Meanwhile, another composite wing was also making history elsewhere in Thailand.

In July 1972, the 388th Tactical Fighter Wing at Korat Royal Thai AFB, Thailand, flew four different kinds of aircraft: F-4Es. F-105Gs, EB-66Cs. and C-130s. During this period, the wing's primary mission was suppression of enemy air defenses (SEAD). The following excerpt from the wing's history demonstrates the value of this composite force:

> The increasing surface to air missile (SAM) threat made continued work along the enemy's lines of communications more and more hazardous during this period. To prevent the sites from operating unencumbered, as they have been, the wing formed hunter/killer teams made up of two F-105Gs and two F-4Es. This mixed aircraft flight would hunt out the SAM sites with the electronic equipment of the F-105s, and then the F-4Es would destroy the sites with cluster bombs. In addition, the F-4s were able to protect the F-105s from the MIG threat. The success of this tactic was evidenced toward the end of the quarter, as SAM operators began to hold their fire for fear of giving away their position to the deadly duo in the sky. The total number of SAM firings was reduced significantly after the appearance of the hunter/killer teams.[166]

This type of composite force employment became a standard, highly effective practice in Viet Nam and, in fact, is still going on today at Spangdahlem AB, Germany. In 1987, the Fifty-Second Tactical Fighter Wing began flying F-4Gs and F-16s in Wild Weasel hunter/killer teams. Ironically, on 17 January 1991, Spangdahlem's composite teams became some of the first American aircraft to enter Iraq during the Gulf War.

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[145]Concept of Operations, "Jungle Jim," Headquarters Tactical Air Command, Langley AFB, Virginia, 10 May 1959, 1.

[146]Ibid., 3-4.

[147]Ibid., 4.

[148]USAF Special Air Warfare Center (TAC) History, Hurlburt Field, Florida, 27 April-31 December 1962, 153-155.

[149]Dr Thomas S. Snyder, "A Brief History of Composite Forces in the United States Air Force," Office of History, Headquarters, United States Air Forces in Europe, Ramstein AB, Germany, 22 February 1991. 7,

[150]History of the 432nd Tactical Reconnaissance Wing, Udorn Royal Thai Air Force Base, Thailand, January-June 1967, Introduction, 1.

[151]Ibid., 2.

[152]Ibid., 9-19.

[153]History of the ~32nd Tactical Reconnaissance Wing, Udorn Royal Thai Air Force Base, Thailand, January-March 1969, Introduction, 1-2.

[154]Ibid., 66-71.

[155]Ibid., 2, 66-67.

[156]Ibid., iv, 21-22.

[157]Ibid., 66-70.

[158]Ibid., 14. Then as today, unit status was reported to higher headquarters using a code system. C-l indicated the unit met all command standards and was fully operational and able to execute any assigned task. C-2 meant a unit was operating in degraded status, either for personnel or maintenance problems, but could still execute most assigned missions, C-3 status indicated a unit was unable to execute assigned tasks until personnel or maintenance problems were rectified, Many units operated effectively and for considerable periods in C-2 status.

[159]History of the 432nd Tactical Reconnaissance Wing, Udorn Royal Thai Air Force Base, Thailand, January - March 1969, Introduction, Foreword.

[160]Ibid., Forward.

[161]Ibid., 43.

[162]Ibid., 44-45,

[163]Ibid., 12. For further clarification see also History of the 432nd Tactical Reconnaissance Wing, Udorn Royal Thai Air Force Base, Thailand, October - December 1969.

[164]For those with appropriate security clearances, significant information about the 432 TFW's subsequent performance and composite operations in SEA is available under the category, K-WG-432-HI, in the USAF Historical Research Center, Maxwell AFB, AL. The SEA

Declassification Team is scheduled to review applicable histories in the not to distant future and, hopefully, their efforts will open much information on one of the most outstanding composite wings in the Vietnam War."

[165]Gordon A. Ginsburg, "The Lavelle Case: Crisis in Integrity." Air War College Thesis, Air University, April 1974, 50-58.

[166]History of the 388th Tactical Fighter Wing, Korat RTAFB, Thailand, July-September 1972, Vol. 1. 19-20.

CHAPTER VIII

OPERATION DESERT STORM

Composite units made major contributions to the coalition effort during OPERATION DESERT STORM. Unfortunately, much of the information about actual combat is still classified, but enough exists in open sources to give some flavor of what went on.

Two composite wings operated against Iraq during the desert war. The Fourth Tactical Fighter Wing (Provisional) operated from Al-Kharj, Saudi Arabia. Flying forty-eight F-15Es, forty-two F-16As, twenty-four Fl5Cs, and twelve C-130s, the Fourth provided strike and air superiority support to the US Eighteenth Corps throughout the war. During that time the wing destroyed eleven Iraqi aircraft in aerial combat. Eight hundred miles away, at Incirlik AB, Turkey, the 7440th Composite Wing (Provisional) operated twenty-two F-lllEs, twenty-four F-16Cs, twenty-four F-l5Cs, twelve F-4G/F-16 hunter/killers, six RF-4Cs. and a host of highly sophisticated support aircraft. From 17 January through 28 February, the 7440th flew 4,600 operational sorties without a combat -related 1oss.[167] Because the 7440th is most often cited as indisputable proof the composite wing concept has finally come of age, this study will conclude with a detailed look at that unit's wartime exploits.

General Charles Horner, the joint Force Air Component Commander (JFACC), assigned PROVEN FORCE, as the Incirlik unit was known, the northern one-third of Iraq and ordered it to open up a second independent air front. The objectives were twofold: 1) to deny Saddam Hussein sanctuaries in the north; and 2) to prevent him from concentrating his defenses in the south.[168] Too far from the southern battlefront to be of any real assistance there, the 7440th concentrated on a strategic bombing campaign to ensure "specified nuclear, chemical, biological, and missile production facilities were systematically destroyed."[169] Generally flying three tailored attack waves each day--two in daylight and one after dark--the wing also seriously damaged over one hundred key C^2 facilities, war production plants, and airfields. Amazingly, the wing maintained a 99.4% sortie effectiveness rate throughout the forty-two-day war.[170] By any measure the 7440th Composite Wing appears to have been a smashing success. PROVEN FORCE operated so well that many claim it validated General McPeak's composite

wing concept.[171] However, was it a fair test?

