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Centralized Control and Decentralized Execution

A Catchphrase in Crisis?

Clint Hinote
Lieutenant Colonel, USAF



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Decentralized Execution**
A Catchphrase in Crisis?

CLINT HINOTE
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Air Force Research Institute
Maxwell Air Force Base, Alabama 36112-6026

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Foreword

Lt Col Clint Hinote looks at recent combat operations in Afghanistan and Iraq, interested particularly with the operational intersection of air and ground forces. He discovered a continuing dialog about one of the Air Force's major tenets—centralized control, decentralized execution. He suggests that all parties, both ground and air advocates, may need to reexamine the purpose and application of this doctrinal point. All services since World War II have been interested in this issue; everyone is seeking to make air/ground operations both effective and efficient. He points out that the issue between centralization and decentralization has an enduring quality, too, one that goes beyond air/ground operations, and he employs the famous theoretician, B. H. Liddell Hart, to suggest that centralization/decentralization is always a compromise in combat. Hinote calls on Airmen specifically to examine this issue because they need to communicate better its application in operations.

Hinote's primary premise is that Airmen need to understand that there is an inherent need for balance between centralization and decentralization. He again uses Hart to underline the message that there is a service proclivity to seek service points of view which preclude balance. Hinote takes it head-on. He examines the tenet, analyzing current criticisms in Iraq and Afghanistan, and recommends a three-step course: (1) evaluate the common language; (2) create doctrine to show Airmen the necessity for flexibility; and (3) apply the doctrine for a more flexible approach to command and control arrangements—moving execution away from dogma and back to sound doctrine.



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About the Author

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This project would not have been possible without the help and encouragement of the good folks at the Air Force Research Institute, especially Gen John Shaud, Col Mike Davis, Dr. Dan Mortensen, and Lt Col Paul Berg. I appreciate the help provided by the people at Air University Press in getting this manuscript ready for publishing. Finally, I would like to thank my two most important editors, Ren Hinote (my mother) and Myra Hinote (my wife), for their long hours of work correcting my many mistakes.

Centralized Control and Decentralized Execution

A Catchphrase in Crisis?

The Air Force's master tenet of centralized control, decentralized execution is in danger of becoming dogma. Airmen have difficulty communicating the meaning of this phrase in a joint setting.¹ This is partially due to our limited understanding of its history and the imprecise meaning of the words involved. Furthermore, the irregular conflicts in Afghanistan and Iraq (and the ongoing service debates in the Pacific) have demonstrated the need for a deeper understanding of this master tenet to advocate effectively for airpower solutions. We must get this right, as it is critical to maximizing airpower's potential. Getting it right, however, requires moving beyond sound bites and bumper stickers.

Airmen need to step back and examine the primary issues in play. The tension between centralization and decentralization is not new, nor is it limited to the command and control of airpower. Something about airpower (including space and cyberspace operations) alters the discussion, however. Indeed, that the debate between the centralization and decentralization of airpower has surfaced repeatedly in numerous cultures and contexts points to the enduring nature of the question.

No simple answer abounds. We cannot say that air operations should always be centralized or decentralized, because any such assertion withers before logic and evidence. This issue is what B. H. Liddell Hart calls a *duality*: "Like a coin, it has two faces. Hence the need for a well-calculated compromise as a means to reconciliation."² In other words, there is a trade-off between centralization and decentralization in any military operation. As with any trade-off, we must appreciate the factors involved to achieve the proper balance (fig.1). Unfortunately, Liddell Hart warns us that achieving this balance is difficult: "The idea of preserving a broad and balanced point of view is anathema to the mass, who crave for a slogan and detest the complexities of independent thought."³



A deeper truth to which Foch and other disciples of Clausewitz did not penetrate fully is that in war every problem, and every principle, is a duality. Like a coin, it has two faces. Hence the need for a well-calculated compromise as a means to reconciliation.

B. H. Liddell Hart, *Strategy*

Figure 1. A deeper truth. (Reprinted from Army Command and General Staff College Combined Arms Research Library at <http://www-cgsc.army.mil/carl/resources/csi/hart/hart.asp>.)

Salvaging the Master Tenet

This monograph searches for the “broad and balanced point of view” behind the familiar, yet still controversial, slogan of centralized control and decentralized execution. It begins with the history behind this tenet, including both general military operations and specific air operations. Given this context, this monograph analyzes the tenet to determine what it really means. It proceeds to explain some traditional criticisms of the tenet, many of which have been made by airmen. It continues to examine the challenges to the master tenet that have arisen in the current operational environment, including ongoing operations in Iraq and Afghanistan.

In response to these challenges, this monograph concludes with three recommendations that will help clarify the tenet and

reclaim its original intent. First, we should examine potential changes to the language we choose to summarize the tenet. Second, we should create doctrine that teaches airmen how to apply the tenet with the flexibility that is inherent in airpower itself. Third, we should apply this updated doctrine and adopt a more flexible approach to our command and control arrangements in ongoing operations. Not only will these improvements help to salvage the master tenet from sound-bite status, they also will be in keeping with the best practices established by one of our most successful air commanders—Gen George Kenney—who served as Gen Douglas MacArthur’s primary air commander in the Pacific during World War II. We should follow General Kenney’s example and maintain his flexibility of intellect if we want to move centralized control and decentralized execution away from dogma and back to sound doctrine.

Historical Context and an Age-Old Question

Once military forces grew in diversity so that leaders could assign separate tasks to subordinate groups, commanders had to confront a tension between centralization and decentralization.⁴ Thoughtful commanders have recognized that this is not an either-or proposition as much as a question of balance. As Martin van Creveld writes, centralization and decentralization “are not so much opposed to each other as perversely interlocking.”⁵ When commanders exerted centralized control at higher levels, their subordinates’ options were restricted. This led to slower reactions and, at times, paralysis. Alternatively, preserving freedom of action at the lower levels reduced the options available to the overall commander.

A historic example helps to illustrate this point. In the US Civil War, an army commander could choose to keep his cavalry on a tight leash or give his subordinate commander considerable freedom of action. The tight leash had the advantage of allowing the overall commander to direct the cavalry’s efforts to suit his most pressing needs, yet it limited operational tempo and precluded opportunities to exploit success. The opposite was also true. Empowerment allowed for a higher tempo guided by broad mission-type orders, yet it greatly increased the risk that the cavalry would not be available at a critical place or time.

Such was the case when Gen Robert E. Lee issued broad discretionary orders to his subordinate commander, J. E. B. Stuart, and then suffered through the absence of Stuart's cavalry brigade in the critical opening stages of Gettysburg (fig. 2).

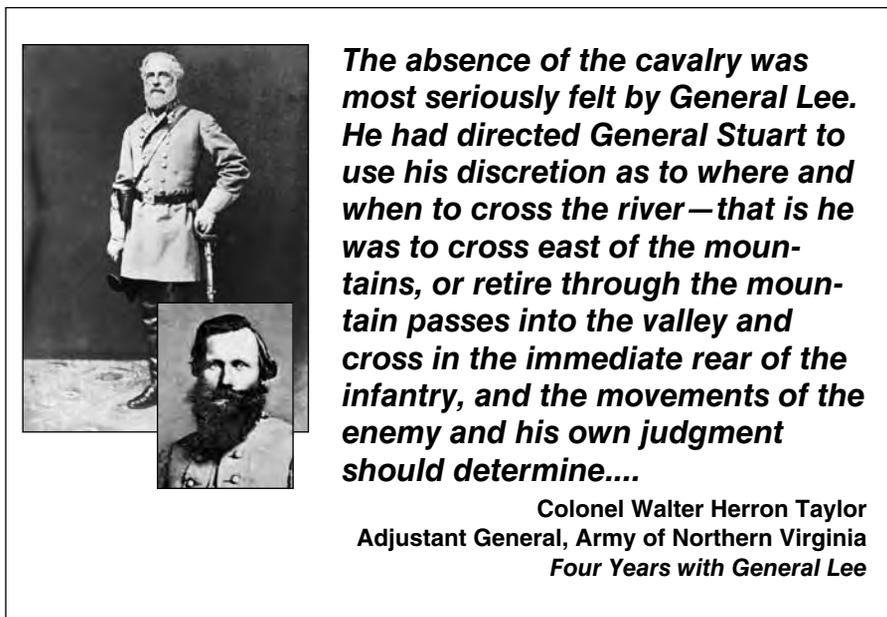


Figure 2. The absence of cavalry. (Reprinted from <http://www.army.mil/images/1865/04/09/03508/> and <http://www.msc.navy.mil/mpstwo/stuart.htm>.)

This tension between centralization and decentralization is not limited to land warfare. In his landmark work, *The Influence of Sea Power upon History, 1660–1783*, Alfred Thayer Mahan presents a remarkable discussion of this tension at sea. In this section, Mahan finds himself criticizing the great British admiral Horatio Nelson in his conduct during the Battle of Trafalgar (a fact that clearly makes him uncomfortable).⁶ Nelson chose to position his ship, the HMS *Victory*, in the lead of one of two columns, while his second in command, Adm Cuthbert Collingwood, led the other. Mahan observes that this decision had an irreversible consequence. Nelson would have to rely on decentralized execution by his subordinate captains once the battle began (fig. 3). As soon as the two columns smashed into

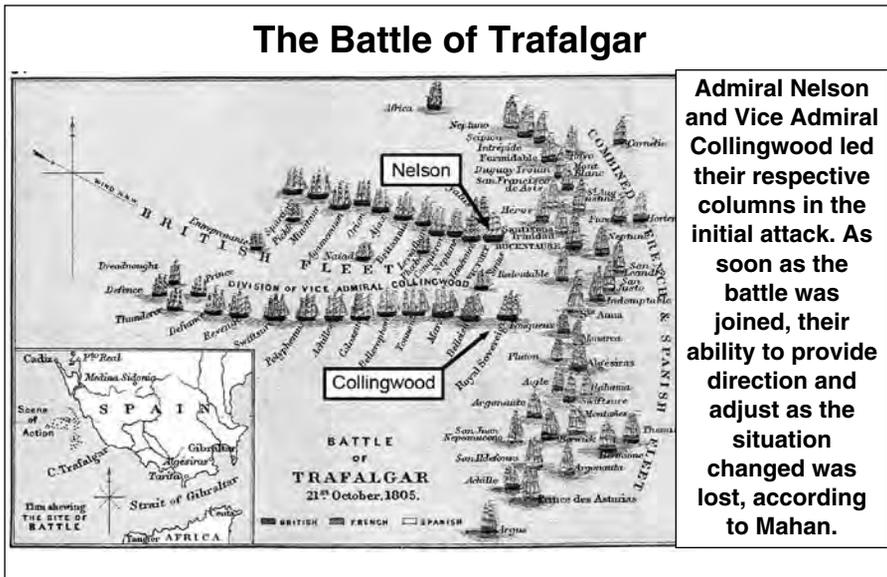


Figure 3. The Battle of Trafalgar. (Reprinted from <http://commons.wikimedia.org/wiki/image:TrafalgarBattle.jpg>.)

the French line, Mahan explains that Nelson and Collingwood were “speedily obliterated, as admirals, in the smoke of the battle, leaving to those who came after them no guidance or control except the brilliancy of their courage and example.”⁷

Mahan proposes that it would have been better had Nelson and Collingwood been positioned with the reserve (essentially in the rear of the columns), as this would have given them the ability to adjust for the unexpected until “the latest possible moment.”⁸ In analyzing warfare at sea, Mahan observes that there are two “moments of greatest importance in a sea-fight”: the initial attack and the engagement of the reserve.⁹ The fundamental problem, notes Mahan, is the commander cannot be in two places at once, even though “you want the spirit of the leader at both extremities.” The commander must either lead the initial attack and trust that subordinates will do the right thing, or the commander must wait with the reserve and give up a measure of control in the initial stages of the battle. Most military commanders have experienced similar tensions between centralization and decentralization, and several authors

have addressed these tensions in informative works such as Martin van Creveld's *Command in War*. The majority view agrees that decentralization deserves the benefit of the doubt. As an example of this view, van Creveld concludes his work with a resounding recommendation in favor of decentralization. "Returning now to the two basic ways of coping with uncertainty, centralization and decentralization," writes van Creveld, "if twenty-five centuries of historical experience are any guide, the second way will be superior to the first."¹⁰

Additionally, there is wide agreement in US military doctrine that decentralized operations are most effective in achieving the tempo required for success on the modern battlefield. For example, Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States*, has this guidance for US commanders:

Unity of effort over complex operations is made possible through decentralized execution of centralized, overarching plans. Advances in information systems and communications may enhance the situational awareness (SA) and understanding of tactical CDRs [commanders], subordinate JFCs [joint force commanders], CCDRs [combatant commanders], and even the national leadership. These technological advances increase the potential for superiors, once focused solely on strategic and operational decision making, to assert themselves at the tactical level. While this will be their prerogative, decentralized execution remains a basic C² [command and control] tenet of joint operations.¹¹

Army Field Manual (FM) 3-0, *Operations*, follows suit with this description of the concept of mission command:

The Army's preferred method of exercising command and control is mission command. **Mission command is the conduct of military operations through decentralized execution based on mission orders. Successful mission command demands that subordinate leaders at all echelons exercise disciplined initiative, acting aggressively and independently to accomplish the mission within the commander's intent.** Mission command gives subordinates the greatest possible freedom of action. Commanders focus their orders on the purpose of the operation rather than on the details of how to perform assigned tasks. They delegate most decisions to subordinates. This minimizes detailed control and empowers subordinates' initiative. Mission command emphasizes timely decision making, understanding the higher commander's intent, and clearly identifying the subordinates' tasks necessary to achieve the desired end state. It improves subordinates' ability to act effectively in fluid, chaotic situations.¹² (emphasis in original)

These statements suggest that the Air Force's master tenet of centralized control and decentralized execution may be out of step with the prevailing body of thought. There is more to the story, however. While the US military has firmly established a preference for decentralization, there appears to be something about the command and control of airpower—including space and cyberspace operations—that adds a new element to this discussion. Moreover, it may even tip the balance the opposite way.

A Short History of the Master Tenet

The tension between centralization and decentralization in commanding air forces emerged as early as World War I. In the Great War, the airplane was an unfamiliar weapon, and air resources were often broken up into small groups to provide direct support for, and in some cases be subordinate to, ground commanders. Lee Kennett, author of *The First Air War*, writes that this seemed to make good sense, saying, "It quickly became apparent that the tasks of aerial observation and artillery spotting were more effectively done when air units were paired with ground elements on a stable and reasonably permanent basis. An artillery battery and an aerial observation team worked more smoothly and harmoniously as they made acquaintance and developed mutual confidence."¹³

At other times, however, it became apparent that centralized control was more effective when dealing with large formations and relatively independent lines of operation. Such was the case when over 1,500 aircraft flew under the operational control of Brig Gen William "Billy" Mitchell in support of Gen John Pershing's drive to Saint-Mihiel.¹⁴ In addition, friction quickly emerged between airmen and soldiers. Airmen grew frustrated with a lack of understanding of airpower employment considerations by ground commanders, and they desired autonomy.¹⁵ These tensions were never fully resolved during the war, and after the armistice, progress remained limited.

This lack of progress proved costly, as these same issues resurfaced during the Allies' North Africa campaign in World War II. Initially, the Allies divided their air forces into multiple organizations with separate chains of command. This decreased

airpower's effectiveness against the German Luftwaffe and resulted in the loss of numerous Allied soldiers to aerial attack.¹⁶ This debacle led to the famous line about penny packets coined by Air Marshal Sir Arthur W. Tedder, who served as a senior Allied air commander in North Africa and argued that "if your organization is such that your air power is divided up into separate packets and there is no overall unity of command at the top, once again you will lose your powers of concentration. Airpower in penny packets is worse than useless. It fritters away and achieves nothing. The old fable of the bundle of faggots compared with the individual stick is abundantly true of airpower. Its strength lies in unity" (fig. 4).¹⁷ The calamity of North Africa also led to the first assertion in official US doctrine about centralized control of airpower, when this emphatic declaration appeared in FM 100-20, *Command and Employment of Airpower*, in July 1943:

CONTROL OF AVAILABLE AIR POWER MUST BE CENTRALIZED AND COMMAND MUST BE EXERCISED THROUGH THE AIR FORCE COMMANDER IF THIS INHERENT FLEXIBILITY AND ABILITY TO DELIVER A DECISIVE BLOW ARE TO BE FULLY EXPLOITED. . . . THE SUPERIOR COMMANDER WILL NOT ATTACH ARMY AIR FORCES TO UNITS OF THE GROUND FORCES UNDER HIS COMMAND EXCEPT WHEN SUCH GROUND FORCE UNITS ARE OPERATING INDEPENDENTLY OR ARE ISOLATED BY DISTANCE OR LACK OF COMMUNICATION.¹⁸ [all caps in original]

There was no mention of the value of decentralization in this landmark document, but this would change after the Air Force attained independent status in 1947.

In its first basic doctrine document, which was not released until 1953, the Air Force presented a more balanced view, reaffirming the value of centralization while promoting a degree of decentralization, and stated that "assignment of control of forces at any level other than that which is able to exploit fully their weapons is contrary to accepted military doctrine. The effective utilization of military forces requires that command systems be established which will guarantee both centralized overall direction and decentralized control of operations under appropriate subordinate commanders."¹⁹

Note that, in this document, the Air Force changed the wording of its most basic belief about the command of air-

... if your organization is such that your air power is divided up into separate packets and there is no overall unity of command at the top, once again you will lose your powers of concentration. Air power in penny packets is worse than useless. It fritters away and achieves nothing. The old fable of the bundle of faggots compared with the individual stick is abundantly true of air power. Its strength lies in unity.

**Air Marshal Sir Arthur W. Tedder
“Air, Land, and Sea Warfare”**



Figure 4. Divided airpower. (Reprinted from http://en.wikipedia.org/wiki/Arthur_Tedder,_1st_Baron_Tedder)

power from *centralized control* (FM 100-20) to a combination of *centralized overall direction* and *decentralized control* (Air Force Manual [AFMAN] 1-2, *United States Air Force Basic Doctrine*). This development hinted at the difficulty the Air Force would experience over the years in finding the right language to describe what it believed about the duality of centralization and decentralization.