While it is not this study's purpose to detract from the 7440th's wartime accomplishments, a number of factors made the picture at Incirlik appear slightly more rosy than it might otherwise have been. First, Incirlik Air Base is a superbly equipped and maintained NATO main operating facility, complete with hardened aircraft shelters, underground fuel storage, expansive maintenance facilities and other highly desirable attributes. Second, the base was never attacked and generally operated with almost a peacetime air, undoubtedly easing operations.[172] Third, one of HQ USAFE's planning officers on the scene claimed, "[the wing] had more airplanes than [they] knew what to do with--the sortie rate did not tax maintenance or the airplanes."[173] Likewise on the operations side of the house, the wing received 450 aircrew members--almost four times the number of a normal F-l6 fighter wing.[174] Incidentally, these crew members weren't just any run-of-the-mill types; they were the very best the supporting units could provide.[175] Finally, although the logistics infrastructure at Incirlik was responsible for keeping the wing's aircraft in the air, every deployed unit received hand-delivered parts from their European home bases nearly every day. Instead of one logistics system, in reality there were dozens of black market pipelines supporting the operation.[176] Fair or not, these conditions certainly did not detract from the composite wing's stellar performance.

On the other hand, there has not been a better scenario than Iraq for a composite wing since Colonel Cochran took his Air Commandos to Burma in 1943. Like Cochran, General Downer, the 7440th's commander, personally crafted the force he deployed to Incirlik and led into combat. His airplanes and crews were the very best available for the task. Like Cochran, Downer had almost complete freedom to operate as he saw fit in his theater of operations. Also similar to the situation in Burma, Downer's forces did not face the bulk of the enemy's forces. Fortunately in both cases, the Americans seized the initiative and gained air superiority very quickly. In the end, however, General Downer, again like Colonel Cochran, gave the credit for success to his people. He said, "Once the decisions to go were made, it was then, as usual, up to the people who were given the task to make it work. It should be clear from their accomplishments that they assumed the challenge with a great deal of enthusiasm and skill.

They knew their jobs, did not hesitate to make decisions and kept improving the operation as they gained seasoning and experience."[177] He could have been describing Cochran's Air Commandos!

Does the 7440th Composite Wing validate the composite wing concept? For that particular place, in that particular war, perhaps. Would the 7440th have performed as well in, say, Viet Nam or the Lebanon Crisis of '58? Historical data could allow the issue to be argued either way. One other bit of information might lend credence to claims the composite wing has come of age--the Fourth Tactical Fighter Wing's combat record while operating from Al-Kharj. Unfortunately, almost all information regarding the Fourth remains classified. Hopefully, that information will be downgraded soon. It will be interesting to learn how the Fourth performed as just one of many wings operating along Kuwait's southern border, as opposed to the 7440th that had the northern theater all to itself. Until that time, airmen can only speculate on the truth; however, from overall appearances, the composite wing played an integral part in the Gulf War and performed well.

NOTES CHAPTER VIII

[167]Martin Street1y, "Composite Wing Proven in the Gulf," Janes' Defense Weekly 31 August 1991. 370.

[168]Maj Gen Lee Downer, "The Composite Wing in Combat," Airpower Journal, Vol. 5, (Winter 1991), 6.

[169]Ibid., 6-7.

[170]Ibid., 14, Also note, an effective sortie is one that gets airborne and accomplishes some type of assigned mission.

[171]Streetly. "Composite Wing Proven in the Gulf," 370.

[172]Interview with Major William McNelis, HQ USAFE/DOJW, 8 November 1991.

[173]McNelis Interview, 8 Nov 91.

[174]Downer, "The Composite Wing in Combat." 8.

[175]McNelis Interview, 8 Nov 91.

[176]Downer, "The Composite Wing in Combat." 13.

[177]Ibid., 14-15.

CHAPTER IX

ANALYZING THE COMPOSITE WING CONCEPT

Having plowed through more than seventy-years of air power history, can we now draw any conclusions about the composite wing's viability in today's world? Unfortunately, the composite wing has a varied and colorful enough history to support almost any position on the subject. Clearly, anyone could easily dig up at least a handful of historical evidence to support or condemn the idea. However, it appears at least enough data exists to allow airmen to draw some broad conclusions on the matter. First of all, what has history told us about the composite wing's virtues or vices?

The composite wing concept unquestionably has many positive points. First, a composite wing is well suited for independent operations in remote areas, especially when a premium is placed on effectiveness, flexibility, and responsiveness. Again, Air Commando operations in Burma exemplify these traits. Second, because of its inherent ability to operate independently, a composite unit is superbly structured to perform secret operations. Colonel Tibbets and the 509th proved that point. Third, a composite unit works best when tailored for specific missions and tasked accordingly. The 388th TFW's hunter/killer teams, uniquely structured and detailed to successfully handle the growing SAM threat in Viet Nam, exemplify the benefits a focused composite force provides. Persistence is a fourth and perhaps overlooked composite wing virtue. For all its imperfections, the composite wing offers raw wartime performance other organizations cannot match. Therefore, despite any shortcomings, composite units have reappeared time and again to tackle some of the Air Force's toughest and most unique missions. Performance is, therefore, the composite wing's fifth virtue. Though generally less efficient and more expensive than comparable homogeneous units, composite wings have been worth the added costs when effectiveness or mission success were key measures of merit. Not surprisingly, airmen since 1920 often paid handsomely to capitalize on the composite wing's unique performance potential. In fact, this study failed to uncover a single composite unit that, given support equal to a homogeneous wing and not operated on an ad hoc basis, performed consistently below established standards or failed its assigned mission. Even the First Composite Squadron on Ascension Island and the Twenty-eighth Composite