The Air Force continued to modify this language after Vietnam. Air Force leaders perceived the way that Pres. Lyndon B. Johnson delved into tactical details of air operations to be “centralized control run amuck”; so, it strengthened its language concerning decentralization.²⁰ Consequently, the 1971 version of *Air Force Basic Doctrine* contained the guidance that “aerospace forces must be centrally allocated and directed at a level which permits exploitation of diverse capabilities in support of overall objectives. Concurrently, mission control and execution of specific tasks must be decentralized to a level which permits maximum responsiveness to local conditions and requirements. These complementary concepts—centralized allocation

and direction and decentralized control and execution—are fundamental to the effective application of aerospace power.”²¹

Also note that *control* was still associated with the adjective *decentralized*. By 1975, however, the language evolved to something that currently looks quite familiar: “The basic principles of centralized control, decentralized execution, and coordinated effort are fundamental to the success of aerospace operations.”²²

Although this wording has remained essentially unchanged since the 1975 document, Air Force doctrine writers have found it necessary to expound upon the meaning of *centralized control* and *decentralized execution* numerous times in the intervening years. The latest attempts to clarify the confusion surrounding these terms appear later.

One more aspect of the evolution of the phrase deserves mention. A major effort to encourage jointness among the services culminated in the Goldwater-Nichols Act of 1986. This law mandated the establishment of permanent regional commanders with authority to exercise command over all US military forces in their area of responsibility. The construct was put to a major test when, in 1990, Saddam Hussein initiated the Iraqi invasion of Kuwait that led to Operation Desert Storm in 1991. To the Air Force, the effectiveness of airpower in Desert Storm proved that the appropriate level of centralized control was the senior airman in-theater, also known as the joint forces air component commander (JFACC). Consequently, the 1992 version of AFMAN 1-1, *Basic Aerospace Doctrine of the United States Air Force*, contained this assertion:

Since 1943, the most vexing control issue has been the level at which control should be centralized, including the question as to whether all aerospace power (Air Force, Army, Navy, and Marine Corps) should fall under a single aerospace component commander. Too much or too little centralization has proven to be counterproductive, the former delaying responsiveness and the latter leading to dissipation of effort. Based on experience from World War II, Korea, Vietnam, and Operation Desert Storm, the most effective and efficient scheme is control of all aerospace assets by a single Joint Force Air Component Commander responsible for integrating employment of all aerospace forces within a theater of operations.²³

To Airmen, the theater level was the appropriate level to exercise centralized command and control of air operations, and

the JFACC was assumed to be the senior airman in a theater capable of “integrating employment of all aerospace forces” within this theater.

In addition, both Air Force and joint doctrine evolved to include the concepts of *apportionment* (the distribution of scarce resources for planning purposes) and *allocation* (the translation of apportionment plans to actual numbers for execution).²⁴ In a joint force with air assets that can accomplish multiple missions, it is necessary to apportion air assets to different mission sets in the planning process. For example, such modern attack fighters as the F-16 can accomplish air superiority, suppression of enemy air defenses, close air support, interdiction, and strategic attack missions. In the planning process, someone has to decide between these various missions. Joint doctrine now makes the JFACC responsible for recommending a daily apportionment plan to the joint force commander for approval.²⁵ This recommendation identifies air assets and the missions they will accomplish by “percentage, priority, weight of effort, or some other appropriate means.”²⁶ The joint force commander then has the final say regarding what assigned assets will do (fig. 5).²⁷ Once this decision has been made, the JFACC and his planning staff allocate air assets by translating the apportionment decisions into actual numbers of sorties.²⁸

With this scenario in mind, the issue of command and control of air operations in a joint environment seemed to be resolved. Unfortunately, one problem remained. Communication technologies advanced at an astonishingly rapid pace in the 1990s, and the Air Force integrated many of these technologies into the JFACC’s primary command and control node, the air operations center (AOC). With these advances in hand, it became possible—even easy—for the JFACC, a commander at the operational level of war, to become personally involved in tactical execution, even to the point of directing the actions of individual aircraft. Indeed, this became a reality in 1995 during Operation Deliberate Force in Bosnia, where a single JFACC directed air operations down to the tactical level.²⁹ For many airmen, this was troublesome, and doctrine revisions through 2003 reflect an uneasiness concerning the degree of centralization made possible by a mature AOC enabled by modern communication technologies.



To the Air Force, the effectiveness of airpower in DESERT STORM proved that the appropriate level of centralized control was the senior airman in-theater, also known as the Joint Forces Air Component Commander (JFACC).

Above: General Horner, JFACC for Operation DESERT STORM

Right: Combined Air Operations Center, Southwest Asia



Figure 5. Effectiveness of airpower. (Reprinted from <http://www.af.mil/photos/index.asp?galleryID=5331&page=2> and <http://hq.afnews.af.mil/hometown/hometownlink%20photos/slides/caoc2.htm>.)

This was the situation as the Air Force entered the conflict in Afghanistan in 2001. The service believed that it had struck the proper balance between centralization and decentralization and that it had found the right level of centralization in the senior airman in-theater—the JFACC. It had worked tirelessly to establish this concept firmly in joint doctrine. While some airmen worried that the JFACC would extend his reach into tactics, they also believed that was a small price to pay for the benefits of centralized command and control. Operations Enduring Freedom and Iraqi Freedom, however, would present new challenges to the Air Force and its belief in the master tenet. Before considering that story, however, it is useful to analyze the essential elements of centralized control and decentralized execution and present several traditional criticisms of the concept.

Breaking Down the Master Tenet and Understanding Fundamental Issues

Two important aspects of centralized control and decentralized execution lie beneath the surface. The first aspect focuses on the relationship of centralization to the independence of airpower. As noted in the beginning of this monograph, the tension between centralization and decentralization is a recurring one in military operations, but the development of airpower added a new ingredient to the mix that changed the flavor of the debate. As traditional military officers learned to fly and command air formations, they grew to believe that airpower could change the nature of military operations. It could not reach its potential, however, when tightly controlled by ground commanders. This led them to conclude that considering airpower an adjunct to ground power would hinder its development in the same way that considering tanks as an arm of the infantry hindered the development of armored warfare.³⁰ Such airpower advocates as Billy Mitchell concluded that independence was necessary for airpower to develop its potential as a coequal partner with ground and maritime power.³¹ As a result, the issue of centralization and decentralization could never be divorced from the issue of airpower's independence. This explains why discussions in air doctrine have consistently asserted that control of air operations must be centralized under an airman. When the Goldwater-Nichols Act created a construct that centralized all control in a joint officer who would not necessarily be an airman, the Air Force quickly developed the concept of a JFACC and put great effort into equipping an AOC that would allow this air officer to centrally control air operations for the joint force commander.

The second aspect that is often absent from the discussion is economic—the demand for airpower is high in modern warfare, and the supply is relatively low. Were this not the case, there would be little need for the master tenet. With the availability of plentiful air assets, commanders could decentralize with little loss of effectiveness. Conceivably, each ground commander could be assigned discrete sets of air assets, and there is evidence to suggest that this would be quite effective, if somewhat inefficient. Alternatively, if demand for airpower were low, few

would care how it is commanded and controlled. The high demand for airpower testifies to its perceived value.

Limited supply, on the other hand, is at least partially a result of choices made by Airmen. As modern airplanes became more capable—and more expensive—Air Force leaders generally chose quality over quantity. These choices led to limited numbers of capable aircraft, and there is solid evidence that this has been a winning formula in traditional conflicts. In the irregular conflicts of Iraq and Afghanistan, however, it has led to tension between the Air Force and the Army, a situation discussed later. Before considering these modern conflicts, it is important to break down the master tenet into its four essential elements.

Essential Elements of the Master Tenet

First, centralized command and control promotes effectiveness and preserves flexibility at the strategic and operational levels of war. The first essential element of the master tenet is centralization. Airmen believe that airpower should be commanded centrally because elements of airpower—including those in air, space, and cyberspace—can be mixed to achieve greater effects than could be accomplished through multiple independent operations. Moreover, airpower can be shifted quickly across the operational environment to respond to changing conditions. Centralization, when combined with the principle of unity of command, requires airpower to be directed by an officer who enjoys a span of control that roughly matches the geographical range of the air assets available. Centralized command and control precludes the dilution and penny packing of airpower that has limited its effectiveness.

It is important to explain why we use the term *command and control* instead of simply *control*. As will be discussed later, the term *control* is confusing. In fact, this may be the primary criticism of the sound bite we use to describe the master tenet. A major reason for this is the continued influence of Martin van Creveld's historical study, *Command in War*. In the opening paragraph of the book, van Creveld explains that he is writing about C³—command, control, and communications—and to streamline the book, he chooses to use the word *command* to

summarize C³.³² Van Crevelde also makes it clear that, in discussing command, he is discussing everything a military force needs, both to exist and to operate.³³ He writes that “The responsibilities of command are commonly divided into two parts. First, command must arrange and coordinate everything an army needs to exist—its food supply, its sanitary system, its system of military justice, and so on. Second, command enables the army to carry out its proper mission, . . . to this part of command belong, for example, the gathering of intelligence and the planning and monitoring of operations.”³⁴ Our joint definition of *command* follows this structure closely.³⁵

One problem surfaced with van Crevelde’s approach, however. *Command in War* was published in 1985, the year before Congress passed the Goldwater-Nichols Department of Defense Reorganization Act of 1986. While van Crevelde included in command everything a force needed to exist—that is, what we call organizing, training, and equipping—together with the things a force needed to conduct operations, the US military was undergoing a fundamental reorganization that, in essence, separated these functions into two distinct chains of command. Goldwater-Nichols mandated that the services organize, train, and equip their forces, but the combatant commanders would direct operations with these forces. This meant that in the US military the word *command* would become a term full of nuance and qualification, because Goldwater-Nichols split van Crevelde’s concept in halves.

Because only the president and the secretary of defense exercised true *command*, usage of the term *control* increased exponentially. The joint definition of the term *control* is vague: “Authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations.”³⁶ The US military uses this malleable term to describe many functions and authorities, including administrative control, operational control, tactical control, and close control. The distinctions between these concepts are so large that our senior leaders often require refresher training before they attend joint leadership courses. Little wonder, then, that our Airmen have problems explaining centralized control in a joint setting.

Despite the vague use of both *command* and *control* as military terms, the common understanding of *command and control* for military operations is relatively clear. Command and control is “The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Also called C².”³⁷

Command and control involves providing the things forces need to operate; that is, it is limited to the second half of van Creveld’s concept of command. Note that a commander does not have to be assigned forces to exercise command and control over them. These forces can be attached as well. This means a JFACC who is a US Air Force officer can command and control US Navy assets for as long as they are attached to the air component by the overall joint force commander (and a US Navy officer could exercise command and control of US Air Force assets, also). Note also the range of functions comprised within command and control, including “planning, directing, coordinating, and controlling.” Airmen believe that in airpower operations, these things should be accomplished centrally at certain times. Therefore, in our master tenet, the term *command and control* best answers the question, In air operations, what should be centralized?

For many forms of airpower, command and control at the theater level is appropriate, as almost all fixed-wing aircraft have a range of hundreds of miles (or more, if given access to air refueling). This explains why centralized command and control is so closely aligned with the JFACC concept. The JFACC, as the theater-level air commander, is the appropriate authority to exercise command and control of air operations because his focus generally matches the range of most fixed-wing air assets. Some forms of airpower, however, have a truly global reach, as do assets that operate in space and cyberspace. This shows why the US strategic and transportation commands exercise command and control of those assets.³⁸

Theater and global areas of operation are generally associated with the operational and strategic levels of war, although the association can be problematic in some circumstances. It is easier to defend the proposition that elements of airpower, when centrally planned, directed, coordinated, and controlled, can work together to have effects that are operational and strategic in nature. Because of this relationship between centralization and the higher levels of war, the first essential element of the master tenet is more accurately worded as centralized command and control of airpower maximizes effectiveness and preserves flexibility at the strategic and operational levels of war.

Second, an airman should command and control air operations. As explained earlier, Airmen believe that airpower should be commanded and controlled by an airman to maximize its contribution to joint operations. Like surface forces, air, space, and cyberspace forces have unique requirements reflected in doctrine, organization, training, and equipment. Furthermore, airpower is often most effective when employed in ways that distinguish it from other forms of military power. Therefore, Airmen generally believe that only other airmen (including air operators in the Air Force, Marine Corps, and Navy) have the necessary background and experience to get the most out of airpower.

Airmen often write about these first two essential elements so that it becomes difficult to separate them. For example, Col Phillip Meilinger explains his eighth of *10 Propositions Regarding Airpower*:

Airpower's unique characteristics necessitate that it be centrally controlled by airmen. . . . Airmen fear that if surface commanders controlled airpower they would divide it to support their own operations to the detriment of the overall theater campaign. However, in a typical campaign operations ebb and flow; at times one sector is heavily engaged or maneuvering, while at other times it is static and quiescent—and this status is often determined by the enemy. As a result, if airpower is parceled out it may be sitting idle in one location while flying continuously in another. Although this is also true of ground units, they generally have only a limited ability to assist their comrades on another part of the front. Airpower can quickly intervene over an entire theater, regardless of whether it is used for strategic or tactical purposes. To mete it out to different surface commanders would make it virtually impossible to shift airpower, rapidly and efficiently, from one area in the theater to another to maximize its effectiveness.³⁹

Combining the first two elements of the master tenet makes it more accurate to say that airmen believe that centralized command and control of airpower by an airman maximizes effectiveness and preserves flexibility at the strategic and operational levels of war.

Third, decentralized execution of air operations promotes effectiveness and preserves flexibility at the tactical level of war. The second half of the master tenet acknowledges that a degree of decentralization helps to maintain tactical flexibility and helps to increase the tempo of operations, making it more difficult for the enemy to keep pace. As such, this element of the master tenet reflects current thinking in joint doctrine and that of the other services, particularly the US Army and Marine Corps. All services believe in decentralized execution, defined as “delegation of execution authority to subordinate commanders.”⁴⁰ Recognize that decentralized execution provides benefits primarily at the tactical level, as reaction time is most critical in tactical operations. Over time, however, the benefits of decentralization across many tactical events should produce effects that promote operational and strategic objectives. Given this discussion, it is most accurate to combine the four essential elements and word the *master tenet* in this way: *centralized command and control of airpower by an airman promotes effectiveness and preserves flexibility at the strategic and operational levels of war, while decentralized execution of air operations promotes effectiveness and preserves flexibility at the tactical level* (fig. 6).

Fourth, commanders must balance centralized command and control and decentralized execution as they connect tactical operations to operational and strategic objectives. This is the critical piece of the master tenet that remains unstated in our doctrine. Tactical operations cannot become an end unto themselves. They must be connected to operational and strategic objectives. All senior commanders must accomplish this balancing act.

Traditional Criticisms of the Master Tenet

Centralized control and decentralized execution is controversial both among airmen and among those who have other perspectives (fig. 7). Airmen must understand these traditional criticisms.

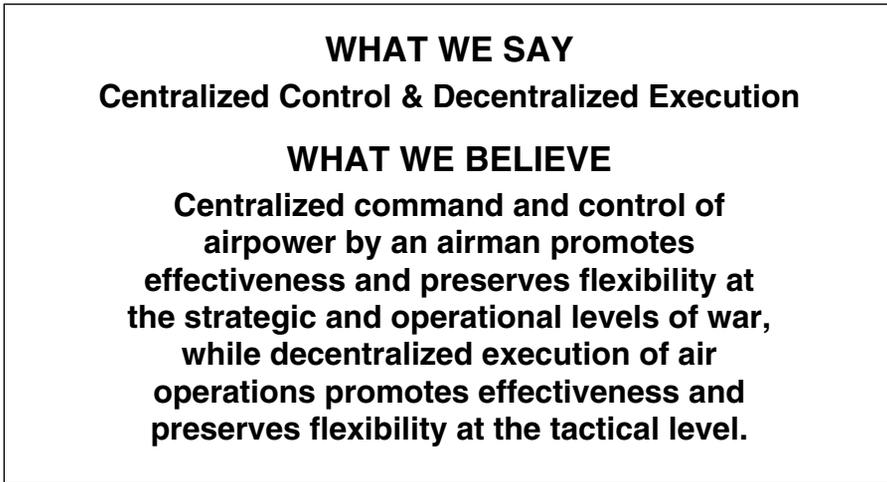


Figure 6. What we say. (Compiled by the author.)

Critics of the master tenet have made the following assertions regarding centralized control and decentralized execution.

The first of these five criticisms shows how the master tenet uses vague terminology. This is a criticism of the inexact nature of the words *control* and *execution*. Specifically, many question the distinction between them. Officers from other services have expressed their bewilderment at these word choices.

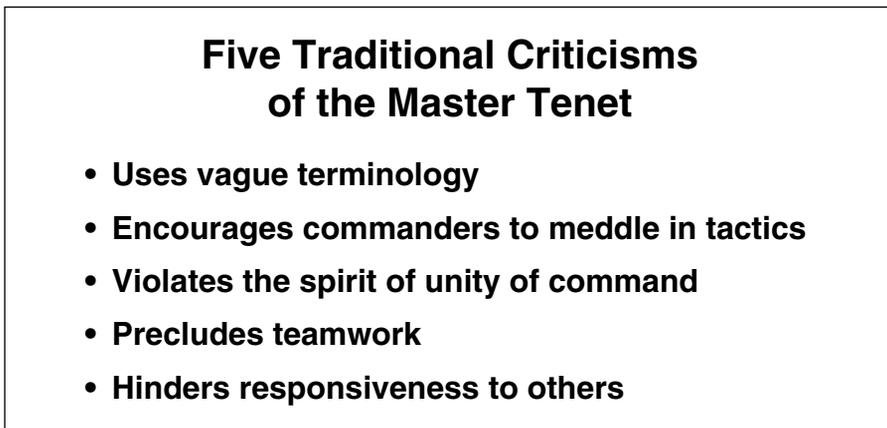


Figure 7. Five traditional criticisms of the master tenet. (Compiled by the author.)

For example, US Army major Mark Davis argues that “from a joint perspective, centralized control and decentralized execution is illogical and cannot exist together because control is about execution and is inherent in command, as explained in Joint Publication (JP) 3-0, *Doctrine for Joint Operations*.”⁴¹

Not only do the terms *control* and *execution* confuse outsiders, but they also confound airmen. It does not help that Air Force doctrine recommended both centralized control and decentralized control as they evolved. Nor does it help that control—defined in joint doctrine as “authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations”—seems to carry with it the authority to execute.⁴² Are the two terms distinct, or is one inherent in the other? The lack of a clear answer remains a valid criticism of the master tenet.

The second criticism of the master tenet encourages commanders to meddle in tactics. Perhaps the most widespread criticism of centralized control and decentralized execution—especially among Airmen in the US Air Force—is that, by emphasizing the primacy of the JFACC in controlling air operations, it opens the door for JFACCs to exercise control down to the lowest tactical levels. In fact, the most recent draft of Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, addresses this tendency directly, stipulating that “some recent operations have highlighted an apparent disconnect regarding the Airman’s stated preference for decentralized execution. Airmen should not misconstrue a given situation with what we generally believe about decentralized execution. In some scenarios, a relatively low pace of activity may allow senior leaders to more closely monitor ongoing operations. Discipline demands that senior leaders resist the temptation to get involved with execution decisions that are normally best left to subordinate commanders and forward decision makers.”⁴³ Despite this warning, future air commanders will likely be tempted to make decisions at the tactical level, and nothing in the master tenet specifically precludes them from doing so.