Group in Alaska accomplished their assigned missions despite obstacles that could have crippled any organization. Sixth, though common sense indicates a composite wing would be more complex and thus more difficult to manage than a like-sized homogeneous unit, such is not the case. The author found no evidence of a senior Air Force officer with "composite" experience ever criticizing the composite structure. Generals Hoyt S. Vandenburg, Sr., Chappie James, Benjamin O. Davis, Jr., Charles Gabriel, Jerome O'Malley each flew with or commanded a composite organization and not one ever maligned composite basing.[178] In fact, most commented little at all on the subject, pro or con.[179] Colonel Herbert Carter, the 477th Composite group's former maintenance officer, had one explanation for this phenomenon. According to the Carter, "No one thought much about a group being composite. There was a war going on and we were given a mission to accomplish. The composite group was just another way of doing business."[l80] Colonel Carter's comments point to one final composite-wing attribute--exceptional people. Invariably, men and women assigned to composite units have taken great pride in being members of a distinctive team and have gone the extra mile to make the unit a success. Cochran's Air Commandos, Tibbets' men, and Downer's troops during the Persian Gulf War exemplify the traits so common to composite units throughout history--ingenuity, esprit de corps, and perseverance to name just a few. All in all, composite wings have many attributes, but they also can have shortcomings.

Unfortunately, history has shown composite wings have some substantial weaknesses. Perhaps the most glaring is their tendency to pack insufficient combat striking power. The composite groups defending America's overseas territories during the interwar years amply illustrate this point. Second, compared with homogeneous wings, composite wings are, as a rule, generally less efficient and more costly. For example, the 366th Wing at Mountain Home AFB, will require 4,372 maintenance personnel to keep its sixty-four aircraft flying; a wing operating seventy-two F-16Cs requires only 3,653 technicians.[181] The 366th's additional 700-plus

manpower slots readily translate into a substantial sum of money. Third, a highly interdependent composite unit is only as strong as its weakest link. Could Tibbets' 509th bomber crews have operated as well or with as much secrecy had the transport crews failed to deliver required mission materials? How many F-4G/F-16 hunter/killer teams could the Fifty-second TFW launch from Spangdahlem AB if its aircraft had sixty-five and ninety-eight percent mission-ready rates, respectively?[182] Fourth, the requirement to tailor a composite wing to a suit a particular set of variables makes the resulting force extremely sensitive to shifts in its combat environment. Remember the Second Air Commando Group's glider pilots on Luzon in 1944? Changing circumstances in theater left them permanently unemployed at a time when manpower throughout the Pacific was in short supply. The "A-Team/B-Team syndrome" is a fifth potential problem commonly found in composite organizations. The 509th Composite Group's bomber pilots were the A-Team and got all the glory while the B-Team transport drivers were simply ignored and forgotten. Sixth, and finally, a composite wing is optimized for independent, decentralized operations and faces a potential doctrinal dilemma when interspersed with other units, all under the centralized control of a higher command authority. Colonel Cochran faced this problem in Burma. Cochran, operating under General Arnold's protective umbrella, carried his quest for independence to an extreme, much to the theater air commander's chagrin and possibly to the detriment of the overall theater air effort. Inversely, had General Arnold not interceded on Cochran's behalf to preserve the unit's organizational integrity, the Air Commando's unitary combat effectiveness might have been destroyed as air assets were skimmed off to support other theater-wide efforts. Obviously, there are a number of pitfalls to overcome as the USAF prepares to activate composite wings at Mountain Home AFB, Idaho, Pope AFB, North Carolina, and Moody AFB, Georgia.

The quickest of these pitfalls to deal with is the A-team/B-Team syndrome. The Air Commandos

experienced it in the Philippines; the 477th dealt with it in 1945; and today's airmen at Seymour-Johnson are aware of it. The easiest and most effective solution is sound leadership. Colonel Carter readily admitted such squabbling went on between the 477th Group's bomber and fighter pilots, but praised General Davis' sensitivity and insightful leadership for killing the problem almost before it raised its head.[183] More recently, Lieutenant Colonel Dan Ballard, commander of the 344th Air Refueling Squadron at Seymour-Johnson AFB, voiced similar concerns and advocated the same solution. "We were concerned how the tanker folks would fare against the fighter folks regarding assignments, school selections and promotions," Colonel Ballard confessed. "But the wing commander [made] selections without regard to tankers or fighters. He pick[ed] the best person."[184] Obviously, sound leadership will go far toward solving some of a composite wing's problems, but what about the others? Do the pros outweigh the remaining cons? In the past they generally have not; but, perhaps today's technology has given the composite wing a chance to get into the game for good.

In the past, two detractors have kept composite wings out of the starting lineup except when no other option would suffice; both have to do with efficiency. First, composite wings have never been able to compete with homogeneous wings in terms of logistics and maintenance economies of scale. Second, airplanes have seldom been capable of delivering sufficient punch unless massed in large formations. Throughout history, both factors have driven the Air Force toward homogeneity at the wing level and below. However, today's technology has finally reversed the cost-benefit ratio on both counts.

Though many of the composite wing's most vociferous foes claim the variety of spare parts and maintenance capabilities required to operate different aircraft at a single base make the idea prohibitively expensive, the facts paint a different story. In terms of maintenance and reliability, today's aircraft are light-years ahead of those produced just a decade ago. For example, a new ring-laser gyro for F-15Es has proven fifty-five times more reliable than the navigation system in older-model F-15s. Similarly, a new battery for the F-16 proved to be thirteen times more reliable than the one it replaced.[185] This reliability through technology saves money. For instance, it takes $82 million in spare parts to support twenty-four F-llls, $25.5 million in spares to support a like number of F-15Cs, and only $14.6 million in parts to keep

the same number of F-16Cs in the air.[186] From another viewpoint, thirty-nine maintenance technicians support a single F-lll; twenty-five keep one F-15 flying; and each F-16 employs twenty-two.[187] Significantly, the F-lll, the F-15, and the F-16 represent 1960s, 1970s, and 1980s technologies, respectively. These figures paid big dividends during DESERT STORM, where nearly all U.S. airplanes broke records for wartime sortie rates and could have flown more. The latest- generation F-15Es and F-16Cs, for example, maintained readiness rates in excess of ninety-five percent, despite inclement weather, often substandard maintenance facilities, and round-the-clock tasking. According to the Headquarters Air Force special assistant for Reliability and Maintainability, Brigadier General William E. Collins, "Our airplanes were often on the ground not because they were incapable of flying, or because they were being worked on, but because we literally didn't have anyone to fly them."[188] The aircraft had actually outflown the available pilots. These facts and figures make a significant statement about our ability to support, maintain, and operate a composite wing successfully. According to General Collins, "Traditionally, composite wings implied terrific logistical problems. We wouldn't even be able to consider composite wings if we hadn't reached the level of supportability that we have today."[189] Statistics prove today's airplanes are reliable, but can they put enough iron on target to justify composite basing?

Today's aircraft possess precision and lethality unimaginable just a generation ago--enough to support composite basing. As demonstrated on television nearly every night during the Gulf War, most of today's newest aircraft combine sophisticated on-board systems and precision-guided munitions (PGM) to achieve the "pickle-barrel" accuracy aviation pioneers only dreamed of. To demonstrate just how far technology has pushed weapons accuracy, imagine attempting to destroy a sixty-by-100 foot target with 2000-pound bombs. During World War II an effort of that magnitude required over 9,000 bombs, more than 4,000 B-17 sorties, and 40,000 men to ensure just half the bombs fell inside a 3,300-foot area around the target. Destroying the same target in Korea with F-84s or in SEA with F-105s required fifty-five aircraft and pilots to drop nearly 200 bombs, half of which landed within 400 feet of the target. During DESERT STORM a mission commander had two options for attacking a similar target, depending upon the enemy's defenses. He would attack a moderately defended target with fifteen

pilots and F-16s carrying thirty bombs to ensure fifteen fell within 200 feet. However, if the target were heavily defended, the commander could detail one F-117 pilot and aircraft to deliver one bomb, which would land no further than ten feet from the intended aim point.[190] Obviously, technology affords today's commanders incredible precision, lethality and resulting economies of scale. Another example from the Gulf War further highlights this trend. During the war, the F-16 was by far the most numerous strike aircraft in theater. Armed with an assortment of freefall weapons, a normal attack package numbered thirty-two F-16s and forty-three supporting aircraft. However, F-15Es armed with PGMs could take out the same targets with sixteen attackers and thirty-nine supporting airplanes. Eight F-117 Stealth fighters and two KC-135 tankers could replace either package with equal or better results while putting significantly fewer friendly resources at risk.[191] In fact, F-ll7s took on the toughest targets in Iraq. While they made up only 2.5% of the air force, F-117s hit thirty-one percent of all targets in the air war's first twenty-four hours. In addition, Stealth fighters destroyed over forty percent of all strategic targets in the campaign while flying just one percent of all sorties.[192] Though not all aircraft are as capable as the F-ll7, the trend is obvious. Lieutenant General Charles Horner pointed out this trend to a congressional subcommittee, predicting, "As we increase the lethality and flexibility of the airplanes, our force gets smaller."[193] If packaged properly, the ability to stuff large amounts of combat power into smaller and smaller forces gives the composite wing a renewed lease on life.

Despite these favorable trends, many critics continue to cite the composite wing's high costs as a reason for killing the concept, especially as funding becomes more austere. Undoubtedly, the $42.1 to $67.6 million the Air Force anticipates spending to bed down the 366th Wing is no small sum.[194] However, those who couch the entire composite wing decision in terms of dollar signs are missing one of the most significant lessons from history. Composite wings are not necessarily efficient, but they are designed to be extremely effective. Had the decision to form the 509th Composite Group rested on monetary decisions alone, history might well have been rewritten. Had Arnold not allowed Cochran free rein in selecting the assets he

required for his mission in Burma, Wingate's situation and the war in SEA might have gone differently. In short, America has always paid the price for a composite wing when effectiveness and results were over arching determinants. As already pointed out, the 509th was an expensive but effective means to ensure the first atomic weapons were properly delivered. At the same time the Air Corps shamelessly paid the price to keep the 477th Composite Group segregated, though the men and planes might have been more, efficiently employed elsewhere. A RAND study suggests a composite wing is roughly three percent more expensive than a conventional fighter wing.[195] The author believes RAND's estimate is fairly conservative; nonetheless, those who make the ultimate decision to fund the composite wing must remember they are purchasing wartime effectiveness, not peacetime efficiency. That does not mean fiscal constraints are insignificant or to be taken in a cavalier manner. History simply reminds us that sometimes we have to pay for just the right tool.

Air Force Manual 1-1, Basic Aerospace Doctrine of the United States Air Force, also gives credence to composite basing by reinforcing history's lesson regarding effectiveness versus efficiency. It reminds airmen that, "Attaining the full potential of aerospace power requires a continuous search for better ways to organize the Air Force." It further states, "Air Force elements should be organized for wartime effectiveness rather than peacetime efficiency" and warns that peacetime efficiencies can be "self -defeating." "Operational effectiveness" is also highlighted as a key consideration when choosing an organizational structure. Finally, doctrine says, "Air Force units should be organized to enhance self-sufficient operations." Though quoting doctrine can be as dangerous as evoking Scripture--there is support for any point of view--Air Force Manual 1-1 clearly places a premium on organizing units for combat effectiveness, one of the composite wing's strongest suits.[196]

Today's changing world order also makes a strong case for the composite wing's combat effectiveness. With the decline of the Soviet Union and the Warsaw Pact, America faces a threat situation in many ways nearly identical to the mid-1950s when the CASF emerged. Then the threat of massive

nuclear retaliation put a lid on large-scale, conventional wars and promoted regional brushfire conflicts. Today, the bipolar world's dissolution and the rapid shift toward multipolarity has created enough of a power vacuum to heighten again the prospects for regional conflict. As the receding Soviet threat precipitates the withdrawal of U.S. forces from overseas, America will require a responsive, effective fighting force to project American power and protect national interests abroad. As Air Force Secretary Donald Rice recently told a congressional subcommittee. "This new world order we are rapidly moving into plays to Air Force strengths--rapid, deployable, long-range, flexible, and lethal capabilities, which can deter, provide a tailored response, or punch hard when required."[197] Secretary Rice could be describing the CASF or the intervention wing at Mountain Home AFB….or is he?