The third criticism of the master tenet violates the spirit of unity of command. While the master tenet promotes unity of effort from a functional perspective, some argue that it violates the spirit behind the principle of unity of command. Joint doc-

trine asserts that unity of command is related to objective, not to function. For example, JP 3-0, *Doctrine for Joint Operation*, states, “The purpose of unity of command is to ensure unity of effort under one responsible commander for every objective.”⁴⁴ This implies that the commander responsible for the objective should exercise control over the resources required to achieve it. This assertion contradicts the master tenet’s call for unity of effort for the function of airpower. Indeed, a strict adherence to the concept of unity of command as stated in joint doctrine would encourage the dilution of airpower that Airmen passionately oppose.

The fourth criticism of the master tenet precludes teamwork. In a related criticism, some hold that by advocating airpower operations that shift quickly—and sometimes without warning for all involved—the master tenet inhibits the development of close working relationships between airmen and members of other services. Ensuring flexibility at the operational level tends to preclude a predictable relationship at the tactical level, and this hinders the building of trust that results from working with the same people daily. Veteran officers understand that trust acts as the catalyst for teamwork in joint operations and is critical for success. Lt Gen Elwood “Pete” Quesada eloquently makes this point when reflecting on his experiences in World War II, saying, “Of all the lessons we learned about tactical air operations, perhaps the most important is that the air commander, his group, and squadron commanders must have a sincere desire to become part of the ground team. The Army must, of course, have the same dedication to reciprocate. This close liaison can only come from close day-to-day contact—especially at command levels; there must be almost instantaneous communication between ground and air and through all the chain of command.”⁴⁵ Therefore, a negative consequence of centralized control of airpower can be a lack of daily contact that would come from assigning or attaching air assets to individual commanders on a semipermanent basis.

The fifth criticism of the master tenet hinders responsiveness to other commanders. Yet another criticism is that a JFACC who exercises centralized control through an AOC cannot be responsive enough to the ever-changing nature of tacti-

cal operations. It chafes ground commanders that they need to ask for airpower through an AOC that is often located hundreds of miles away. It really frustrates them when it takes a long time for their request to be processed and acted upon (and a few minutes is a long time when under enemy fire). It drives ground commanders nuts when they make the request and wait for an answer only to have the request denied while their soldiers remain in harm's way. Some of this frustration arises from a lack of understanding of the tactical air control system and the priorities of the overall joint commander. It is real nevertheless, and it often expresses itself in an accusation that "the Air Force isn't supporting us!"

While these criticisms have surfaced in historical situations and contexts, they have also emerged in today's environment. Even though there has been a great emphasis on joint warfare since the passage of Goldwater-Nicholls in the mid-1980s, many seams and disconnects exist between the services. This has been especially true in the US Central Command (USCENT-COM) area of responsibility (AOR), which contains ongoing operations in Iraq and Afghanistan.

Challenges in Iraq and Afghanistan

The irregular conflicts in Iraq and Afghanistan have presented numerous challenges to centralized control and decentralized execution. Initially, operations in Iraq and Afghanistan went well from an air perspective, and Airmen followed the master tenet faithfully. The combined forces air component commander (CFACC) controlled air operations from the AOC, and despite the expected fog and friction, airpower succeeded in helping to achieve the overall objectives.⁴⁶ As the nature of operations changed from traditional to irregular, however, old tensions resurfaced and new ones arose.

The following paragraphs discuss how the nature of the conflicts in Iraq and Afghanistan, when coupled with difficult command relationships and nondoctrinal apportionment processes, caused many within the Air Force to question whether the master tenet had been reduced to a stale catchphrase. Some outside the service grew to believe that it was flat wrong.

Difficult Command Relationships in US Central Command

A main contributor to these tensions was a confusing and contradictory set of command relationships between various war-fighting organizations. In keeping with the master tenet, Airmen insisted that airpower be centrally controlled throughout the theater by the CFACC. The commander of USCENTCOM agreed to this construct, but the commander needed to specify a command relationship between the CFACC and other war-fighting organizations that needed airpower, including the Multinational Forces-Iraq (MNF-I) and the Combined Forces Command-Afghanistan. The commander did this by directing a series of supported/supporting relationships where the CFACC would offer direct support to the others as needed. This scenario allowed the USCENTCOM commander to remain engaged at the strategic level of war while ensuring that subordinate commanders had access to airpower effects. It was an attempt to encourage increased flexibility by decentralizing operations.

According to this arrangement, the CFACC was expected to support conventional operations in Iraq, Afghanistan, and the Horn of Africa. The commander was also expected to support antiterrorism operations throughout the USCENTCOM AOR, including within Iraq and Afghanistan. These operations were usually conducted by special operations forces, and the support requests came through separate channels. Added to this difficulty, in that volatile area of the world, are always dangerous contingencies that occupy the minds of commanders and their planning staffs. So the CFACC constantly had to plan for contingencies, sometimes with short notice. Finally, the CFACC was also designated the commander of USCENTCOM Air Forces. In this role, the commander answered to the USCENTCOM commander for the important mission of theater engagement with our partners.⁴⁷ This critical duty entailed many trips throughout the AOR to visit with officials and discuss numerous issues, including shared basing, equipment sales, and mutual training.

From the CFACC's perspective, these responsibilities must have made him feel like he or she was in the middle of a wheel

with many spokes, each expecting to be supported. Certainly there was no shortage of demand. Every day, commanders throughout the AOR passed numerous requests for support to the AOC. The result was that far more requests arrived than could be fulfilled. The good news was that the CFACC enjoyed a measure of centralized authority to move assets to support the most pressing needs in the theater. The bad news was that, inevitably, someone did not get the requested air support.

This method led to frustrations between ground and air commanders. “The CFACC is not supporting me!” complained some ground commanders, while Airmen retorted, “The CFACC cannot support you if you don’t bring Airmen into the planning earlier.” When the intense arguments began, Airmen and soldiers talked past each other, with Airmen asserting that limited air assets could be used more efficiently if they were included in the operational planning. Ground commanders began lamenting that all they wanted was more support and that they did not care if it was efficient as long as it was effective. Some of these issues could have been overcome through personal relationships, and the AOC staff worked to build bridges to other staffs, including those in Iraq and Afghanistan. Several impediments hindered the development of close working relationships between air and ground staffs, however, including geographical separation and incongruent personnel rotation policies.⁴⁸

Many airmen felt that the AOC had been relegated to a help desk for airpower, with each individual request representing a trouble ticket from a supported commander. Without involvement in the early stages of planning, it was almost impossible to put each of these tactical requests into an operational context. It seemed obvious to AOC planners that airpower could be used in more innovative ways, but there seemed to be little opportunity to inject air-planning expertise into scores of tactical headquarters strung out across the theater. Instead of proactively applying airpower to the joint force commander’s priorities, the AOC had become almost entirely reactive to the requests of numerous supported commanders—and the trouble tickets kept pouring in.

Nondoctrinal Apportionment

A fundamental problem with this arrangement was that the CFACC received spotty guidance and direction from superiors regarding how to apportion his forces between the multiple supported commands. After major combat operations ended in Afghanistan and Iraq, the doctrinal apportionment process stopped—there was no daily apportionment recommendation by the CFACC or decision from the USCENTCOM commander. The process used to apportion intelligence, surveillance, and reconnaissance (ISR) assets was probably the closest to established doctrine. For this, the USCENTCOM Intelligence Joint Staff Directorate (J2) in Tampa, Florida, held a weekly joint collection management board to make an apportionment recommendation to the commander. Interestingly, these apportionment recommendations were made by system, not by percentage, priority, or weight of effort. For example, entire Predator aircraft communication lines were apportioned to Iraq or Afghanistan, even though the AOC was capable of switching the communication lines between the airborne Predator in both Iraq and Afghanistan several times a day to maximize coverage of priority areas. Additionally, systems like the E-8 Joint Surveillance Target Attack Radar System and the RC-135 RIVET JOINT were directed to fly exclusively in Iraq or Afghanistan.

Other forms of airpower were apportioned in different ways. Airlift requests throughout the theater were collected and prioritized by the CENTCOM deployment distribution operations center (CDDOC) and transmitted to the AOC. The CFACC had no control over these priorities. The Mobility Division at the AOC simply would schedule as many of the requests as possible in priority order. Electronic warfare assets like the EC-130 were effectively apportioned according to their original deployment orders created at the Pentagon. These orders stated that they would fly in either Iraq or Afghanistan. Because of this, the CFACC was unable to move them from one area to another, even if it made sense to do so (because an airplane was broken, for example).

The CFACC had greater control over fighters, bombers, and the tankers that provided them with air refueling. As one would expect, fighters based in Iraq or Afghanistan tended to fly in

their local areas (although small detachments of fighters could deploy from one country to the other in extreme circumstances). The CFACC, however, enjoyed great flexibility in directing fighters and bombers based between Iraq and Afghanistan. This was true for the tankers also. These swing assets could range into either Iraq or Afghanistan on a given day. Moreover, due to the solid working relationship between the CFACC and the combined force maritime component commander and his staff, the CFACC had great influence over where the assets from the Carrier Strike Group(s) would fly. It was not unusual for the Combined Force Maritime Component Command's (CFMCC) staff to call the AOC and ask, "Where should the carrier go next month?" While the CFACC enjoyed great latitude in directing where the swing assets would fly, due to the lack of an apportionment process, he or she received almost no guidance on the critical apportionment decision of prioritizing between Iraq and Afghanistan. In keeping with the spirit of centralized control, the CFACC and his staff would try their best to maximize the effectiveness of limited airpower assets. This required disciplined study and an appreciation of airpower's contributions to ongoing irregular operations in the two countries. As the CFACC explained during an interview in late 2007, "The air campaigns in Iraq and Afghanistan are two completely different wars."⁴⁹

Afghanistan versus Iraq—An Airman's Perspective

Many are surprised to learn that Afghanistan contains a significantly larger population and occupies almost 50 percent more territory than Iraq.⁵⁰ Additionally, the terrain in Afghanistan is generally much more mountainous than Iraq (while Iraq does have mountainous areas, they are located mainly in the north, where few coalition troops are stationed). The transportation infrastructure in Iraq is much more developed than in Afghanistan, where several bases are resupplied routinely through air-drop operations. Added to this picture is that Afghanistan is landlocked and has only a few reliable lines of communication over land leading into it. Perhaps most importantly, far less friendly forces abound in Afghanistan than in Iraq. In contrast to Iraq, however, where traditional conflict (in

the forms of direct ambushes and firefights with significant numbers of enemy forces) happens only rarely, soldiers in Afghanistan often confront enemy forces that have significant numbers of fighters, sometimes numbering in the hundreds. At times, US forces are even outnumbered locally. When this occurs, they fight with superior skill and bravery, and they call upon other resources at their disposal, including their asymmetric advantage of airpower. When planning, forces in Afghanistan sometimes will cancel or postpone operations when they are told that they will not receive the air support they requested. Before surge operations commenced in Iraq, this never happened there, and it only happened rarely after surge operations started in 2007.

For these reasons, airpower seemingly met a greater need in Afghanistan than in Iraq (fig. 8). Stated in economic terms, the marginal utility of the next unit of airpower—the next sortie flown, area monitored, pallet delivered, or bomb dropped—

Iraq		Afghanistan	
437,072 km ²	Size	647,500 km ²	
27,499,638	Population	31,889,923	
Mostly flat to rolling (mountains north)	Terrain	Very mountainous with some plains	
Some flooding, but usually controlled	Natural Disasters	Significant flooding, especially in spring	
Modest, good in places	Transportation Infrastructure	Very limited	
~140,000	US / Coalition Forces	~53,000	
Coalition, indirect fires, insurgents fade quickly, mostly urban, ground resupply, CAS rarely needed	Character of Conflict	ISAF (NATO), insurgents mass, mix of fires, rural, aerial resupply, traditional CAS more common	



General analysis: “swing” airpower could have a greater impact in Afghanistan.

Figure 8. General analysis. (Compiled by the author.)

seemed to be greater in Afghanistan than in Iraq.⁵¹ This was especially true as the world's foremost alliance, the North Atlantic Treaty Organization (NATO), assumed responsibility for security operations in Afghanistan. Indeed, to many observers, it appeared that NATO's air operations—controlled centrally by the CFACC and his deputy from the AOC according to the International Security Assistance Force (ISAF) commander's priorities—were filling critical capability gaps, essentially keeping NATO in the fight despite a shortage of soldiers on the ground. As NATO's ISAF began to confront the Taliban in the contested South region, the evidence seemed to agree.

NATO and Airpower: Operation Medusa

At times, operations in Afghanistan have relied heavily on NATO airpower to mitigate a lack of other forms of military power, specifically land forces. One vivid example of this took place during Operation Medusa, which occurred shortly after the ISAF assumed responsibility for Regional Command–South (RC-S) in the summer of 2006. This operation sought to clear the Panjwai valley near Kandahar of the many Taliban fighters there. This was key terrain for the Taliban, as it was an economic center due to the fertility of the land, and its many irrigation trenches and compounds surrounded by mud walls provided numerous defensible positions—one ISAF commander described it as “perfect defensive ground.”⁵² The valley also had emotional value for the Taliban, as it was the birthplace of its leader, Mullah Mohammed Omar, and the area where the Taliban movement began.⁵³ In addition, during the Soviet Union's invasion of Afghanistan, Panjwai was a stronghold for the Mujahedeen, and it had never fallen to Soviet control.⁵⁴ The Taliban did not intend to cede this valley to ISAF either.

Immediately after ISAF forces deployed to the area, Taliban fighters attacked them. ISAF officials soon realized that “the insurgent forces were clearly looking for a fight, and wanted to draw ISAF forces into battle.”⁵⁵ “Their intent was to prove to the world and the Karzai government that they could take us on,” concluded Canadian brigadier general William Fraser, the ISAF's commander for southern Afghanistan.⁵⁶ Canadian battalion commander, Lt Col Omer Lavoie, agreed, saying, “So I think the

Taliban decided that they would either test or show that NATO did not have the resolve to conduct combat operations to the extent that US forces did.”⁵⁷

The general plan was to encircle the area with ISAF forces, allow civilians to leave, weaken the Taliban through air strikes and artillery barrages, and only then clear the area with ground troops.⁵⁸ After delivering warnings for civilians to evacuate the area, decisive operations for Operation Medusa commenced on 2 September with artillery and air strikes.⁵⁹ For some reason, several key Taliban command-and-control targets were taken off the target list.⁶⁰ On 3 September the ISAF commander decided to forgo further artillery and air strikes against the Taliban strongholds in the southern part of the valley, instead ordering one of his Canadian companies into the free-fire zone.⁶¹ This was exactly what the Taliban wanted. They executed an effective ambush, and in the three-and-a-half hour firefight that ensued, the company lost four soldiers and sustained many more wounded.⁶² The company then withdrew, and NATO air-planes pounded Taliban positions throughout the night.⁶³ Unfortunately, a tragic accident occurred early the next morning. After providing air support for many hours, the pilot of an American A-10 aircraft mistakenly engaged this same Canadian company, rendering them ineffective.⁶⁴ This led to a pause in ground operations in the south, while the ISAF continued to pound the Taliban defensive positions with air and artillery. “Essentially we just shot and bombed the crap out of those guys for the better part of four to five days while the battle group made their way in from the north,” remembered Canadian reconnaissance squadron commander, Maj Andrew Lussier. He continued, “You could tell that we were not letting these guys get any sleep whatsoever, they were getting no rest. We were bombing the crap out of them constantly. . . . We killed a lot of people, you know; we killed a lot of Taliban. And they’re just not set up to take a couple hundred casualties. They’re not set up to evacuate them. They’re not set up to look after those kind of wounded. So they just fell apart.”⁶⁵

After stabilizing the situation with their firepower advantage, much of it in the form of airpower, NATO forces continued the operation, cleared the valley, and killed scores of Taliban fighters. During the operations, ISAF’s commander, UK Army general

David Richards, summed up the contribution of airpower to NATO operations, observing that “in the heat of battle, the factor that makes the difference for ISAF is airpower. Time and time again, through hundreds and hundreds of missions, it is the skill of our aircrew that has saved our troops on the ground and paved the way to success.”⁶⁶

Providing this level of airpower to Operation Medusa was not easy, however, and it required centralized command and control. In accordance with ISAF priorities, the AOC had allocated a significant portion of air assets to support the offensive, but no one anticipated that the need would grow so quickly after the initial attacks. Operation Medusa set new records for operational tempo of airpower in Afghanistan. During the most intense periods, some aircraft were expending their ordnance within minutes of reporting on the scene. As ground commanders discovered countless Taliban defensive positions, they requested more and more air support.

Behind the scenes in the AOC, airmen scrambled to push air assets to the operation. Unfortunately, they could not concentrate solely on southern Afghanistan, as Operation Medusa was one of three major operations at the time. Operations Big North Wind and Mountain Thrust were being executed in eastern Afghanistan, and they had requirements for air also.⁶⁷ Moreover, these operations were under US command and control, not NATO.⁶⁸ The CFACC had to balance these competing requirements, and the AOC staff adjusted operations in real time to meet as much of the demand as possible. In addition, the CFACC asked the CFMCC to quickly position the USS *Enterprise* Carrier Strike Group off the Pakistan coast, allowing it to fly sorties into Afghanistan to help satisfy the increased need. These actions made it possible for all operations to continue with the necessary amount of airpower integration, and the CFACC needed centralized command and control to make it work. Once the pilots checked in with their ground controllers, however, operations became highly decentralized. The combination of centralized command and control at the operational level and decentralized execution at the tactical level allowed ISAF to be successful.

Added together, airpower’s contributions to Operation Medusa at the operational and tactical levels of war had a strategic im-

pact. If the losses suffered early in the operation had continued much longer, or if the Taliban had been able to maintain their defensive positions for an extended period, this would have created a crisis both within the alliance and between ISAF and the government of Afghanistan. ISAF had to succeed or face severe consequences. Lt Gen Michel Gauthier, commander of Canadian Expeditionary Forces Command, summarizes the strategic situation:

So you have this dynamic where clearly the Taliban are showing an intent to test ISAF. And this is all about credibility of ISAF in relation to Afghanistan and the Afghan government and so I would say there were all sorts of pressures on ISAF to demonstrate to the people of Afghanistan that ISAF and NATO were committed to Afghanistan and were committed to protecting the people of Afghanistan. And that's not propaganda, that's real. I mean, this was reality at a strategic level in the south of Afghanistan. There was very real pressure, real present danger from this Taliban force which was adopting a conventional posture in Panjwai and clearly demonstrating an intent to cut off Kandahar city and cut off Highway 1. None of which boded well, obviously, for the future of the south of Afghanistan. So, something had to be done in a couple of different respects both to gain the trust of the Afghan people, start to win their confidence, and to get those bad guys out of there so that the threat was removed.⁶⁹

In addition, had ISAF failed this first major test, many believe there was a distinct possibility that one or more of the allies may have pulled out of ISAF.⁷⁰ This would have weakened the alliance at a critical time, and the negative repercussions would have reverberated for years. Therefore, it is reasonable to conclude that NATO airpower helped to keep the alliance on track in Afghanistan. It took a skillful balance of centralization and decentralization—led by the CFACC and implemented through his command and control mechanisms—to make it happen (fig. 9).