Are Secretary Rice and the Air Force truly getting what they expect from the composite wing? Take the 366th Wing at Mountain Home AFB, for example. It is structured to rapidly project a small, but potent force anywhere in the world to protect U.S. interests against unknown threats.[198] The intervention wing may be the only national military element inserted into a minor situation, or it could be the lead element of a larger follow-on force responding to a major regional conflict. Acting alone or as part of a theater-wide force, the intervention wing is equipped to fight continuously round-the-clock. Unfortunately, historical precedence suggests the intervention wing as it now stands may be ill-suited to perform all the tasks the National Command Authority (NCA) might expect it to carry out. First of all, like many composite wings before it, the intervention wing's small size and composite structure may hinder its combat striking power and capability. Not only might it lack sufficient combat power, but its composite basing scheme may hinder the wing's ability to respond rapidly in a crisis. Next, the intervention wing faces the same doctrinal dilemma Cochran dealt with in Burma fifty years ago--can a unit designed for decentralized mission execution be successful in a system that places its assets under the central control of a higher authority? Today that dilemma is becoming increasingly acute as the Air Force takes steps to further decentralize combat execution while rapidly shrinking its fighting force. These issues may not be "show stoppers," but they certainly warrant examination before the Air Force proceeds much further in its scheme to build more composite wings.

Mountain Home's intervention wing is designed to deploy a highly tailored force anywhere in the world and, once there, to conduct autonomous, self- sustained, twenty-four-hour conventional operations for up to seven days.[199] To accomplish this task, Air Force planners assigned the wing eighteen F-16C and twelve F-l 5E strike fighters, eighteen F-l5C air superiority fighters, and six KC- 135R air refueling aircraft. In addition, seven B-52H heavy bombers have been earmarked for the intervention wing. Unfortunately, they will remain at Castle AFB, California, because Mountain Home's runway is incapable of supporting the bomber's size and weight.[200] The wing may also have access to additional off-station assets, depending on the situation it faces, including EF-111 radar jammers, F-4G SAM suppression aircraft, and E-3B airborne warning and control system (AWACS) aircraft. As an aside, the 366th possesses none of its own transport aircraft. Originally, many of the above assets were to have been assigned directly to the wing and based at Mountain Home; however, a number of factors, not the least of which was cost, drove planners to seek ways to make the concept more palatable. The obvious solution dictated leaving the larger, more costly aircraft at their former bases. Unfortunately, this move produced a leaner force that, like many composite wings throughout history, may lack combat power and might have trouble effectively accomplishing the roles it was designed to perform. First, the 366th's small size may make it difficult to deploy quickly to a crisis location. Next, with so few resources the intervention wing may find itself severely handicapped when trying to tailor a fighting force to confront a larger, more complex threat, unless external assets are called in. In short, the intervention wing's forty-eight fighters and seven bombers alone may not pack enough punch to intervene in many of the world's trouble spots. However, before they can intervene anywhere, they must be able to get off the ground quickly.

Planners intentionally limited the intervention wing's fighter force to make it a, "leaner, meaner,

more responsive organization," thinking a smaller, more lethal force requiring fewer parts, personnel, and weapons could deploy overseas faster than a large, conventional wing.[201] After all, just like the CASF before it, the speed with which the intervention wing arrives in theater is thought to be just as important as the firepower it brings along. Unfortunately, the intervention wing's reduced size may actually make it tougher to deploy than a regular fighter wing. Why? Because, unlike a three-squadron F-l6 wing, the composite wing has no "fat" to draw upon.

Normally, when an F-l6 wing deploys, it moves one squadron at a time. The first squadron to depart can draw resources or "fat"--pilots, airplanes, maintenance personnel, and spare parts--from the remaining units to launch a squadron-size complement within the allotted time. Broken aircraft stay behind for the remaining squadrons to fix. At the same time, the first squadron's personnel who were off station on leave or temporary duty, having been recalled, are reporting for duty. The second squadron uses these assets, its own, and the third squadron's to launch its force package on time. Sometime later, the third squadron deploys with all available remaining assets. Often, as happened during DESERT STORM, the third squadron never deploys at all.[202]

The 366th Wing's squadrons will not have the luxury of drawing on one another in this manner. If, for example, the F-16 squadron deploys first it cannot ask one of the F-15 squadrons for spare pilots or aircraft. Additionally, calling off station for spare aircraft and pilots will take precious time and possibly jeopardize operational security. Pilots with aircraft that experience maintenance difficulties and do not take off with the squadron may find that all qualified maintenance personnel have already deployed, leaving no one to fix the bird. Furthermore, leaving pilots and maintenance personnel behind to tend ailing aircraft only detracts from the deployed squadron's forward operations. Undoubtedly, solutions exist to correct these deficiencies. Nonetheless, it is quite clear the 366th's present size and composite organization will make it difficult to deploy its entire force in a timely manner. Unfortunately, even if the wing solves its deployment problems, its small size still renders it relatively ill-prepared to properly tailor a force or project sufficient combat power into a crisis situation.