Airpower in Afghanistan—Extending the Commander's Reach

In follow-on operations, airpower has helped NATO to make important gains in security and stability. While the vast majority of operations are decentralized in nature, with ground forces in the lead, some important operations are made possible by decentralization. For example, in late 2006 and 2007, the CFACC

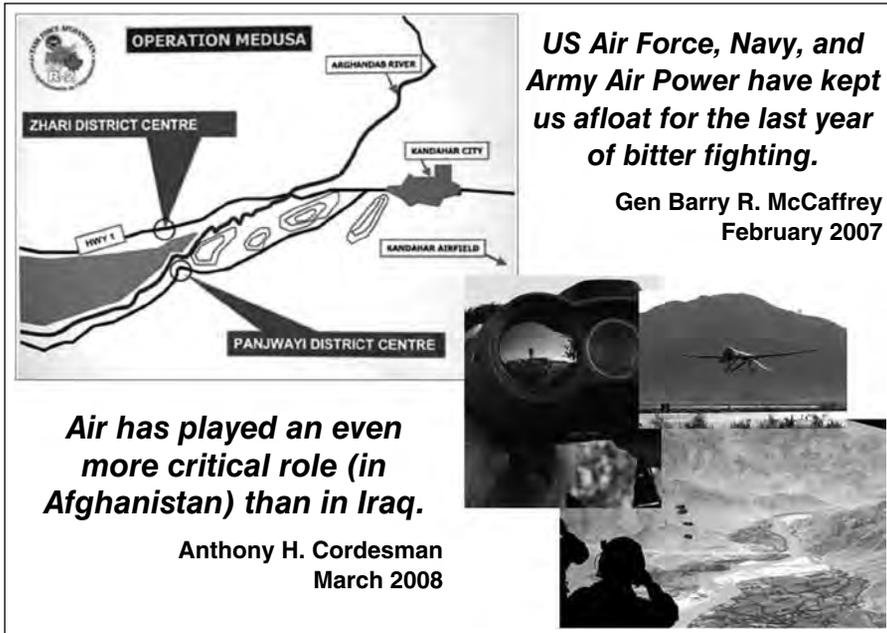


Figure 9. Critical role of airpower. (Compiled by the author.)

directed the commencement of Operation Open Road. In this operation, pilots flew repeatedly over the key lines of communication in Afghanistan, especially the all-important Highway 1 that connected many of the country's population centers. The ISAF commander, General Richards, made opening these lines of communication a priority in late 2006 after insurgent fighters had been able to disrupt both military logistics and civilian commerce. In conjunction with numerous local ground operations designed to take back the roads, Open Road helped to deter and disrupt insurgent activity on Highway 1.⁷¹ Airpower has supported ISAF in numerous operations designed to disrupt insurgent sanctuaries and movements in such places as the Helmand province in the south. In addition to this support, AOC planners designed other operations to disrupt insurgents in places the ISAF commanders could not reach with ground troops because of the lack of forces. In this way, NATO airpower helped to increase the operational reach of the ISAF's commanders.

Denying Sanctuary in Tora Bora

The most successful disruption operations in Afghanistan, by far, have been those accomplished by a small number of highly trained ground forces integrated with airpower and information operations. Perhaps the best example of this was an operation that occurred almost a year after Operation Medusa, with little fanfare. For years, the mountainous region near the Pakistan border, known as Tora Bora, has served as a sanctuary for al-Qaeda and associated groups. In fact, the impenetrable terrain coupled with its proximity to a porous political border makes it a perfect hideout. By the summer of 2007, considerable evidence showed that al-Qaeda fighters were again using this area for refuge.⁷² The ISAF commander, Gen Dan McNeil, decided to use force to deny this sanctuary. The most effective way to do this was through highly capable special operations forces integrated with airpower effects, including a robust combination of ISR, tactical airlift, aerial resupply, airborne communications, and lethal effects delivered from numerous platforms. Because friendly forces could easily be outnumbered in Tora Bora, and the terrorists' knowledge of the mountains gave them a distinct advantage, this operation was planned in great detail.

In one of the finest examples of joint planning seen in-theater, the AOC staff worked closely with the supported headquarters in creating this plan, and both the senior ground commander and CFACC were personally involved. Through countless video teleconferences and mission rehearsals, the joint force developed a plan in which airpower would allow the ground force to safely ingress. Once on the ground, airmen would protect and sustain the soldiers while they were in the sanctuary, and airpower would ensure their safe egress when the ground commander decided it was time to leave.

One key aspect of this planning was unprecedented. The decisive phase would begin with a major attack by fighters and bombers against al-Qaeda defensive positions. The ingress would follow moments later, allowing the terrorists no time to recover before the ground force was upon them. This attack required numerous weapons and an intricate plan to get the bombs delivered in minimum time. Due to his ability to move certain assets around the theater, the CFACC directed the re-

positioning of bombs and airplanes—and even made preparations for a global power mission—to provide the effects requested. In addition, the CFACC took proactive steps throughout the theater to ensure that other operations would not go unsupported. The CFACC’s ability to centrally control the initial stages of attack through the AOC would allow for maximum firepower on target, and as soon as the ground forces began their ingress, the operation would assume a more decentralized nature, with airmen and soldiers working together directly.

On the night of 14 August 2007, the operation kicked off with a heavy bombardment (fig. 10). One local resident noted that this bombing was heavier than it was during the famous 2001 operation in the same area.⁷³ The ground forces ingressed as planned, and over the next few days, they effectively took back the al-Qaeda sanctuary in Tora Bora. In this effort, they were aided by Pakistan, which moved forces across the border to block any escape.⁷⁴ Numerous foreign fighters were killed or

Fixed-Wing Sorties with Munitions Expended in Afghanistan

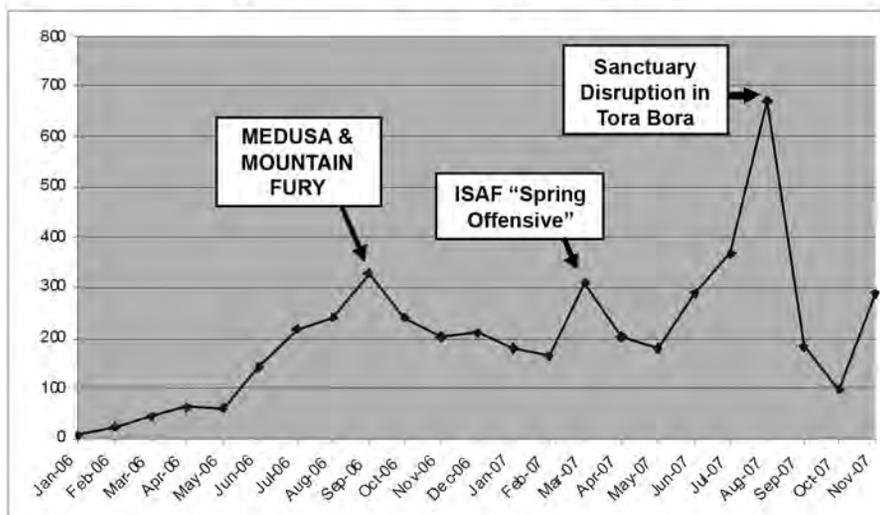


Figure 10. Fixed-wing sorties. (Reprinted from USAF Central Combined Air and Space Operations Center.)

captured. Their defensive positions were destroyed, and their hiding places were searched. More importantly, the operation set the stage for local Afghan forces to return and establish a more long-term presence.

Unfortunately, this major success in joint planning was the exception rather than the rule in Afghanistan. It has been extremely difficult to get airmen and soldiers on the same page. Airmen and soldiers have different perspectives and norms when it comes to planning, and this disconnect is not limited to Afghanistan. It is present in Iraq as well.

The Operational-Tactical Disconnect

While the air-support requests that flood into the AOC are almost always tactical in nature and sent through separate stovepiped processes, airmen are trained and organized to integrate airpower capabilities—from air to space to cyberspace—to provide operational-level effects. Senior airmen and their staffs adopt this operational focus naturally, as they are used to command assets that can create effects over wide geographical areas. While they are certainly capable of thinking at the operational level, ground commanders naturally adopt a focus that is more limited in geography, as travel across a theater for ground forces is measured in days and weeks, not hours. This fundamental difference is especially evident in the way that air and ground commanders approach planning. Airmen believe in centralized planning at the operational level, and ground commanders believe in decentralized planning at the tactical level, especially in irregular warfare operations.⁷⁵ The result is that much of the planning that is taking place in Iraq and Afghanistan is occurring at the lower echelons of the ground command structure, especially at the brigade and battalion levels. Unfortunately, much of this planning is conducted without air experts in the room, as air planners are not present when the ground maneuver plans are being conceptualized.

Although elements of the theater air-control system—including the air support operations center (ASOC), tactical air parties (TACP), and joint terminal attack controllers (JTAC)—are meant to ensure tactical integration with the Army, they are not trained or organized to provide air-planning expertise on

the scale required in irregular warfare. This capability resides at the AOC, but a single AOC staff is unable to integrate fully with scores of tactical operations centers—the brigade and battalion headquarters where the meaningful planning takes place. The AOC valiantly sends individual experts and planning teams out into the field when needed, and senior ground commanders have hailed this as extremely beneficial.⁷⁶ This compromise never has completely bridged the gap, however.⁷⁷ While this operational-tactical disconnect has impeded effective operations in Afghanistan, it has been especially prevalent in Iraq, and it has led to significant frictions between ground and air commanders, especially after the bombing of a key Shia mosque in Samarra.

After Samarra—A Period of Shared Frustration

In retrospect, the bombing of the al-Askari mosque at Samarra by al-Qaeda in February 2006 was a turning point in Operation Iraqi Freedom. Although no one died in the original attack, the waves of ensuing violence—especially sectarian kidnappings and killings—contributed to a sharp upward trend in violent acts that lasted for well over a year.⁷⁸ By the late summer and fall of 2006, the rash of sectarian violence was threatening to undo many gains made over previous years, including two landmark elections and a constitutional referendum.⁷⁹ Officers involved in the operation experienced a growing sense of frustration, because they could not quell the violence.

Airmen, too, were frustrated. Through daily interactions with the Multi-National Corps-I (MNC-I) staff, they understood the situation was deteriorating, and like the ground commanders, they wanted to react. Unfortunately, several things seemed to be working against airpower effectiveness. The vast majority of ground operations were decentralized in nature, with the planning occurring at multiple subordinate headquarters, and airmen could not influence this planning. The AOC planners were not present, and the Airmen assigned to the units were not versed in air planning beyond the integration of close air support. Furthermore, the MNC-I staff responsible for prioritizing air support requests did not want air planners to talk directly with these units anyway, because they feared that the AOC

planners would make promises to the individual units that were out of line with the overall MNC-I priorities.

In the one instance in which a large-scale operation was planned—Operation Together Forward, a neighborhood-by-neighborhood clearing operation in Baghdad—the CFACC proposed that, instead of processing the multitude of air requests associated with the operation, the AOC would schedule and provide 24/7 coverage of the greater Baghdad area with fighter support. The division responsible for Baghdad could use these assets as it saw fit. In essence, the CFACC was providing the division with its own squadron of fighters for the duration of this important operation. Some argued that this was penny packeting, but two important distinctions were clear. First, the CFACC, working closely with MNC-I, retained the ability to move these assets in case of an emergency. Second, the operation was limited in time. When it was apparent that consistent presence was no longer needed, both MNC-I and the AOC would return to the normal system. Because strategists in Iraq and at the AOC believed that Together Forward could make or break the US mission in Iraq, it made sense to give a consistent supply of airpower to the division responsible for its success. This would promote both medium-term planning (including publishing common reference terms and maps) and the development of personal relationships that could improve air-ground coordination in this complex battlespace.

This plan was instituted during the first few days of the operation, and while there were some points of friction, the AOC received positive feedback from the division about having airpower available consistently, especially when their plans changed. After these initial days, however, in one of the most unexpected exchanges of the war, the MNC-I made it clear that it did not want to take advantage of this concept, and it went back to having the individual units in Baghdad submit their air requests as before. This situation led to hard feelings between commanders and staffs, but the AOC staff saved the planning products, especially those produced by the Master Air Attack Plan (MAAP) cell. These products would help immensely in developing the plan for supporting the surge strategy in 2007.

Another development that contributed to frustration in Iraq between airmen and ground commanders was a rule of engage-

ment that forced local ground commanders to get permission from their division commander—normally a two-star general officer—before they could request lethal effects from an air asset. Wide agreement abounds among airmen and ground commanders that the joint force must be discriminating when it applies lethal effects, including the employment of bombs, missiles, rockets, and guns from airplanes. This is especially true in the counterinsurgency environment, where a single misapplication of force can have disproportionate consequences. Elevating the approval authority for air strikes to the level of division commander, however, effectively took this option off the table for subordinate commanders. Due to the pace of events, by the time that the request reached the division commander and his decision was relayed down the chain, it was likely that the effect was no longer needed. The result was that, in Iraq, air assets employed ordnance in only the most unique circumstances. To get some utility out of assets overhead, local ground commanders often requested shows of force (aimed at deterring bad actors) and shows of presence (aimed at reassuring the local population and friendly forces). Not surprisingly, however, these efforts lost their effect over time, as insurgents figured out that the airplanes were probably not going to attack them directly.⁸⁰

More Frustration—Measuring Airpower’s Effectiveness

These restrictions contributed to problems with assessing airpower effectiveness, difficult in the best of circumstances, but seemingly impossible in the environment of Iraq. It is natural for commanders to want to assess their forces’ contributions to the overall mission objectives, and the CFACC was no longer the exception to this rule. Regular assessments were conducted at the AOC level, and the CFACC was an active participant. These assessments included measures of performance (data showing what the forces did, including sorties flown, tonnage moved, pictures taken, bombs dropped, and gas released). These assessments also included measures of effectiveness (data showing the effects of operations, including lives saved, targets destroyed, and systems disrupted), but these were difficult to identify and quantify.

ISR effectiveness was difficult to measure, as all of the CFACC-controlled ISR was thrown into the joint pool to meet the local ground commanders' requirements. Once the products were delivered, it was nearly impossible to determine how they contributed to success or failure of the requesting unit. ISR assets were delivering record numbers of hours of surveillance and intelligence products, but the effectiveness of this effort was always in question. It was easier to measure the effectiveness of air mobility forces, as the basic questions included the following concerns.

1. Did units get the supplies they needed to conduct their missions?
2. Did unit personnel get to the right places within the acceptable time frame?
3. Did wounded personnel get to facilities where they could receive needed care?

Generally, air mobility forces fared well in the assessments. So did such space effects as precision navigation and timing, which were so reliable that commanders took them for granted. This was true for combat search and rescue forces also.

Much of the difficulty in assessing airpower effectiveness arose from the nature of the supporting/supported command relationship between the CFACC and the ground commanders. Specifically, since airmen were not involved in conceptualizing the way in which airpower would be employed in each individual operation (due to the operational-tactical disconnect mentioned above), the CFACC and the AOC staff had to answer a fundamental question: Should we measure how well we are answering the ground commanders' tactical requests, or should we try to ascertain how airpower is contributing to operational-level objectives? Of course, the AOC staff tried to do both, but in the latter half of 2006, the results were disconcerting. The CFACC was meeting as many requests as possible, and coalition airmen were doing everything in their power to squeeze as much as they could out of the resources at their disposal. Moreover, when asked for feedback, the ground commanders generally replied, "You guys are great, we just need more!" This answer added to the frustration, because for reasons mentioned

earlier, the CFACC had little say regarding the amount of air forces available.

The most frustrating thing about this situation, however, was that in the latter half of 2006, it was obvious that things were not going well on the ground: Operation Together Forward was not working, Baghdad was in chaos, sectarian violence was continuing, and influential officials in the United States were calling for withdrawal.⁸¹ At the AOC, the assessment of air-power was captured in this scenario: “Boss, the ground commanders say we’re doing great, but we’re losing!” In essence, air operations had been so decentralized that it was impossible to connect tactical success to operational objectives. This disconnect was most evident in assessing the fighter aircraft tasked to provide close air support (CAS), but in reality the effects they provided were much different from CAS.

The Problem of Armed Surveillance

Perhaps the most frustrating effect to measure was the contribution made by these fighters. Pilots spent thousands of hours flying over Iraq, yet they almost never unleashed lethal effects on the enemy. It was not CAS in any traditional sense, as air assets only rarely engaged enemy forces.⁸² Most often, the effect was described as nontraditional ISR (NTISR). Unfortunately, this development only added to the confusion, because it referred to several distinct activities. NTISR began as a concept to use airborne sensors that normally were not used for ISR collection (hence, the nontraditional qualifier) to augment existing collection efforts.⁸³ The purpose was to gather intelligence for future operations, and the information gathered was usually processed, exploited, and disseminated to appropriate agencies. As innovative airmen realized the potential of these sensors to give real-time information to ground units, however, NTISR evolved to include activities that provide situational awareness to commanders engaged in current operations.⁸⁴ Information was gathered and disseminated immediately, but it was generally not processed, exploited, or even documented. For example, a USAF officer describes NTISR in this way: “The majority of the time NTISR crews communicate directly with ground units. . . . These

aircraft can scout ahead of convoys, looking for possible ambush sites or any other threat.”⁸⁵

To distinguish providing real-time situational awareness from augmenting the ISR collection effort, AOC staffers began to develop a new vocabulary. *Armed overwatch* became the term used to describe providing situational awareness during active ground operations.⁸⁶ As will be discussed later, a wide agreement and ample anecdotal evidence that this was effective and beneficial became apparent. *Armed surveillance* was the term used to describe providing real-time information during inactive periods on the ground. In conducting armed surveillance, pilots would monitor various lines of communication, populated areas, and historical points of origin of insurgent mortar and rocket attacks for activity, then report to the local ground units on what they found. If they observed such suspicious activity as a disturbance of dirt near a road, they passed on that information and left it in the hands of the local ground commander (fig. 11).