History has proven that a successful composite force must be tailored to suit its intended combat

environment and beefy enough to deliver a hard punch. Both Cochran's Air Commandos and Tibbets' 509th filled the bill on both counts. The 366th Wing, on the other hand, might find itself hard pressed to do either. As presently postured, the intervention wing is a "bare-bones" force. Comparing its capabilities with the standard Gulf War force packages mentioned above makes this deficiency obvious. To review, a typical Gulf War F-16 package consisted of thirty-two F-16s, sixteen F-15C air superiority fighters, twelve aircraft to suppress enemy air defenses, and fifteen KC-135 refueling planes--seventy-five aircraft in all. Not only is this force bigger than the entire intervention wing, it has nearly twice as many F-16s and KC-135s as the 366th. Likewise, the standard Gulf War F-15E package had thirty-three percent more F-15Es and nearly fifty percent more KC-135s than presently available to the intervention wing. The comparison brings out two important points. First, the intervention wing does not possess enough air assets to form a typical force package employed in the last war, even if all its aircraft were fully operational. Second, given this shortfall, its ability to tailor a force properly to handle more than a minimal threat may be substantially lacking. Again, given proper attention these shortfalls may not cripple a unit, although General McPeak himself admitted, "the case for the composite wing rests on its improved performance in combat."[203] Sadly, evidence suggests the intervention wing may lack the punch it needs to succeed. Based on historical precedent, that should at least make Air Force planners take a serious look at the composite wing's potential muscle.

The last potential problem facing composite wings is not a physical flaw, but a time-worn doctrinal dilemma regarding how best to organize and control air power to optimize mission execution. Since World War II, two key principles in U.S. Air Force doctrine have been centralized control and decentralized execution. AFM 1-1 states, "to exploit the speed, range, flexibility, precision, and lethality that make aerospace forces so versatile, their organization must make it possible for missions to be centrally controlled. The need to respond to and exploit unforeseeable events requires these same forces to be capable of decentralized execution."[204] Central control allows full, effective, and coordinated use of an entire air force. Decentralized mission execution allows units in the field the latitude to deal with tactical conditions not readily apparent to those at higher levels of command. Therein lies the dilemma.

Centralized control focuses on war at the theater or operational level and decentralized execution deals with tactical considerations in combat. If the two principles are viewed as opposite ends of a continuous spectrum, AFM 1-1 suggests a well balanced unit would fall somewhere in the middle. For better or worse, composite wings are by their very nature tactical-level beasts optimized for decentralized mission execution.

Born and bred to conduct highly independent operations, composite wings have traditionally resisted central direction from higher headquarters. As discussed above, Colonel Cochran worked vigorously to retain his unit's independence in Burma and simply ignored all directions except those from General Arnold himself. He did so for good reason. Any outside tampering with his unit's finely tailored force structure could have destroyed it and doomed General Wingate to failure. From Cochran's perspective his unit's independence and mission were absolutely vital; however, in the theater air commander's eyes other objectives may have loomed more important. Cochran's air assets may have been better used elsewhere to achieve operational-level objectives, but by parceling out air power at the tactical level. General Arnold denied the theater air commander the latitude of central control. In other words, for the sake of an experiment General Arnold allowed tactical considerations to take precedence over operational imperatives. There, in a nutshell, lies one of the greatest dangers in overemphasizing composite wings. Why is an organization that favors tactical considerations over theater concerns dangerous? History provides a clear answer.

As discussed in the opening pages of this study, composite wings exist today because many airmen, including General McPeak, are dissatisfied with the C^2 mechanism the theater air commander uses to control the air effort centrally--the ATO. Believing the ATO system is unreliable and will break down under stress, planners hope to overcome this problem by parceling air power assets into small, highly independent packets that can operate with mission-type orders. Air Force planners tried a similar theory in February 1943, at a place in North Africa known as the Kasserine Pass. Army ground commanders, doubting the Air Corps' ability to control air assets centrally, insisted on each having his own small air force. Unfortunately, the airmen acquiesced. Doled out in small packets across a wide

front, air power proved both operationally and tactically ineffective when the Germans attacked on 14 February.[205]

After near defeat at Kasserine, the Americans turned to British Field Marshal Sir Bernard Law Montgomery for lessons he learned about air power in earlier campaigns. In his pamphlet, High Command in War. Montgomery insisted air assets should be centrally controlled under an air officer. He further argued that air power must be massed, not dispersed in "penny packets." According to Montgomery:

> the greatest asset of air power is its flexibility, and this enables it to be switched quickly from one objective to another in the theater of operations. So long as this is realised (sic), then the whole weight of the available air power can be use in selected areas in turn; this concentrated use of the air striking force is a battle winning factor of the first importance the army commander can obtain the support of the *whole air striking force* [emphasis in the original] in the theatre of operations, because of the flexibility of air power. Once this flexibility is destroyed, or is negatived (sic) in any way, then the successful outcome of the battle becomes endangered.[206]

Proven in combat, these tenets and the remainder of Montgomery's pamphlet became American air power doctrine for the remainder of the North African campaign, the war in Europe, and. after 1947 for the USAF. Ever since, centralized control and decentralized execution have been major articles of faith in American air power circles.

Thankfully the Air Force is making a serious effort to revamp its C^2 net as it builds composite wings. According to Lieutenant General Robert Ludwig, Air Force deputy chief of staff for command, control, communications and computers, the Air Force is revamping its tactical command and control networks at a cost of roughly $1 billion over the next six to eight years. The changes in doctrine and equipment are intended to increase the freedom of Air Force wings to react quickly, while preserving centralized direction and coordination of forces.[207] Each composite wing, for example, will be equipped with mission planning equipment like the Wing Command and Control System (WCCS) at a cost of $2 million to $4 million per wing.[208] Unfortunately, high-priced communications gear might not be enough to guarantee tactical concerns remain subservient to operational matters as composite wings come on line. Composite wings are organized for maximum tactical effectiveness and there is certainly the potential for

them to become small independent air forces unto themselves. However, they must remain responsive to and under the central authority of the theater air commander for the overall air campaign to be successful. Anything less would be unacceptable.