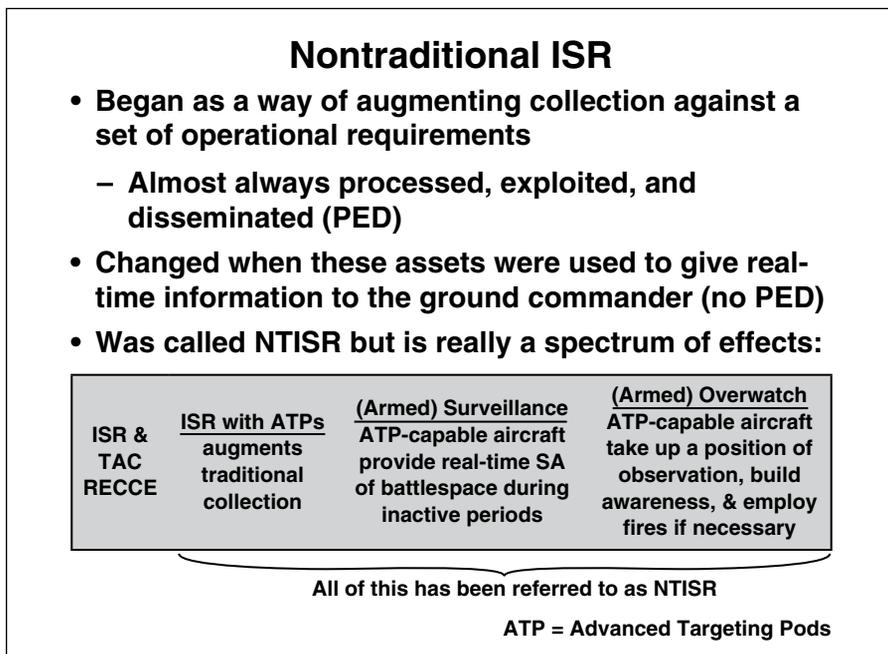


Figure 11. Nontraditional ISR. (Compiled by the author.)

Unfortunately, in late 2006 a large percentage of the air support requests asked for armed surveillance, but the information obtained in countless hours of this activity was acted upon only rarely by the local ground units. One assessment attempted to track pilot reports and their impact on follow-on operations. It found that these reports were actioned less than 10 percent of the time, and of those reports that were investigated, only a small percentage turned out to be enemy activity. Other reports had slightly higher percentages, and some interesting anecdotes illustrated success. Nevertheless, the results of armed surveillance were disappointing from a numerical perspective. Some ground commanders defended air assets in this way by arguing that, while it was impossible to investigate all of the reports of suspicious activity, it was important for them to know when pilots did not observe suspicious activity. This allowed them to send their soldiers out the door with some assurance that they would not be surprised.

Indeed, this was probably a valid defense of armed surveillance, because it showed how ground commanders used it to manage risk to their mission and people. Missing from the equation, however, was the risk to future missions due to the overuse, and eventual loss, of air assets. Military equipment wears out faster in the harsh environment and high operations tempo of the Middle East. The heat, sand, and wind combine to create one of the harshest climates on earth, especially for high-tech equipment. Although maintainers have done an excellent job in keeping airplanes flying, the airplanes are exhibiting serious symptoms of chronic stress. It is common for Airmen to fly, and for soldiers and marines to trust their lives while flying airplanes with such known defects as cracks in the wings or risky imperfections in the engines. The problem of armed surveillance was that while it may have helped ground commanders to mitigate their tactical risk, it provided few quantifiable benefits. The cost, however, was quantifiable. Airmen watched as the United States' strategic deterrent of airpower was literally being consumed in Iraq. "We're burning these airplanes out," observed the CFACC. "Our A-10s and our F-16s are rapidly becoming legacy systems."⁸⁷ With this realization, the CFACC was caught in the unenviable position of choosing between denying airpower to ground commanders or

driving the fleet into the ground. Because operations were decentralized, and airpower was often added after the real plans were set, no one had a good appreciation for comparing the strategic and operational risks of the air component to the tactical risks for the ground units. Fortunately, much of this would change with a new approach in Iraq known as the surge. Before this took place, however, a bizarre event occurred.

An Unexpected Event—The Battle of an-Najaf

Early on Sunday morning, 28 January 2007, Iraqi forces reported that they were in a heavy firefight near the city of an-Najaf with a militia group numbering several hundred fighters.⁸⁸ This report was extremely unusual for Iraq, because unlike the Taliban in Afghanistan, insurgent fighters in Iraq never initiated attacks in large numbers. The Iraqi forces were outnumbered and vulnerable. Coalition units in the local area responded, and fortunately, two joint terminal attack controllers (JTAC) were with them.⁸⁹ While these JTACs got into position, the air support operations center in Baghdad—backed up by the AOC—began to move airborne fighters to the scene. As the battle on the ground intensified and an AH-64 Apache helicopter was shot down, the ASOC directed a fire hose of airpower focused on the area, and multiple formations of fighters were moved to the scene as well as an additional JTAC.⁹⁰ The AOC also launched several fighters standing by on alert. At one point, so many assets were airborne that the JTACs had trouble controlling them. One of the A-10 pilots, qualified as an airborne forward air controller, stepped in and helped to de-conflict assets in the area.⁹¹ The battle continued throughout the day, and numerous air assets, including US Army AH-64s, US Air Force F-16s, and A-10s, as well as Royal Air Force Tornado fighters, dropped tons of ordnance and shot thousands of bullets.⁹²

At the end of the firefight, several hundred members of the Soldiers of Heaven cult lay dead, and many others were captured.⁹³ Coalition airpower saved many American and Iraqi lives that day. This result helped to provide for increased cooperation between the Iraqis in the area and the coalition force stationed there. “The governor met me and was sobbing,” recalled Maj Gen Joseph F. Fil, Jr., commander of the 1st Calvary

Division, “not out of sadness, not out of anger, but out of thankfulness.”⁹⁴ As in Operation Medusa in Afghanistan, this was an instance where the tactical effects of airpower had an operational and strategic impact. Also, as in Operation Medusa, it took a skillful balance of centralization and decentralization to provide the right effects at the right time. Centralization was needed to pull air assets from their routine surveillance duties to the battle and to call in the reserve of alert fighters. Decentralization was also required, as the JTACs directed firepower where it was needed, and an A-10 pilot took local control of a chaotic situation in the air. This operation reinforced the lesson to airmen that airpower was the equivalent of an insurance policy for the unexpected events that could happen in Iraq. To paraphrase a common saying among soldiers, coalition airmen had to be ready to “fly to the sound of the guns” when necessary. This lesson was at the forefront of their minds as they prepared for the biggest challenge since the initial invasion of Iraq in 2003.

Supporting the Surge Strategy

In January 2007 Pres. George W. Bush announced a new approach in Iraq. Instead of redeploying ground units back to the United States as many expected, he directed a major buildup of forces in Iraq. The objective was to use these forces to quell the violence and secure the population. This would allow space for political reconciliation and progress. At the tactical level, coalition ground forces, along with their Iraqi counterparts, were to leave their established operating bases and live among the people they were responsible for securing.⁹⁵

In addition to increasing the US Army brigade combat teams (BCT) from 15 to 20, the other services contributed more forces to support this strategy. In the months following the president’s announcement, the Marine Corps fielded another Marine expeditionary unit, the Navy committed an additional carrier and support vessels to the region, and the Air Force sent additional fighter, electronic warfare, and ISR aircraft. It was important that the air component increase its resource pool, because everyone expected the tempo of operations to increase dramatically as new ground units arrived. Before that could happen, how-

ever, air mobility forces needed to surge, and they worked hard to handle the increase in demand in addition to the normal logistics requirements and personnel rotations.

As a new command team took the reins of the MNF-I and the MNC-I in early 2007, it was apparent that synchronization and planning at the operational level would be an important part of the new approach to Iraq. When the new MNF-I commander assumed command, planning commenced for a nationwide push to get the troops out and establish contact with the population. This operation, called Black Anvil, required centralized planning and direction as well as decentralized execution to succeed. The CFACC and his staff saw this operation as an important development, and they created a supporting plan to surge airpower presence throughout the country in a way that was similar to the previous elections in Iraq.⁹⁶ To make this happen, the CFACC directed that aircraft usually tasked in Afghanistan be sent to Iraq. This included B-1 bombers that had not flown over Iraq since the invasion of 2003. The sight of B-1s flying over Baghdad created quite a stir in the population. Perhaps more importantly, it encouraged coalition forces on the ground.⁹⁷ Again, the CFACC's centralized control allowed additional resources to be brought to bear at the right place and time. Over the next several months, B-1 crews would become proficient in flying missions to both Iraq and Afghanistan. At the same time, ground commanders in Iraq, in conjunction with their attached air advisors, would increasingly request the heavy firepower and unique presence of the B-1s. In fact, demand for all forms of airpower continued to increase as new units arrived and prepared for a massive summer push. This effort would, in the words of Frederick and Kimberly Kagan, redefine operational art in a counterinsurgency.⁹⁸

Baghdad Belt Operations—What Is the True Requirement for Airpower?

Baghdad is at the heart of Iraq, both physically and psychologically. Accordingly, it had always been identified as the primary focus of operations. As the new command team in Iraq evaluated the situation, it correctly determined that Baghdad never could be peaceful as long as accelerants of violence—

bomb-making materials, foreign fighters, etc.—continued to enjoy sanctuary in the surrounding villages and enter the city with little difficulty. During the past year, a system of berms, moats, and walls had been constructed around the capital, and this system was supposed to force people to enter and exit the city through established checkpoints. The Iraqi Air Force assumed the task of patrolling this barrier through the air. Unfortunately, they would report breeches daily. Senior leaders decided that if they were going to stop the flow of accelerants, they would have to extend the city's defenses into the surrounding provinces—the Baghdad belts—that served as home base for many insurgents. Therefore, at the operational level, it was clear that Baghdad operations would continue, but the Baghdad belts would become a major focus as well.⁹⁹

As the planning for summer surge operations in Baghdad and the Baghdad belts progressed under the name Operation Phantom Thunder, it became clear that soldiers in Iraq were going to require a combination of airpower's lethal and nonlethal effects (fig. 12). By now, the new group of commanders had eased the restrictions on using airpower. While they still taught their subordinate commanders to use restraint when directing firepower, they lifted the requirement for air strikes to be approved at the division commander level. Additionally, a major increase in preplanned air strikes was used to protect coalition forces from deadly traps and to prepare the way for them to enter contested territory. Nonlethal effects were becoming increasingly important as well. Ground operations were highly active, and ground commanders grew to rely on the aerial perspective from ISR platforms and fighters that could transmit live video feeds to laptop computer screens on the ground. This real-time information allowed the local commanders to make better decisions. This was especially true in urban and semi-urban areas where visibility was restricted due to the ubiquitous walls that are in Iraq.

Taken together, the effect that airpower provides in this context is best described as *armed overwatch*.¹⁰⁰ Armed overwatch occurs when air assets take up a position of observation as ground units conduct maneuver operations. The air assets provide real-time information about friendly, enemy, and population movements. If ground forces make contact with the enemy

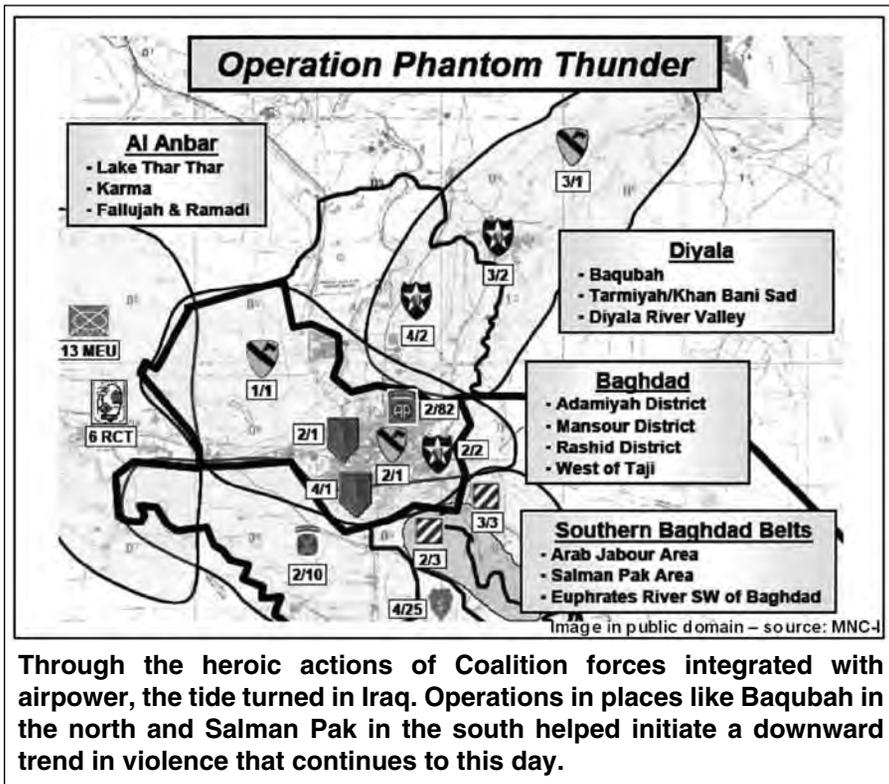


Figure 12. Operation Phantom Thunder. (Compiled by the author.)

and require firepower, the air assets quickly transition to CAS (this is the armed part of armed overwatch). In Iraq, ground commanders needed this specific combination of lethal and nonlethal effects, and it was apparent that they were using airpower as an element of their maneuver force only when they knew it would be available.

Unfortunately, it became impossible to assure this availability to everyone. The demand for airpower, in the form of the air support requests, was increasing at an unprecedented rate as the summer surge approached. Even with recent increases in assets, the CFACC did not control nearly enough resources to meet every request. In fact, if the trends were to continue, the AOC staff estimated that the CFACC might not be able to meet half of the requests. When the CFACC asked for more resources

to handle this increase in demand, the response came back loud and clear from his superiors: "You've got what you've got." Everyone realized that something needed to be done, and a meeting was called between the MNC-I and the AOC staff (including the chiefs of strategy and combat plans) as well as the corps air liaison officer and the ASOC staff in Baghdad. They hoped to answer the fundamental question, What is the true requirement for airpower during the summer surge?

A requirement for airpower must be established, because air commanders needed to know what to shoot for, and ground commanders needed to know what to expect. This requirement could not simply be the sum of the support requests of the local commanders, as a military requirement is an established need, and it was not clear that all of the requests were required for mission accomplishment.¹⁰¹ In fact, the major breakthrough at the meeting occurred when a representative from the MNC-I Fires Cell explained that he read the incoming requests for air support to the headquarters and that it was his job to arrange them in priority order. In his experience, he judged that about two-thirds of them were valid requests in which airpower was truly needed. The remaining one-third tended to be armed surveillance missions where airpower support would be nice, but it was not required for mission accomplishment. This gave the staffs a starting point, and they started focusing on meeting the top two-thirds of requests on a typical day.

The planners then broke down Iraq by region, and with the knowledge of what was anticipated during the Baghdad belt operations, they estimated the air requirement for a typical day in each region. Everyone agreed that the divisions assigned to Baghdad, as well as those responsible for the provinces just north and south of Baghdad, needed 24/7 access to assets conducting armed overwatch. Moreover, they needed to know that airpower would be available for planning purposes so they could incorporate it into their maneuver plans. This task took up the lion's share of the air resources available. When other regions such as Basra in the south and Mosul in the north were added, the total ranged from 96 to 110 hours of air coverage per day to meet the requirement.¹⁰² This was the mark on the wall.

The AOC staff knew this would stretch the air component to its limits, but they took this number back to the CFACC for his approval. The CFACC then directed an air component-wide risk assessment, and the answer came back from the air commanders in theater that this goal was extremely challenging, but it was attainable with prior planning. AOC planners went to work building a master surge plan for the summer that involved moving assets around the theater (and the globe) to meet the new requirement. This would not have been possible without the CFACC's ability to direct operations throughout the theater. Ground forces received more airpower because the CFACC controlled it, planned it, redirected it, and gave a greater amount to them. This was a major success story for the air component.

However, it was what the ground commanders did with the resources entrusted to them, including airpower, that was most impressive. Operations in the Baghdad belts kicked off during the summer of 2007, and by all accounts, they were successful. Through the heroic actions of coalition forces integrated with airpower, the tide turned in Iraq. The operations in such places as Baqubah in the north and Salman Pak in the south helped to initiate a downward trend in violence that continues to this day. Some coalition forces have been able to withdraw from Iraq, and more will do so in the near future. Although senior leaders warn that expectations must be kept in check, many are optimistic about Iraq's future. Although airmen and soldiers shared many frustrations, they were able to work together at the right time to get the job done.

The Marine Corps had a large role to play in the Baghdad belt operations as well. It was assigned to the critical Multinational Force-West (MNF-W) area of operations—essentially Iraq's Anbar Province—that ended at the western outskirts of Baghdad. During the summer, the MNC-I commander directed the MNF-W forces to close off the western and northwestern approaches to Baghdad. Interestingly, Marine aviators were present at the planning meeting in Baghdad described earlier. In short order, they made it clear that Marine Corps air assets would fly in support of marines during the surge period; then, they sat back and watched the proceedings quietly. This came as a surprise to no one in the room.

The Marine Corps and Route Package Anbar

One institution that effectively bridges the gap between air and ground is the US Marine Corps, but it has done so in a way that has exacerbated tensions with other services. The Marine Corps has always believed in centralized control and decentralized execution of airpower, but it fundamentally disagrees that the source of centralized control should be an airman. It believes that the Marine air-ground task force (MAGTF) commander should be the single commander in charge, and all Marine air should be at his disposal. As the conflict in Iraq morphed into counterinsurgency and the Marine Expeditionary Force assumed responsibility for western Iraq, they secured control over Marine tactical air assets to fly in direct support of Marine ground units. This ensured the CFACC had no tasking authority over Marine fighters and air-refueling assets. Essentially, this agreement created a route package inside of Iraq reminiscent of Vietnam air operations, where harmony between the Navy and Air Force was accomplished by dividing the country into artificial sectors so that the services did not have to coordinate with one another.¹⁰³ To this day, Airmen consider the route package system of Vietnam another example of the penny packeting of airpower. As a result, they argued against this same mechanism in Iraq.

Marines argue that this arrangement is consistent with joint doctrine, and they are right, to a degree. JP 1, *Doctrine for the Armed Forces of the United States*, contains this language:

The MAGTF [Marine air-ground task force] commander will retain OPCON (operational control) of organic air assets. The primary mission of the MAGTF aviation combat element is the support of the MAGTF ground combat element. During joint operations, the MAGTF air assets normally will be in support of the MAGTF mission. The MAGTF commander will make sorties available to the JFC, for tasking through the joint force air component commander (JFACC), for air defense, long-range interdiction, and long-range reconnaissance. Sorties in excess of MAGTF direct support requirements will be provided to the JFC for tasking through the JFACC for the support of other components of the joint force or the joint force as a whole.¹⁰⁴

While neither JP 3-0, *Doctrine for Joint Operations*, nor JP 3-30, *Command and Control for Joint Air Operations*, repeats this specific language, JP 3-30 does mention organic air assets not

tasked by the JFACC and mandates that they appear on the air tasking order to avoid conflict.¹⁰⁵

Marines had to stretch this language to apply to the situation in Iraq. The static conditions are different from what the MAGTF was organized, trained, and equipped to do. The MAGTF was created to conduct expeditionary operations from the sea, characterized by rapid maneuver and usually conducted over a limited time frame. Yet in Iraq, the Marines find themselves operating as a policing force garrisoned hundreds of miles from the sea over a long time period. The mission is different, and Marine leaders admit that it is changing the corps. The commandant of the Marine Corps, Gen James Conway, for example, has voiced his concerns about this evolution. "We've become in many ways a second land army. We now have a generation of officers who have never stepped aboard a ship, and that concerns us with our naval flavor and our ability to launch amphibious support."¹⁰⁶ The problem is that, even though they are a second land army in Iraq, they control their own airpower in a way that the other land army does not.

The Marine Corps deserves great credit for adapting itself to meet the nation's call; in fact, one can make a solid argument that it has been the most successful service in doing so. Their tight grip on airpower, however, has created a curious seam in Iraq. For the most part, Marine aviators fly in support of Marines in Anbar, and coalition air forces support the rest of Iraq. Requests for airpower support are prioritized and filled separately, and generally many more unfilled requirements exist outside of Anbar. There is no way of knowing if the lowest filled priority in Anbar is of higher priority than the highest unfilled priority in the rest of Iraq. The perverse result is that ground commanders operating on one side of an artificial line have access to airpower in a way that those on the other side do not—and many of the latter operate in greater Baghdad, the acknowledged center of gravity. Airmen have repeatedly made the argument that sometimes operations outside of Anbar are a higher priority. While Marine air assets should generally support Marine ground commanders because it makes sense, sometimes Marine air assets should be pooled with all other coalition air forces and allocated according to the overall priority. Recently, MNC-I leaders have expressed their wish for all air

assets in Iraq to be distributed under the same system. Marines have vehemently disagreed, and this disconnect never has been resolved.

Intelligence, Surveillance, and Reconnaissance— What Ground Commanders Covet Most

Another point of contention in Iraq is the command and control of ISR assets, especially those that belong to the air component. As described earlier, ISR apportionment is handled through the Joint Collection Management Board process led by the USCENTCOM J2. Apportionment is generally done by asset, with MQ-1 Predator orbits (essentially the discrete communication lines that allow Predator operations beyond lines of sight) being the most hotly contested at the board because full-motion video—also called the unblinking eye—is the effect ground commanders covet most. After the apportionment decision is made by USCENTCOM, ground commanders and staffs in Iraq and Afghanistan develop collection requests and prioritize them (this is called *collection requirements management*). These requests flow into the AOC, and system experts in the ISR Division schedule ISR assets to cover as many of the requirements as possible while maintaining effectiveness (this is called *collection operations management*).

Because the assets are largely apportioned by system, however, the line between collection requirements management and collection operations management is blurred. If there is one E-8 JSTARS (Joint Surveillance Target Attack Radar System) sortie into Iraq on a given day, the collection managers know that if they prioritize certain requirements high enough, they are essentially scheduling the JSTARS to cover the requirements, with the ISR Division simply determining takeoff/landing times and refueling needs. This is especially true if the collection managers write the requirements so that only one type of asset can meet them. This is not terrible if everyone agrees that the assets are being used effectively. At times, the collection managers and ISR Division disagree on the best use of ISR, and heated arguments have resulted. The ISR Division, therefore, can be a frustrating place to work. Despite the designation as ISR experts with collection operations management

authority, the ISR Division is often treated as a help desk for ISR, not a partner on the joint team.

Contrast this perspective with that of the ground forces. After returning from Iraq as the MNC-I commander, Lt Gen Raymond Odierno coauthored an article detailing how ISR is managed by the MNC-I. Although he goes to great length to emphasize decentralization in the counterinsurgency environment, he describes a management system that mixes centralization and decentralization. In "ISR Evolution in the Iraqi Theater," he explains this balance, saying, "The COIN [counterinsurgency] environment's decentralized nature makes it imperative that ISR asset control, from tactical through theater level, be pushed to the lowest operational echelon, while it is simultaneously managed by the corps to maintain flexibility."¹⁰⁷ He proceeds to describe how the ISR assets are provided to lower-level commanders in one of two ways. The assets are either assigned to the subordinate commands semipermanently (these are called apportioned, although that use is not entirely consistent with the definition in joint doctrine), or they are given with the expectation that they can be pulled back by higher headquarters to meet higher-priority requirements that emerge (these are allocated, again not totally consistent with the doctrinal definition).¹⁰⁸ The key point is that this system balances predictability through the apportioned assets while ensuring flexibility through the allocated assets.¹⁰⁹ The article also makes it clear that this is possible because many more systems have been sent to Iraq. In economic terms, supply is up, and this allows for more of the demand to be met through decentralization.

A final point of interest is that ground commanders appreciate the ISR expertise they have received in the form of ISR liaison officers sent from the AOC to various division headquarters in Iraq (fig. 13). "Providing these Air Force subject matter experts as advisors to division staff sections and as key members of the intelligence-operations team has been a combat multiplier," writes General Odierno. It would be extremely helpful to have these experts at the BCT level to provide the CAOC (combat air operations center) and related organizations with insight into the operations they support."¹¹⁰ It seems that the presence of these liaisons has been helpful in establishing relationships and common understanding between soldiers and



Figure 13. ISR assets. (Compiled by the author.)

Airmen. This is yet another example of how disconnects in the joint force can be eased through personal relationships.

Common Frustrations in the Counterinsurgency Environment

Unfortunately, disconnects between airmen and the ground services in both Iraq and Afghanistan are exacerbated by the typical frustrations of fighting a counterinsurgency campaign. Max Boot explains that these conflicts are inherently frustrating to military professionals since “the primary characteristic of small wars is that there is no obvious field of battle; there are only areas to be controlled, civilians to be protected, hidden foes to be subdued. . . . There is little satisfaction in winning such a war . . . but much grief if you lose.”¹¹¹ Many interservice disagreements can be smoothed over when things are going well. As an example, interservice relationships have improved in Iraq as the outlook has grown more positive. Nevertheless, the maddening nature of counterinsurgency has aggravated

many existing seams between the Air Force, Army, and Marine Corps, and the Air Force's master tenet of centralized control and decentralized execution has been a lightning rod for emotional criticism and intellectual challenges.

Answering the Challenges

Clearly, Airmen in the US Air Force must be able to articulate what they believe about the planning and execution of air operations. Unfortunately, Airmen are having difficulty explaining the master tenet of centralized control and decentralized execution to each other, sister services, and civilian leaders. Moreover, a lack of understanding of the history of the master tenet, including experiences in World Wars I and II as well as recent experiences in Iraq and Afghanistan, has led us to resist modifications to our command and control mechanisms for fear that we will violate our fundamental beliefs. The perverse result is that we are violating the experience of the airmen who came before us, as they valued the flexibility of airpower above all else.

Can we do better? Yes, we can, if we take three steps. First, we should reevaluate the language we use to summarize the master tenet. Perhaps we can find a better way of describing what we believe. Second, we should write doctrine that teaches Airmen about the master tenet and acknowledges that there is no one-size-fits-all solution to commanding airpower. A mature doctrine will help us deal with the real-world complexity we encounter by abandoning dogged prescriptions and substituting important questions. The answers will help to determine how to structure command and control systems to fit the situation. Third, in the current conflicts in Iraq and Afghanistan, we should use these questions to guide us in implementing a more flexible command and control system that better integrates with other elements of the joint force and their varied missions.

Finding Better Language to Describe the Master Tenet

We should begin by looking for better language to describe the master tenet. The fact is that centralized control and de-

centralized execution has devolved into a sound bite that means different things to different people. As explained earlier, the term *control* has significant problems, and the result is that Airmen have difficulty connecting the sound bite to convincing explanations. To get past this language barrier, we should go back to the first principles. Earlier in this monograph, we derived a more robust statement of the master tenet, which we summarized “as centralized command and control of airpower by an airman promotes effectiveness and preserves flexibility at the strategic and operational levels of war, while decentralized execution of air operations promotes effectiveness and preserves flexibility at the tactical level.” Unfortunately, this is a mouthful, and it may be useful to search for a shorter version. For the first section, many people have proposed alternative ways of describing exactly what should be centralized. In centralized control, *control* is vague and is associated with multiple concepts. Centralized apportionment is good, but does not allow for real-time adjustment. Centralized planning and direction are the same as above. In centralized command, the JFACC may not command all the forces he or she directs.

As discussed earlier, the adoption of centralized command and control most closely describes what Airmen believe. We also believe in decentralized execution, as do all of the other services. Most Airmen would have little difficulty connecting these concepts to increased effectiveness and flexibility, so the phrase “promotes effectiveness and preserves flexibility” could be deleted. Therefore, if we were to adopt *centralized command and control and decentralized execution* as our bumper sticker, it would be a marginal improvement over what we have now.

This would leave out the connection to the levels of war, and this connection is critical for our Airmen. We must be able to explain that our commitment to centralization is directly related to our belief that airpower can have operational and strategic effects when integrated and synchronized across the entire battlespace. Moreover, we believe that decentralization is the norm, not the exception, for tactical operations. In combining these two statements, we also believe that the only valid reason for senior commanders to exercise centralization over tactical operations is (1) they have operational- and strategic-level consequences, and (2) there is no other way to mitigate

mission risk (that is, communication of commander's intent, pushing of real-time information to lower echelons, and training subordinate commanders to act appropriately).

The connection of centralization and decentralization to the levels of war constantly reminds Airmen that tactical operations must be connected to operational and strategic objectives. Dropping a bomb or shooting a missile is not an end in itself. Tactical commanders must do this well, and they usually function best when they are delegated the authority they need for mission accomplishment. The operational commander—usually the JFACC—must connect these tactical actions to higher goals. This is done through the centralized planning and direction that goes into the air tasking order. During execution, however, if the JFACC needs to make real-time adjustments to adhere to the operational and strategic objectives, the JFACC can and should do so. Just as importantly, the commander should take proactive steps to adjust his command and control system so that future tactical operations can remain decentralized to the maximum extent possible.

For these reasons, the best bumper sticker for the master tenet is *centralized command and control at the strategic and operational levels of war, decentralized execution at the tactical level*. This faithfully and concisely conveys what Airmen have learned regarding employing airpower in military operations.

Beyond the Bumper Sticker—Doctrine that Deals with Complexity

We must go beyond the bumper sticker and teach our Airmen what we believe about airpower. This is where doctrine plays a critical role. Doctrine codifies our best practices and lessons learned. It also helps Airmen to verbalize and explain their fundamental beliefs. Something, however, about the current language in AFDD 1 (Draft), *Air Force Basic Doctrine*, and JP 3-30, *Command and Control for Joint Air Operations*, gets in the way. The following is proposed language to include in AFDD 1 (and summarized in JP 3-30). It is meant to explain the *why* behind the master tenet. It helps to teach Airmen, and others in the joint community, how to deal with real-world complexity

by clarifying the trade-offs between centralization and decentralization of airpower.

Centralization versus Decentralization in Air Operations

Whenever airpower is included as an element of a military operation, one of the most important considerations—perhaps *the* most important consideration—is the degree of centralization versus decentralization in airpower command and control.¹¹² Although many choices abound, no set answers exist, causing details of every situation to be different. From early experiments in World War I to irregular conflicts in Iraq and Afghanistan, airmen have learned that the question of centralization versus decentralization is what strategist B. H. Liddell Hart calls a *duality* in warfare. “Like a coin, it has two faces,” he writes, “hence the need for a well-calculated compromise as a means to reconciliation.”¹¹³ In other words, there is always a trade-off between the centralization and decentralization of air operations. Commanders, therefore, must use their best judgment when instituting the critical command relationships that drive the nature of air operations. In doing so, it is wise to consider the lessons of previous experiences.

The trade-off of airpower centralization emerged in World War I, as decentralized operations were proven best for airplanes used in such tactical roles as artillery spotting and observation. On the other hand, the successful use of airpower in supporting Gen John Pershing’s operational objective of Saint-Mihiel depended upon the centralized direction of over 1,500 aircraft by General Mitchell. The issue of centralization rose to the forefront, however, in World War II. The disastrous use of airpower in the early stages of the Allies’ North African Campaign led to a major shift in US doctrine. The core problem was that Allied commanders had divided airpower in a way that made it difficult to shift air assets in response to Luftwaffe attacks. Numerous separate air operations, famously described by British air chief marshal Sir Arthur Tedder as penny packets, diluted airpower so that it was ineffective. The US reaction was to codify the following statement in Field Manual 100-20,

Command and Employment of Airpower: “Control of available air power must be centralized and command must be exercised through the air force commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited. . . . The superior commander will not attach army air forces to units of the ground forces under his command except when such ground force units are operating independently or are isolated by distance or lack of communication.”¹¹⁴

While the Allies followed this guidance generally for the rest of the war, it also became apparent that a degree of decentralization allowed for both effectiveness and flexibility at the tactical level. While air forces were not attached to ground forces, they did develop habitual working relationships that aided in teamwork. General Quesada observed that “of all the lessons we learned about tactical air operations, perhaps the most important is that the air commander, his group, and squadron commanders must have a sincere desire to become part of the ground team. The Army must, of course, have the same dedication to reciprocate. This close liaison can only come from close day-to-day contact—especially at command levels; there must be almost instantaneous communication between ground and air and through all the chain of command.”¹¹⁵

Airmen in World War II dealt with the tension between centralization and decentralization by recognizing the trade-offs between the two and adopting solutions that fit their particular situations. Generally, when air operations were aimed at achieving operational and strategic effects, they were fairly centralized. Tactical operations, on the other hand, were decentralized. Air Force commanders followed suit in subsequent operations in places like Korea, Vietnam, Bosnia, Iraq, and Afghanistan. Their experience offers today’s Airmen important insights into the duality of centralization and decentralization. Yet, experiences in World War II, as well as numerous operations thereafter, have taught Airmen that the right balance of centralization and decentralization depends on answers to the following questions.

What Is the Nature of the Operation?

A careful assessment of the military situation is critical in determining the appropriate degree of centralization. Different

situations will drive different balances. For example, a campaign employing strategic attack as a line of operation will require a high degree of centralization under an air commander. The air commander must have the authority to direct operations, including attack sequencing, and shift them as operations unfold. In contrast, tactical air operations in direct support of ground commanders, such as close air support and armed overwatch, are most effective when conducted with a high degree of decentralization. While the air commanders need to reserve the authority to shift assets, it is usually best for airpower to be allocated and distributed through tactical command and control nodes such as the ASOC and then to allow airmen to work directly with the ground commander to preserve tactical responsiveness. Furthermore, such missions as interdiction and counterair require a mix of centralization and decentralization, as centralized direction at the operational level of war is necessary to direct the overall priorities and weights of effort, but decentralized execution at the tactical level allows for a faster tempo of operations.

Where Should Flexibility Be Preserved?

A command and control structure designed to ensure flexibility at the operational and strategic levels of war almost always requires restrictions at the tactical level, and the opposite is true as well. It is important, therefore, that commanders decide the appropriate level to preserve flexibility. Nuclear operations, for example, are highly centralized—for good reason. They are designed to give the president flexibility at the strategic level, so they are highly restricted at the tactical level. Conversely, counterinsurgency operations tend to be highly decentralized, ensuring flexibility for the tactical commanders to increase legitimacy and influence within the population. Other military missions tend to fall somewhere between these two extremes.

Often, the appropriate degree of centralization and decentralization depends less on specific military actions and more on the political consequences of these actions. In Operation Deliberate Force, the JFACC employed a high degree of centralization, not because the military situation demanded it, but because the political situation was tenuous. “If we had committed

one atrocity from the air,” he explained, “NATO would forever be blamed for crimes, and the military threat would be lessened.”¹¹⁶ The JFACC preserved the ability to conduct operations (strategic-operational level) by restricting what pilots could and could not do (tactical level). A little more than a decade later, however, things were much different. NATO air operations in Afghanistan could be conducted in a much more decentralized way, as the political environment had changed dramatically. Such decentralized operations promote effectiveness and preserve flexibility at the tactical level, and there is wide agreement among the services that decentralized execution is preferable whenever the situation allows.

How Many Assets Are Available?

Simply stated, if plenty of assets are available, air operations can be highly decentralized with a low risk of dilution. Unfortunately, this is almost never the case, because air assets are usually limited, and their capabilities are highly desired by the joint force. Fewer assets drive the need for more centralization—specifically centralized apportionment. Consider the example of space operations. US satellites are limited in number, yet their capabilities are in high demand. This is one of two main reasons space operations tend to be centrally controlled. The other is that they can create effects on a global scale, which leads to the next question.

What Is the Geographical Range of Effects?

Another key factor is the geographical range of airpower. Few benefits abound to centralizing command and control of assets with a limited range, such as some rotary-wing and unmanned systems, as it is difficult to shift them to other missions. Once the initial allocation decision is made, it is usually best to allow these to be decentralized. A great benefit, however, exists in centralizing control over assets that can range over a theater or more. Because they can readily shift from one specific objective to another, commanders should create command and control structures that allow this shifting in reaction to changing priorities. Air mobility assets, for example, can move people, supplies, and equipment across the globe, and the Air Force has

generally chosen to centralize control of long-range airlifters. Likewise, the Air Force employs bombers that can conduct precision strikes anywhere on Earth, and these tend to be centrally controlled as well. As the Air Force continues to develop its perspective on cyberspace operations, it is likely that command and control will be centralized due to wide-ranging effects.

In addition, commanders should consider interactions between airpower elements when determining command-and-control constructs. Creating synergy between assets that operate over long distances usually requires a greater degree of centralization. In Operation Enduring Freedom, the JFACC controlled a mixture of long-range bombers and fighters and ISR and air refueling assets. In addition, the JFACC coordinated support from numerous space capabilities. This created a potent synergy to support the operation's overall objectives. Centralized command and control at the operational level was required for this, but decentralized execution at the tactical level was also a key factor, as bombers, fighters, and ISR assets worked directly with the ground commanders through joint terminal attack controllers to provide devastating fires as well as the invaluable situational awareness that comes with the above-ground perspective.