All in all, today's composite wing appears to be a concept worth trying. It possesses all the best traits of its composite predecessors and fewer of their vices. Flexible, effective, and capable of highly independent operations, the composite wing has a great deal to offer, especially in today's rapidly changing threat environment. Unfortunately, some of its vices cannot be easily corrected. For example, despite all the advances in weapons accuracy and lethality, today's composite wings may still lack sufficient combat striking power. One fix would require the Air Force to increase funding to make the wings more robust. Given four or five full-size squadrons of different aircraft instead of the three small ones it now owns, the intervention wing would pack a much greater wallop, could more effectively tailor a large combat force using assets available at home station, and probably could deploy a sizable force much quicker than currently possible. However, that solution only adds to the composite wing's already high cost and may be unacceptable given projected budget constraints. Finally, Air Force leaders must be aware of the possible repercussions of making a major organizational shift away from centralized control to grant the composite wing a greater measure of decentralized mission execution. As General Montgomery pointed out in 1943, if such a move destroys air power's overall ability to mass across the entire length and breadth of the battlefield, the entire battle may be in doubt. Such a warning is particularly poignant as the Air Force becomes a smaller, leaner force. Without a doubt, however, the composite wing is sure to be a part of that force for at least the next few years. Hopefully, airmen with a sound working knowledge of the composite wing's past will be better prepared to solve its potential problems and mold it into a viable part of America's air arm.

NOTES CHAPTER IX

[178]First Lieutenant Hoyt S. Vandenburg, Sr., commanded the Sixth Pursuit Squadron at. Wheeler Field, Hawaii, from 1929 to 1930. His squadron regularly trained with elements of the Fifth Composite Group from nearby Luke Field, an unusual practice for airmen of the interwar years because air units in other regions of the U.S. were normally widely dispersed making coordination difficult. Vandenburg eventually became Chief of Staff of the Air Force. Despite his close association with Luke's composite group and the unusual nature of his experience there, Phillip Meilinger, Vandenburg's biographer, found no mention of it in the General's memoirs. For more on Vandenburg see: Phillip S. Meilinger, Hoyt S. Vandenberg: The Life of a General (Bloomington, Indiana: Indiana University Press, 1989).

[179]When this study began in July 1991, the author believed the composite wing was a ridiculous idea and set out to prove the point by finding corroborating evidence in senior officers' memoirs. After ten months of exhaustive daily research, scouring hundreds of original documents in the USAF Historical Research Center, he was unable to turn up a shred of testimony from any composite wing member to support his original supposition. It is foolish to believe that none exists; however, if it does it would be so far in the minority opinion as to defy credibility.

[180]0ral History Interview with Colonel Herbert Carter, USAF (Ret.) by Author, Tuskegee, Al, 31 March 1992.

[181]Casey Anderson and Barbara Opall, "TAC: Composite Wing to Cost $42.1 Million," Air Force Times, No. 41, May 20,1991, 4.

[182]Mission-ready rates for specific units are classified. These fictitious figures are provided to illustrate the disparity that exists between mission-ready rates for various aircraft and should not be construed as representative of the F-4G, the F-l6, or Spangdah1em AB. However, the Air Force openly acknowledges mission-ready rates for second generation aircraft like the F-16 exceed earlier types like the F-4. The author has taken the liberty to reflect that particular disparity.

[183]Carter Interview, Tuskegee, Alabama, 31 March 1992.

[184]Graham, "One for All," Airman. 5

[185]JamesW. Canan, "Staying Power," Air Force Magazine, July 1991, 44-45.

[186]Ibid., 45.

[187]Ibid., 47.

[188]Ibid., 44-45,

[189]Ibid., 46

[190] "Instant Thunder," HQAF/XOOT Briefing to CINCCENT, No Date,

[191]House, Department of Defense Appropriations for 1992: Hearings before the Subcommittee of the Committee on Appropriations, Part 1, 102d Cong., 1st sess., 1991, 6.

[192]House, Department of Defense Appropriations for 1992: Hearings before the Subcommittee of the Committee on Appropriations, Part 5, 102d Cong., 1st sess, 1991, 469.

[193]Ibid., 486

[194]Casey Anderson and Barbara Opall, "TAC: Composite Wing to Cost $42.1 Million," May 20, 1991, 4

[195]McPeak, "For the Composite Wing," Airpower Journal. 12. General McPeak cites the following study Raymond A. Pyles and John Folkeson. "Composite Wings: Support Needs and Options" Santa Monica, CA: Rand Corporation, 1991. This publication cannot be cited without permission from RAND and therefore its contents cannot be discussed in this study However, the author believes RAND's 3% estimate to be conservative. The report is available in the Air University library; Call no. M-U 30352-71.

[196]Air Force Manual 1-1 (Volume I), "Basic Aerospace Doctrine of the United States Air Force," Department of the Air Force, Headquarters Air University, Maxwell AFB, Alabama. March 1992. 17-18.

[197]House, Department of Defense Appropriations for 1992: Hearings before the Subcommittee of the Committee on Appropriations, Part 1, 102d Cong., 1st sess., 1991, 590

[198]Pamphlet, "The Composite Air Wing--A Primer," Air Staff pamphlet, Washington, D.C., undated, p.4.

[199]"Composite Wing Philosophy." Headquarters Tactical Air Command Briefing, HQ TAC/XP, Langley AFB, Virginia, July 1991, Slide 3.

[200]Casey Anderson. "Mountain Home AFB Wing Detailed." Air Force Times, No.41, May 20.1991. 4.

[201]Background Paper, Major Sky King, Headquarters USAF/XOXWF, to General McPeak, subject: "Composite Wings: And Our "Proven Force" Experience," 23 July 1991.

[202]The author had nearly four years of experience exercising this system while assigned to the 401stTFW, Torrejon Air Base, Spain. Most fighter wings with worldwide mobility tasking deploy using this concept.

[203]McPeak. "For the Composite Wing," Airpower Journal, 10.