Who Has the Best Situational Awareness?

A final—and perhaps the most important—consideration is determining who in the command-and-control construct has the highest amount of situational awareness. Generally, the commander or operator with the best situational awareness should have the authority to make real-time decisions, as this helps to maintain a high tempo. During an air-to-air engagement, the pilots and air battle managers involved generally have the highest awareness of the tactical fight. Once the decision to engage is made by the appropriate authority (either through predetermined rules of engagement or a real-time decision), it is best for all higher commanders to allow the engagement to be run by the people involved in the fight. Alternatively, during time-sensitive targeting operations (which often support operational and strategic objectives), the node with the best

situational awareness is often the AOC, and a high degree of centralization makes success more likely.

In general, the most successful air operations have incorporated enough centralized command and control to promote effectiveness and preserve flexibility at the strategic and operational levels of war, while taking advantage of a high degree of decentralized execution, normally at the tactical level, to encourage high-tempo operations. Airmen are committed to centralization because airpower can have operational and strategic effects when synchronized across the entire battlespace. In contrast, decentralized execution is the norm, not the exception, for tactical operations. Senior leaders may need to exercise centralization over tactical operations when there are pressing operational and strategic consequences, and there is no other way to mitigate mission risk (that is, communication of commander's intent, pushing of real-time information to lower echelons, and training subordinate commanders to act appropriately). In this way, the competing pulls of centralization and decentralization are closely connected with the higher and lower levels of war, and the master tenet of airpower can be summarized "as centralized command and control at the strategic and operational levels of war, decentralized execution at the tactical level."

In all operations, centralized command and control should be conducted by an airman who ensures that tactical air operations are connected to operational and strategic objectives. That airman is usually the JFACC, who acts as both a functional expert and a subordinate commander of a functional component in a joint force. The JFACC commands and controls air operations on behalf of the JFC to attain joint operational and strategic objectives. This is done through the centralized planning and direction that goes into the air tasking order. During execution, however, if the JFACC needs to make real-time adjustments to adhere to the JFC's operational and strategic objectives, he or she can and should do so. Just as importantly, he or she should take proactive steps to adjust the command and control system and communicate the commander's intent to subordinate echelons so that future tactical operations can remain decentralized to the maximum extent possible.

The JFACC's command and control system, also called the tactical air control system (TACS), must be flexible. In certain stages and phases, the TACS must be highly centralized, with the AOC taking the lead in many activities. In other phases, especially during irregular warfare and stability operations, a highly decentralized TACS is more likely to be effective, and such subordinate elements of the TACS as the ASOC will have a large role to play. At all times, the JFACC maintains the ability to adjust operations if the strategic/operational environment changes. The art of airpower command and control is finding the right balance between centralization and decentralization in light of the specific situation. The questions presented above can help in achieving this balance.

Applying an Updated Doctrine to Current Challenges

If this doctrine were in place today, we might choose different command constructs and relationships to deal with the challenges we face. For example, in the USCENTCOM AOR, asking the five questions would lead to interesting answers.

1. What is the nature of the operation? In contrast to the initial phases of Operations Enduring Freedom and Iraqi Freedom, military operations in Afghanistan and Iraq are highly decentralized, with a great degree of authority, including planning and execution authorities, delegated to tactical commanders of relatively low rank. In addition, the operations in Afghanistan and Iraq have different characters, and senior leaders in Kabul and Baghdad implement distinctly different campaign plans. These commanders are aided by their staffs, which are organized differently—in fact, they hardly resemble each other at all. Trying to integrate a single AOC into these separate and unique headquarters has been a difficult fit. Specifically, due to geographical separation and personnel rotation policies, it has been difficult to establish personal relationships between the staff.
2. Where should flexibility be preserved? In Iraq and Afghanistan, the ground commanders believe that flexibility must be preserved at the tactical level of war within the overall

operational and strategic guidance. To airmen, this means that most military operations will be highly dynamic and require the ability to rapidly direct changes to the original plan. At the operational level, however, some degree of flexibility must be preserved to shift airpower to address such unexpected challenges as Operation Medusa or the incident in an-Najaf.

3. How many assets are available? Despite the commitment of numerous units and hundreds of air assets by the United States and coalition partners to the theater, demand for airpower in USCENTCOM greatly exceeds supply. This means that a degree of centralization at the operational level is required to ensure that all assets fly and none sit idle. The dramatic increase in ISR assets throughout the joint force, however, means that it is possible to assign some of these assets to engaged units on a semi-permanent basis.
4. What is the geographical range of effects? In USCENTCOM, some air assets have global reach (C-17s on aeromedical evacuation missions), some can range throughout the theater (B-1s providing CAS and overwatch in either Iraq or Afghanistan), and some are limited to one part of the theater (A-10s providing CAS in the middle of Iraq). While all assets can theoretically move around according to need, practical basing considerations and directives from senior commanders, including apportionment decisions by the USCENTCOM commander, prevent this in many cases. The result is that many assets are confined to one part of the theater.
5. Who has the best situational awareness? The answer to this is that “it depends.” Generally, for operations within Iraq and Afghanistan, especially such tactical missions as overwatch, CAS, electronic warfare, and some ISR missions, the situational awareness grows with proximity to the tactical commanders. Alternatively, the CFACC’s AOC enjoys a high degree of situational awareness at the operational level that greatly aids in shifting assets between

Iraq and Afghanistan as well as keeping track of ongoing developments in other parts of the AOR.

In light of these answers, the senior airman in USCENTCOM might well conclude that he or she needs to keep a degree of centralized command and control for certain authorities and activities while decentralizing other operations to gain tactical effectiveness. In the specific case of Iraq and Afghanistan, the CFACC would probably conclude that the demands of the current campaign phases drive the need to delegate some degree of authority to airmen who are in face-to-face contact with the commanders there. Of course, there are relatively senior Airmen in the respective headquarters who represent the CFACC—they are the directors of the air component coordination element (ACCE). Unfortunately, these Airmen have little planning or execution authority and are somewhat marginalized in the headquarters in which they sit.

One option available to the CFACC is to delegate some degree of short-term planning and execution authority down to airmen in the forward headquarters, perhaps the ACCE directors, while keeping overall authority over air assets in the theater. In the current situation, it would make sense to delegate planning and execution authority for tactical ISR operations as well as overwatch and CAS. The CFACC would retain authority to swing directly such assets as long-range bombers/fighters, air refueling, and intratheater airlift assets. Generally, the CFACC would determine where the swing assets would go, and then he or she would delegate the planning and execution for these assets to airmen in the forward headquarters. If something were to change at the strategic/operational level, however, the CFACC would maintain the ability to adjust air operations accordingly.

Additionally, the CFACC could push planning expertise out of the AOC and down to lower echelons of the tactical air control system, specifically the ASOC and TACPs. Due to the high tempo of operations, the battlefield Airmen assigned to the TACPs rarely have time to plan missions; they are constantly involved in their execution. Furthermore, these Airmen are trained to provide expertise in CAS and armed overwatch. They do not have expertise in synchronizing and integrating ISR, electronic warfare, space, and other forms of airpower. In the

current phases of the campaigns in Iraq and Afghanistan, it makes sense to augment the ASOC and TACPs with Airmen—like the ISR liaison officers mentioned earlier—who can provide this planning expertise by direct interface with the ground commanders. To be credible, these Airmen must be skilled in air-power integration and sufficiently articulate to communicate the best uses for airpower to busy ground commanders. They must also be of sufficient rank to carry weight within the Army culture. While these planners would operate under their respective elements within the theater air-control system, they would also act as planning liaisons between the CAOC (especially the Strategy, Plans, and ISR Divisions) and the separate ground headquarters where the meaningful planning takes place. These steps would go a long way in bridging the operational-tactical disconnect that hinders airpower integration today.

One Last Lesson from History: Gen George C. Kenney and the Advanced Echelon

It is helpful for Airmen to understand that delegating planning and execution authority to forward commanders is not novel. Gen George C. Kenney, “perhaps the most effective air commander in World War II,” used a similar construct while serving as Gen Douglas MacArthur’s senior Airman in the Southwest Pacific.¹¹⁷ After surveying the situation there, Kenney decided that his proper place was in MacArthur’s headquarters, but he also needed to send an air commander forward to conduct daily operations.¹¹⁸ General Kenney maintained overall responsibility as the 5th Air Force commander, but he delegated a significant amount of authority forward to Brig Gen Ennis C. Whitehead at the 5th Advanced Echelon (abbreviated 5th Advon).¹¹⁹ In his informative biography of Kenney titled *MacArthur’s Airman*, Col Thomas Griffith describes this move.

Forming this headquarters was an unusual step and had no precedent in prewar American air doctrine, yet Kenney made the move for a number of reasons. . . . In his role as the Allied Air Forces commander he had to stay in Brisbane to help plan and coordinate operations with MacArthur and the land and naval commanders. . . . He needed someone at Port Moresby whom he could trust to oversee operations and provide American control of the missions. “Fifth Advon” under Ennis

Whitehead was the answer. . . . Whitehead had the authority to change previously assigned mission based on weather, new intelligence, or the number of aircraft available. Furthermore, since Whitehead worked directly with the ground commanders in New Guinea, he could send flights to support the ground forces on short notice. In short, Whitehead's control over the day-to-day combat operations gave air units much needed flexibility to respond quickly to changing situations. The advanced headquarters also left Kenney free to concentrate on a myriad of other activities, such as finding ways to keep more aircraft flying and improving training and morale.¹²⁰

General Kenney understood the art of command and control. His approach was practical, not dogmatic. Despite a lack of doctrine, he adopted a command and control system to fit the situation. Today's Airmen can learn much from his example (fig. 14).

Conclusion

Over the course of airpower history, airmen have discovered that there are always trade-offs between centralization and de-

	<p><i>In short, Whitehead's control over the day-to-day combat operations gave air units much needed flexibility to respond quickly to changing situations. The advanced headquarters also left Kenney free to concentrate on a myriad of other activities, such as finding ways to keep more aircraft flying and improving training and morale.</i></p>
<p>Above: General George C. Kenney, Commander, 5th Air Force and senior air adviser to General MacArthur in the Pacific</p>	
<p>Right: Brigadier General Ennis Whitehead, 5th Advon Commander</p>	<p>Thomas Griffith MacArthur's Airman</p>

Figure 14. Control over day-to-day operations. (Compiled by the author.)

centralization in airpower command and control. The art is finding the right balance, and that is where airmen have had great difficulty, especially in the years following Operation Desert Storm. Such operations as Deliberate Force and Allied Force led airmen to fear that advanced communication technologies were encouraging airpower leaders to overcentralize. The initial phases of Operations Enduring Freedom and Iraqi Freedom seemed to restore balance, but the irregular conflicts that followed presented serious challenges to airmen and their belief in the master tenet.

We must face these challenges head on. A big reason others have challenged us is that we have not been able to explain the master tenet cogently. This is partially due to the words we have chosen for our bumper sticker, and it is partially because we do not understand the history and theory behind the doctrine. Instead, we have doggedly held on to comfortable command-and-control constructs that are less than effective in the current environment. When we justify this with the sound bite “centralized control and decentralized execution,” we risk diminishing our doctrine into dogma status. That is why this mantra is now a catchphrase in crisis.

When we return first to principles based on historical experience, however, we find that the master tenet is as relevant today as it was in previous conflicts. Whenever there are limited resources, there must be some degree of centralized command and control. This is especially true at the strategic and operational levels of warfare. At the same time, decentralized execution allows for major gains in flexibility and tempo at the tactical level. This is true for all forms of military power, but airpower’s characteristics, including speed and geographical range, mean that its command and control tends to be more centralized than for other forms. This is especially true when airpower is applied directly to achieve operational and strategic effects. In contrast, when airpower plays a largely tactical role, an emphasis on decentralized execution works best. Linking the degree of centralization to the levels of war helps Airmen to find the right balance.

Well-written doctrine also helps to achieve an effective balance. Specifically, our doctrine should teach airmen about the history of the master tenet, and instead of prescribing a set solu-

tion, it should help senior airmen deal with complexity by proposing questions for them to ask. The answers will help to determine the way they should set up their command and control system. This doctrine will discourage one-size-fits-all solutions to airpower command and control, instead giving commanders room to develop flexible constructs that best fit the situation.

Given the situations in Iraq and Afghanistan, adopting command-and-control constructs that emphasize decentralization is the right thing to do because airpower operations are largely tactical in nature. Instead of a command and control structure that is top-heavy at the AOC, a more decentralized structure that emphasizes the subordinate elements of the TACS is more likely to work, especially in light of historical lessons learned. Given the heavy emphasis on operations in Iraq and Afghanistan—two vastly different operations—it may even make sense to give authority for day-to-day operations to a senior airman acting as a forward commander. This would mimic the best practice of General Kenney, who found himself in a similar situation. Understand, however, that this may not be the answer for a modern conflict in the Pacific or elsewhere.

When creating or adjusting their command-and-control constructs, all commanders, including air commanders, must understand no single way exists to balance centralization and decentralization. Trade-offs between the two will occur, and adopting the right approach requires a solid assessment of the situation as well as a judgment informed by theory, history, and personal experience. This is what the successful previous commanders were able to do. By making a few adjustments to the way we explain and teach our master tenet, we will enable future commanders to enjoy similar success.

Notes

1. In this paper, I use the term *airman* (or *airmen*) in a generic sense, referring to someone who understands and appreciates the full range of air and space power capabilities and can employ or support some aspect of air and space power. I only capitalize *airman* (or *airmen*) when referring specifically to a member of the United States Air Force.

2. B. H. Liddell Hart, *Strategy*, 2d ed. rev. (New York: Penguin Books, 1991), 329.

3. B. H. Liddell Hart, *Paris or the Future of War* (London: Garland Publishing, Inc., 1972), 12.
4. Martin van Creveld, *Command in War* (Cambridge, MA: Harvard University Press, 1985), 6.
5. *Ibid.*, 274.
6. Mahan expresses his ambivalence at critiquing Nelson and Collingwood: "An ordinary man rather shrinks from criticizing the action of officers of their eminence." Alfred Thayer Mahan, *Influence of Sea Power upon History, 1660–1783* (New York: Dover Publication, Inc., 1987), 353.
7. *Ibid.*, 354.
8. *Ibid.*
9. *Ibid.*, 357.
10. Van Creveld, *Command in War*, 274.
11. Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States*, 14 May 2007, IV–15.
12. US Army Field Manual (FM) 3-0, *Operations*, February 2008, 3–6.
13. Lee Kennett, *First Air War: 1914–1918* (New York: Free Press, 1991), 87.
14. Mark A. Clodfelter, "Molding Airpower Convictions: Development and Legacy of William Mitchell's Strategic Thought," in *The Paths of Heaven: Evolution of Airpower History*, ed. Phillip Meilinger (Maxwell AFB, AL: Air University Press, 1997), 86.
15. Kennett, *First Air War*, 90–92.
16. David Syrett, "Northwest Africa, 1942–1943," in *Case Studies in the Achievement of Air Superiority*, ed. Benjamin Franklin Cooling (Washington, DC: Air Force History and Museums Program, 1994), 227–33.
17. Lord Arthur W. Tedder, "Air, Land, and Sea Warfare," *Journal of the Royal United Services Institute*, January 1946, 61.
18. War Department Field Manual 100-20, *Command and Employment of Air Power*, 21 July 1943, 2.
19. Air Force Manual (AFMAN) 1-2, *United States Air Force Basic Doctrine*, March 1953, 5.
20. AFMAN 1-1, *Basic Aerospace Doctrine of the United States Air Force*, March 1992, 114.
21. *Ibid.*, 28 September 1971, 2–1.
22. *Ibid.*, 15 January 1975, 31.
23. *Ibid.*, March 1992, 114.
24. See JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001, as amended through 4 March 2008, for the official definitions of *apportionment* and *allocation*.
25. JP 3-30, *Command and Control for Joint Air Operations*, 5 June 2003, II-2.
26. Air Force Doctrine Document (AFDD) 2-1, *Air Warfare*, 22 January 2000, 50.
27. JP 3-30, *Command and Control for Joint Air Operations*, II-1.
28. *Ibid.*, III-18.

29. Lt Col Robert D. Pollock, "Roads Not Taken: Theoretical Approaches to Operation Deliberate Force," in *Deliberate Force: A Case Study in Effective Air Campaigning*, ed. Col Robert C. Owen (Maxwell AFB, AL: Air University Press, 2000), 433–34.

30. See the discussion about tanks and their relationship to the infantry in David E. Johnson, *Fast Tanks and Heavy Bombers: Innovation in the U.S. Army, 1917–1945* (Ithaca, NY: Cornell University Press, 1998).

31. This follows an interesting argument articulated by Stephen Covey in the popular book, *Seven Habits of Highly Effective People* (New York: Simon and Schuster, 1989). Covey asserts that *independence* is a prerequisite for *interdependence*. Based on his work, it's reasonable to assume that Covey would argue that airmen needed a degree of independence before they could assume an interdependent role.

32. Van Crevelde, *Command in War*, 1.

33. *Ibid.*, 5.

34. *Ibid.*, 6.

35. JP 1-02 defines *command* as "1. The authority that a commander in the armed forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel." JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001, as amended through 4 March 2008.

36. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001, as amended through 4 March 2008.

37. *Ibid.*

38. If not centrally commanded and controlled, the possibility exists that long-range bombers, intertheater airlifters, intelligence satellites, or network-attack assets could be assigned to support one mission in one theater, but the situation could change so that their effects would be greater if used for another mission in another theater. Centralized command allows for timely shifting of assets and the effects they create, even if it is across the globe.

39. Col Phillip S. Meilinger, *10 Propositions Regarding Airpower* (Air Force History and Museums Program, 1995), 49, 52–53.

40. JP 1-02, *DOD Dictionary of Military and Associated Terms*, 12 April 2001, as amended through 4 March 2008. Regarding air operations, Lt Col Woody W. Parramore, USAF, retired, makes a cogent argument that this definition should be changed to read "delegation of execution authority to subordinate commanders or subordinate elements of a command and control system to accomplish their assigned tasks." This correctly acknowledges that the JFACC does not delegate authority to wing, group, and squadron commanders. Instead, he or she delegates authority down to subordinate echelons in the theater air control system (TACS) such as joint terminal attack controllers, mission commanders, and flight leads. Lt Col Woody W. Parramore, USAF, retired, "Defining Decentralized Execution in Order to Recognize

Centralized Execution,” *Air and Space Power Journal*, Fall 2004; available at <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj04/fal04/parramore.html> (accessed 12 June 2008).

41. Maj Mark G. Davis, “Centralized Control/Decentralized Execution in the Era of Global Reach,” *Joint Force Quarterly*, Summer 2003, 96.

42. For example, in his thesis at the School of Advanced Air and Space Power Studies, Maj Steven Ankerstar, USAF, laments, “The lack of a clear definition of centralized execution in Air Force Basic Doctrine leads to confusion and unfortunately leaves the term open to interpretation. Air Force doctrine refers to the dangers of centralized execution, but without defining it, the term has no real substance.” Maj Steven E. Ankerstar, “Beyond Centralized Control and Decentralized Execution” (master’s thesis, School of Advanced Air and Space Power Studies, Air University, Maxwell AFB, AL, June 2005), 7. In addition, Colonel Parramore writes, “Because the definition of decentralized execution is imprecise, Airmen cannot coherently define the concept or recognize centralized execution.” Woody W. Parramore, “Defining Decentralized Execution in Order to Recognize Centralized Execution,” *Air and Space Power Journal*, Fall 2004.

43. AFDD 1 (Draft), *Air Force Basic Doctrine*, Topline Coordination Draft, version 3, 19 June 2007, 31.

44. JP 3-0, *Joint Operations*, 17 December 2006, A-2.

45. Quoted in Col Charles M. Westenhoff, *Military Airpower: A Revised Digest of Airpower Opinions and Thoughts* (Maxwell AFB, AL: Air University Press, 2007), 222–23.

46. In US standard usage, “the *combined* adjective replaces *joint*” when forces from more than one country are involved.

47. When one combines the fact that the CFACC also acted as the commander of all Air Force forces (also called the COMAFFOR) in-theater as well as the commander of 9th Air Force back in the states, one can safely say that the CFACC had a lot on his plate!

48. One issue that has arisen repeatedly is that of rotation policies. Army units have generally rotated in 12–15 month increments, while many Air Force positions—even those serving with the MNC-I staff—rotate every four months in accordance with the Air Expeditionary Force cycle. As one Army after-action report stated, this is an impediment to building close working relationships: “The Air Force rotation policy has caused a level of consternation with the MNC-I staff. The staff perspective is that this is a team fight and the whole team must be committed and fighting together for the entire period.”

49. Bruce Rolfsen, “USAF Aerial Ops in Iraq, Afghanistan Take Off in '07,” *Defense News*, 3 December 2007.

50. See the online Central Intelligence Agency, *The World Factbook* for population, area, terrain, and other data at <https://www.cia.gov/library/publications/the-world-factbook/>.

51. Others came to this conclusion as well. In early 2007, in two separate reports written within weeks of each other, Gen Barry R. McCaffrey, US Army, retired, described the situations in Iraq and Afghanistan. In the report on

Afghanistan, he relayed how “US Air Force and Naval air power is the monster combat multiplier.” In contrast, airpower is mentioned only in passing. Gen Barry R. McCaffrey, US Army, retired, “After Action Report: VISIT AFGHANISTAN AND PAKISTAN, 16–23 February 2007,” 26 February 2007; and “After Action Report: VISIT IRAQ AND KUWAIT, 9–16 March 2007,” 26 March 2007.

52. Capt Edward Stewart, “Operation Medusa,” *The Allied Rapid Reaction Corps (ARRC) Journal*, Spring 2007, 28–31; available at <http://www.rrc.nato.int/journal/spring07/index.htm> (accessed 29 May 2008).

53. Adam Day, “Operation Medusa: The Battle for Panjwai (Part 1),” *Legion Magazine*, 1 September 2007; available at <http://www.legionmagazine.com/en/index.php/2007/09/operation-medusa-the-battle-for-panjwai/> (accessed 29 May 2008).

54. Tim Albone, “Amid the Thud of Artillery, Soldiers Stormed into a Taliban Stronghold,” *Times Online*, 14 September 2006; available at <http://www.timesonline.co.uk/tol/news/world/article1073949.ece> (accessed 2 June 2008).

55. Stewart, “Operation Medusa,” 28–31.

56. Day, “Operation Medusa (Part 1).”

57. *Ibid.*

58. *Ibid.*

59. Stewart, “Operation Medusa,” 28–31.

60. Canadian major Mathew Sprague, commander of the company that would pay a steep price for entering the Taliban-controlled valley, recalled, “In the original brigade instruction, once I had confirmed that there were no civilians present, a pre-arranged air strike using precision guided munitions was supposed to simultaneously hit between 10 and 20 known insurgent command and control nodes. For whatever reason, this didn’t happen and the strike was cancelled by the brigade.” Day, “Operation Medusa (Part 1).”

61. *Ibid.*

62. Mitch Potter, “The Story of C Company,” *Toronto Star*, 30 September 2006.

63. Day, “Operation Medusa (Part 1).”

64. Murray Brewster, “Fatigue Possible Friendly-Fire Factor: Report,” *Toronto Star*, 8 April 2007.

65. Day, “Operation Medusa (Part 3),” *Legion Magazine*, 26 January 2008; available at <http://www.legionmagazine.com/en/index.php/2008/01/operation-medus-part-3-the-fall-of-objective-rugby/> (accessed 10 June 2008).

66. “Friendly Fire Incident in Southern Afghanistan,” ISAF Press Release 2006–128, 4 September 2006.

67. “Soldier Killed as Mountain Fury, Other Ops Continue in Afghanistan,” American Forces Press Service, 17 September 2006.

68. When they learned of these operations being planned simultaneously in separate chains of command, the AOC Strategy Division expressed concerns to planners in Afghanistan that airpower would be stretched to the maximum (and possibly beyond) if the operations were executed at the same time. Despite this warning, commanders decided to press ahead with simultaneous operations.

69. Day, "Operation Medusa, (Part 3)."

70. General McCaffrey, an astute observer of operations in Central Command, noted that this was still possible even after Medusa. After visiting Afghanistan in 2007, he documented this concern in his after-action report: "It is possible that the Taliban will try to knock one or more of these NATO nations out of the war. A major blow to the Italians, the Canadians, the Dutch, the Spanish, or the Germans might shatter their weak domestic political support." Gen Barry R. McCaffrey, US Army, retired, "After Action Report: VISIT AFGHANISTAN AND PAKISTAN, 16–23 February 2007," 26 February 2007.

71. In 2007 the AOC's Strategy Division conducted an assessment that compared insurgent activity with the presence of airpower. There was a correlation between the presence of airpower and a lack of activity—insurgents did not want to risk detection by NATO airpower.

72. Coghlan, "Taliban Fighters Back in Caves of Tora Bora," *UK Telegraph*, 19 June 2007; available at <http://www.telegraph.co.uk/news/worldnews/1554896/Taliban-fighters-back-in-caves-of-Tora-Bora.html> (accessed 11 June 2008).

73. Coghlan, "Afghanistan: Return to the Lair of bin Laden," *UK Telegraph*, 24 August 2007; available at <http://www.telegraph.co.uk/news/worldnews/1567/Afghanistan-Return-to-the-lair-of-bin-Laden.html> (accessed 11 June 2008).

74. "Tora Bora Offensive Continues against Taliban, al-Qaeda," Radio Free Europe, 17 August 2007; available at <http://www.rferl.org/featuresarticle/2007/08/360B8D5B-24A8-48B0-8771-A803FA7E576C.html> (accessed 11 June 2008).

75. US Army FM 3-24, *Counterinsurgency*, states: "Effective COIN operations are decentralized, and higher commanders owe it to their subordinates to push as many capabilities as possible down to their level." US Army FM 3-24, *Counterinsurgency*, 15 December 2006, 1–26.

76. For example, Lt Gen Raymond Odierno writes this about ISR liaison officers sent by the air component to the divisions in Iraq: "Providing these Air Force subject matter experts as advisors to division staff sections and as key members of the intelligence-operations team has been a combat multiplier." Raymond T. Odierno, Nichol E. Brooks, and Francesco P. Mastracchio, "ISR Evolution in the Iraqi Theater," *Joint Force Quarterly*, Issue 50, 3d Quarter 2008; available at http://www.ndu.edu/inss/Press/jfq_pages/editions/i50/14.pdf (accessed 11 June 2008).

77. In an interesting historical note, this compromise mirrored the approach taken by Royal Air Force airmen during similar operations in Malaya. Group Captain K. R. C. Slater writes in *Air Operations in Malaya*, "The problem of reconciling decentralized control of ground operations with centralized control of air operations presented many difficulties. A number of experiments were tried out with the object of trying to decentralize a measure of control of air operations in parallel with the break-down of control of ground operations, but the fact that air effort is indivisible invariably undermined these arrangements in practice. Eventually, after a good deal of trial and error, a workable compromise was reached whereby the local State and District

War executives were able to call upon the services of a mobile team of Air Staff planners, established on the Air Headquarters, whilst control of air operations remained centralized under the Air Officer Commanding." Quoted in AFDD 2-3, *Irregular Warfare*, 1 August 2007, 67.

78. For an interesting discussion of the importance of the bombing, see Thomas E. Ricks, "Shrine Bombing as War's Turning Point Debated," *Washington Post*, 13 March 2007; available at http://www.washingtonpost.com/wp-dyn/content/article/2007/03/12/AR2007031201760_pf.html (accessed 4 June 2008).

79. Michael R. Gordon, "Military Charts Movement of Conflict in Iraq toward Chaos," *New York Times*, 1 November 2006; available at http://www.nytimes.com/2006/11/01/world/middleeast/01military.html?_r=1&oref=slogin (accessed 4 June 2008).

80. The AOC Strategy Division collected many accounts where insurgents seemed to ignore the shows of force in areas where no ordnance had been employed for lengthy periods.

81. The Iraq Study Group Report, published in December 2006, began with these pessimistic words: "There is no guarantee for success in Iraq. The situation in Baghdad and several provinces is dire. Saddam Hussein has been removed from power and the Iraqi people have a democratically elected government that is broadly representative of Iraq's population, yet the government is not adequately advancing national reconciliation, providing basic security, or delivering essential services. The level of violence is high and growing. There is great suffering, and the daily lives of many Iraqis show little or no improvement. Pessimism is pervasive." *Iraq Study Group Report*, 6 December 2006, 9; available at http://www.usip.org/isg/iraq_study_group_report/report/1206/iraq_study_group_report.pdf (accessed 4 June 2008).

82. Joint doctrine defines *close air support* (CAS) as "air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces." JP 3-0, *Joint Operations*, 17 September 2006, GL-9. Technically, CAS begins when troops come into contact, and the commander decides to request airborne fires. It ends when these fires are no longer necessary. Conversely, the desired effect in question begins when the mission begins—as airborne platforms offer the ground commander situational awareness during active operations—and ends with mission completion. Another distinction occurs when an airborne platform has a weapons malfunction or goes "Winchester" (i.e., runs out of weapons). In CAS, it is standard practice for the asset to return to base. In COIN operations, however, the ground commander often asks the asset to remain on station, as access to the aerial perspective is more important than the ability to employ weapons.

83. John A. Tirpak, "Eyes of the Fighter," *Air Force Magazine*, January 2006, 41; available at <http://www.afa.org/magazine/jan2006/0106fighters.pdf> (accessed 4 June 2008).

84. *Ibid.*, 42; available at <http://www.afa.org/magazine/jan2006/0106fighters.pdf> (accessed 4 June 2008).

85. SSgt Melissa Koskovich, "Targeting Pods Enhance Battlefield Awareness," US Central Command Air Forces Public Affairs, 29 March 2006; available at <http://www.af.mil/news/story.asp?id=123018059> (accessed 4 June 2008).

86. For a discussion of armed overwatch, see Lt Col Clint Hinote, "Armed Overwatch: Key to Successful COIN Operations in Urban Terrain," *Air Land Sea Application Center Bulletin 2008-1*, 9-12; available at <http://www.alsamilitary.com/documents/alsb/ALSB%202008-1.pdf> (accessed 4 June 2008).

87. "'Surge' Taking Place in the Skies Too," Associated Press, 14 July 2007; available at MSNBC.com; and <http://www.msnbc.msn.com/id/19763898/> (accessed 4 June 2008).

88. Sgt Nicole Kojetin, "Reluctant Hero: Apache Pilot Receives Distinguished Flying Cross," 1st Calvary Division Public Affairs, 30 January 2008; available at <http://www.army.mil/-news/2008/01/30/7203-reluctant-hero--apache-pilot-receives-distinguished-flying-cross/> (accessed 4 June 2008).

89. TSgt James Law, "Combat Controller Recounts Battle for AFA Audience," Global Air Chiefs Conference Public Affairs, 25 September 2007; available at <http://www.af.mil/news/story.asp?id=123069491> (accessed 4 June 2008).

90. Ibid.

91. TSgt Jennifer Gregoire, "Air Force Combat Airpower Helps Turn Tide in Decisive Battle of an-Najaf," 332d Air Expeditionary Wing Public Affairs, 4 February 2007; available at <http://www.af.mil/news/story.asp?storyID=123039922> (accessed 4 June 2008).

92. Law, "Combat Controller Recounts Battle for AFA Audience."

93. "Iraqi Cult Planned Attack on Top Shiite Clergy, Officials Say," *USA Today*, 29 January 2007; available at http://www.usatoday.com/news/world/iraq/2007-01-29-iraq-insurgents_x.htm (accessed 4 June 2008).

94. Kojetin, "Reluctant Hero: Apache Pilot Receives Distinguished Flying Cross."

95. David Kilcullen, a key advisor to the top military commander in Iraq, Gen David H. Petraeus, writes, "The key element in the plan, as outlined in the President's speech, is to concentrate security forces within Baghdad, to secure the local people where they live. Troops will operate in small, local groups closely partnered with Iraqi military and police units, with each unit permanently assigned to an area and working its beat. This is different from early strategies which were enemy-centric (focusing on killing insurgents), or the more recent approaches that relied on training and supporting Iraqi forces and expected them to secure the population." David Kilcullen, "Don't Confuse the 'Surge' with the Strategy," *Small Wars Journal* (online), 19 January 2007; available at <http://www.smallwarsjournal.com/blog/2007/01/dont-confuse-the-surge-with-th/> (accessed 16 October 2007).

96. For a description of air operations in support of the elections, see Howard D. Belote, "Counterinsurgency Airpower: Air-Ground Integration for the Long War," *Air and Space Power Journal*, Fall 2006; available at <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/fal06/belote.html> (accessed 11 July 2008). In preparation for the elections, Lt Gen Thomas Metz, MNC-I commander, made his intentions clear regarding airpower: "I

want them low—I want them loud—I want them everywhere! I don't completely understand it, but this population responds to airpower, both fixed- and rotary-wing . . . so get the air out there.”

97. In response to the first day of B-1 operations over Baghdad, the command sergeant major of the US Army division assigned to Baghdad approached one of the battlefield airmen embedded in the division and gave him a huge hug, thanking him for encouraging his troops.

98. For a thoughtful description and analysis of MNC-I operations during this period, see Frederic W. and Kimberly Kagan, “The Patton of Counter-insurgency,” *Weekly Standard*, 10 March 2008; available at <http://www.weeklystandard.com/Content/Public/Articles/000/000/014/822vfpsz.asp> (accessed 11 June 2008).

99. *Ibid.*

100. This term was originally introduced by US Army general William DePuy, and overwatch is a tactic codified in Army maneuver doctrine. The overwatch concept has two fundamental components. First, some part of the force is moving, and this element is somewhat vulnerable. Second, another portion of the force is available that can (1) observe the situation from a defensible position, and (2) provide supporting fires if necessary. While use of the overwatch technique can slow the tempo of the ground advance, it has proven to be an effective force-protection measure. When the overwatching element is airborne, it allows the ground operation to move at a faster tempo. Furthermore, overwatch in urban terrain is more effective when airborne platforms assume the observation role, as the airborne perspective allows the ground commander to see behind walls and around corners. For further discussion, see Lt Col Clint Hinote, “Armed Overwatch: Key to Successful COIN Operations in Urban Terrain,” *Air Land Sea Application Center Bulletin 2008-1*, 9-12; available at <http://www.alsa.mil/documents/alsb/ALSB%202008-1.pdf> (accessed 4 June 2008).

101. A military requirement defined in joint doctrine as “an established need justifying the timely allocation of resources to achieve a capability to accomplish approved military objectives, missions, or tasks.” JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001, as amended through 4 March 2008.

102. Some airmen, including several senior leaders in the CAOC, were initially uncomfortable with the idea of emphasizing hours of coverage. There were two major arguments for using hours as a primary metric, however. First, it was a practical measure that air planners could use to build their master plans. Second, when ground commanders were relying on airpower in much the same way that they would rely on their maneuver forces (that is, in the armed overwatch role), it is logical to conclude that simply “being there” is what is most important.

103. It was common for air planners in the AOC to refer to the MNF-W area of operations as “Route Package Anbar.”

104. JP 1, *Doctrine for the Armed Forces of the United States*, 14 May 2007, V-4.

105. JP 3-30, *Command and Control for Joint Air Operations*, viii.

106. Jim Garamone, "Marine Commandant Worries about Losing 'Expeditionary Flavor,'" American Forces Press Service, 16 October 2007; available at <http://64.233.169.104/search?q=cache:pmzzjc7udzQJ; and www.defenselink.mil/news/newsarticle.aspx%3Fid%3D47818+conway+expeditionary+flavor&hl=en&ct=clnk&cd=1&gl=us> (accessed 19 November 2007).

107. Raymond T. Odierno, Nichoel E. Brooks, and Francesco P. Mastracchio, "ISR Evolution in the Iraqi Theater," *Joint Forces Quarterly* 50, 3d Quarter 2008, 52; available at http://www.ndu.edu/inss/Press/jfq_pages/editions/i50/14.pdf (accessed 11 June 2008).

108. *Ibid.*, 53.

109. *Ibid.*

110. *Ibid.*, 55.

111. Max Boot, *Savage Wars of Peace: Small Wars and the Rise of American Power* (New York: Basic Books, 2002), 282.

112. When this section refers to the command and control of airpower, it means the authority to plan, direct, synchronize, integrate, coordinate, and de-conflict operations on behalf of the overall joint force commander.

113. Liddell Hart, *Strategy*, 329.

114. War Department Field Manual 100-20, *Command and Employment of Air Power*, 21 July 1943, 2.

115. Quoted in Westenhoff, *Military Airpower*, 222-23.

116. Lt Col Bradley S. Davis, "The Planning Background," in *Deliberate Force: A Case Study in Effective Air Campaigning*, ed. Col Robert C. Owen (Maxwell AFB: Air University Press, 2000), 57.

117. Quote from Phillip S. Mellinger, former commandant of the USAF's School of Advanced Air and Space Studies, commenting on Thomas E. Griffith, Jr., *MacArthur's Airman: General George C. Kenney and the War in the Southwest Pacific* (Lawrence, KS: University Press of Kansas, 1998).

118. Griffith, *MacArthur's Airman*, 63-64.

119. *Ibid.*

120. *Ibid.*

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