[204]AirForce Manual 1-1 (Volume I). "Basic Aerospace Doctrine of the United States Air Force," March 1992, 18.

[205]Benjamin Franklin Cooling, Case Studies in the Development of Close Air Support (Washington, D,C,: U.S. Government Printing Office, 1990), 161-185.

[206]Bernard L. Montgomery, "High Command in War," Office of the Assistant Chief of the Air Staff, Washington, D.C., 1943, 2.

[207]Neil Munro, "U.S, Air Force to Revamp C^2 Policy and Equipment," Defense News, Vol. 6, No, 44, November 4,1991, 4.

[208]1bid., 12.

CHAPTER X

SUMMARY

As we have seen, the composite wing is certainly not a modern innovation. The idea of creating a small air force at one base, under one commander, with all the assets needed to independently execute a highly complex combat mission is as old as the United States Air Force itself. In fact, the basic concept of composite or combined arms reaches back through history to Napoleon's day. America's first composite group evolved in France during World War I. Shortly after the war America placed composite groups in Hawaii, Panama, and the Philippines. During World War II, composite units saw action in nearly every theater, but predominantly in the Pacific where poor communications and vast expanses of ocean placed a premium on a unit's ability to act alone. In the 1950s the Air Force formed the Composite Air Strike Force, a concept in many ways nearly identical to General McPeak's vision of the composite wing. Later, at least three composite wings fought in Viet Nam, though none was officially branded "composite." Most recently, the Air Force employed two composite wings in the Persian Gulf War. Though never numerous, composite wings have compiled an interesting and colorful record.

Studying the composite wing's seventy-year history revealed some of its more enduring traits. On the positive side, composite wings have an almost unparalleled ability to conduct independent, highly secretive operations. Not surprisingly, they tend to operate most effectively when tailored for a specific task and focused on a narrowly defined objective. In addition, composite wings are extremely flexible because they possess assets that can perform a variety of tasks. However, on the negative side, composite wings have historically lacked combat striking power. They have also been logistically and operationally inefficient, which made them expensive and difficult to support. When all these characteristics were taken in balance the composite wing's vices usually outweighed its virtues and, for that reason, made its widespread use impractical. However, when effectiveness was the primary prerequisite for a mission, the composite wing often got the nod.

Today's changing threat, reduced budgets, and shrinking force structure demand increasingly effective combat units and the Air Force has once again given the composite wing the nod. Fortunately,

technology has seemingly overcome some of the composite wing's historical faults. Todays aircraft are more lethal and reliable than ever before, allowing more striking power to be carried by a smaller, less expensive force. Despite such advances, however, two potential problems still exist. First, the cost of forming new composite wings is still steep and to reduce spending the Air Force limited the numbers of aircraft going to each wing. By doing so, the planners may have unwittingly stripped the composite wings of the striking power they so desperately need. The second problem is purely doctrinal. Because composite wings are optimized for independent decentralized mission execution their focus is on tactical employment, not theater-wide objectives. With its forces and C^2 net optimized for decentralized execution the Air Force may be mistakenly denying itself the centralized control it needs to prosecute war at the operational level. In simpler terms, overly relying on the composite wing creates a danger of parceling air assets into "penny packets" or individual principalities in which the commanders are focused on battles and no one is watching the war. Neither of these shortcomings should prevent the composite wing experiments from continuing; however, Air Force commanders and leaders must be aware of the potential dangers and take action to rectify the problems.

Again, the purpose of this study is not to criticize the composite wing concept. Composite wings are a fact of life and we, as airmen, must do everything possible to make them work. However, that does not, mean we should sit back and accept the concept as a fait accompli, especially if serious flaws exist. Hopefully, this study, and ones like it, will better prepare airmen to organize, operate, or lead a composite wing. If nothing else, it forces each of us to ask some tough questions and face up to some potentially unpopular answers. To paraphrase Colonel Hornburg, " those who do not ask the difficult questions in the Air Force of today may have to doomed to fight in the flawed force structure of the future!

APPENDIX

This appendix contains a list of the significant units mentioned in this paper.

UNIT	LOCATION PERIOD	PERIOD
I Corps Observation Group	France	1918
4th Composite Group	Philippines	1920
5th Composite Group	Hawaii	1922
6th Composite Group	Panama Canal Zone	1922
23d Composite Group	Maxwell Field	1939
28th Composite Group	Alaska	1940
342d Composite Group	Iceland	1942
1st Composite Squadron	Ascension Island	1942
2d Composite Squadron	Fort Riley, Kansas	1943
3d Composite Squadron	Lawson AAF, Georgia	1943
1st Air Commando Group	Burma	1943
2d Air Commando Group	Philippines	1944
3d Air Commando Group	Philippines	1944
5230th Composite Rescue Group	Pacific	1944
5276th Composite Rescue Group	Pacific	1944
509th Composite Group	Tinian/Roswell AAF, N.M.	1945
477th Composite Group	Lockbourne AAF, Ohio	1945
Composite Air Strike Force (CASF)	Lebanon/Taiwan/Viet Nam	1956-64
1st Air Commando Group	Southeast Asia	1961
21st Composite Wing	Elmendorf AFB, Alaska	1966
432d Tactical Reconnaissance Wing	Udorn RT AFB, Thailand	1969
388th Tactical Fighter Wing	Korat RT AFB, Thailand	1972
51st Composite Wing	Osan AB, Republic of Korea	1972
24th Composite Wing	Panama Canal Zone	1975
52d Tactical Fighter Wing	Spangdahlem AB, Germany	1987
4th Tactical Fighter Wing (Provisional)	AI-Kharj, Saudi Arabia	1991
7440th Composite Wing (Provisional)	Incirlik AB, Turkey	1991
4th Wing	Seymour-Johnson AFB, N.C.	1992
366th Wing	Mountain Home AFB, Idaho	1992
23d Wing	Pope AFB, North Carolina	1992
347th Wing	Moody AFB, Georgia	1993

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