

FRICITION IN COMMAND AND CONTROL:
SOURCES OF CONFLICT IN MILITARY DOCTRINE

BY
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APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.



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ABSTRACT

This study asks how Airmen and Marines can set aside their differences regarding command and control of airpower, and integrate their forces to accomplish assigned missions. It opens with an in-depth analysis of the command and control doctrine of each service, breaking down the concepts and terminology that Airmen and Marines use to describe command, control, and execution, revealing where they differ, or share common views. This sets the stage for a disciplined analysis of the differences between Air Force and Marine Corps command and control doctrine, using Barry Posen's organizational perspective; referencing the three significant causal forces of purpose, people, and environment. The analysis begins with delineation of each service's roles and missions – its purpose. It continues with a historical analysis of the operational experiences and cognitive development of doctrine and concepts, as influenced by the people that form each service and the environment in which they operate. Beginning in World War I and ending with Operation Desert Storm, the analysis summarizes how each service developed their concepts of airpower.

The study concludes that Airmen and Marines must fully understand roles, missions, and concerns of the other services in order to effectively manage and employ airpower assets in joint warfare. In joint operations, such understanding will reduce friction in command and control relationships. Through comprehension of the role of Air Force mission requirements, Marines will understand how to best support joint airpower. Through understanding of the role of Marine Aviation, Airmen will appreciate the unique requirements of MAGTF combined arms synergy. Cooperation between Airmen and Marines will ensure the effective focus of airpower on the right mission, at the right time. To understand their counterpart, each service must develop a solid understanding of the other's purpose, people, and environment.

In memoriam

First Sergeant Sherman Travis Smith, USA (Ret)
14 May 1949 – 4 November 2010
Citizen, Soldier, Patriot

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Introduction

While failure to do so may well result in catastrophe, it is equally true that not even the greatest victories in history resulted from anything like the perfect command system...

Martin Van Creveld

Since the first combat applications of airpower in WWI, Airmen and Marines have developed differing views regarding command and control of airpower. These differing views have instigated decades of debates and arguments, pitting Air Force doctrine against Marine Corps doctrine, with both sides considering their position justified. In the twenty-five years that have elapsed since the passage of the Goldwater-Nichols Act, the debate continues, with a change of venue. Pursuant to Section 153(a)(5) of the Goldwater-Nichols Act, doctrine for joint employment of the armed forces has become the new setting for the airpower command and control debate.

This is an ongoing debate. From the halls of the Pentagon, to the Strategy Divisions and Operations Centers of forward deployed aviation units, command and control differences between the Air Force and Marine Corps continue to frustrate the professionals that constitute American airpower.¹ Numerous articles and works of scholarly research about Air Force and Marine Corps conflicts over command and control of airpower are readily available from multiple sources. Each author seems to find enough information in the joint doctrine to reinforce an argument in favor of one service perspective or the other. One such document is LtCol Clint Hinote's Air Force Research Paper 2009-1, "Centralized Control and Decentralized Execution, A Catchphrase in Crisis?" Another is Major Aaron Weiss' *Marine Corps Gazette* article, titled "What Now

¹ Darnell, Daniel J. & George J. Trautman III. 'Shoulder to shoulder: the Marine Corps and Air Force in combat,' *Joint Force Quarterly*, Jan 1, 2009. See Also Air Force/Marine Corps Tiger Team Trip Report, 8-20 Jan 2008

Major?” Both documents discuss control of Marine Aviation, one favoring the Air Force point of view, the other favoring the Marine point of view. Both of them use joint doctrine to reinforce their argument.² The problem with using doctrine, as delineated in the doctrine itself is that it “requires judgment in application.”³ This poses the problems of how to develop judgment in applying doctrine, using judgment based on that doctrine.

Without using joint doctrine as the source for justification, this study will attempt to answer the question: how can Airmen and Marines set aside their differences regarding command and control of airpower, and integrate their forces to accomplish assigned missions?

Secretary of Defense Robert Gates, in his January 6, 2011 speech, spelled out a fiscal way forward for the Department of Defense (DoD), incorporating at least \$100 billion in savings.⁴ These cost saving measures indicate a reduction in manpower and equipment across the military services, reducing the quantity of warfighting assets available to combatant commanders, as well as the size and number of the command and control agencies available to manage that combat power. It is incumbent upon all commanders and their staffs to understand the capabilities and limitations of their service and its assets, as well as sister services and their assets, attributes and attitudes in order to seamlessly integrate American combat power across the spectrum of conflict, whenever and wherever the civilian leaders direct.

In a joint fight, limited assets, facilities, and people will require increased interoperability and greater judgment on the part of commanders and staffs. This greater judgment will arise from a greater understanding of other military services; how they organize, train, and equip; and why they organize, train, and equip as they do.

² Hinote, pgs 50-51. Weiss, Aaron. Marine Corps Gazette, November 2007, pgs 66-69.

³ JP 1-02, pg 143

⁴ SECDEF Speech, Statement on Department Budget and Efficiencies, 6 Jan 11

This study attempts to facilitate that greater understanding, through the following arguments.

Chapter 1 provides an in-depth analysis of the command and control doctrine of each service. Air Force Doctrine Document (AFDD) 1, *Basic Air Force Doctrine*, AFDD 1-2, *Air Force Glossary*, and AFDD 6, *Command and Control* provide the Air Force point of view. The Marine point of view is a synthesis of Marine Corps Doctrinal Publication (MCDP) 1-0, *Marine Corps Operations*, MCDP 6, *Command and Control*, Marine Corps Warfighting Publication (MCWP) 3-2, *Aviation Operations*, and MCWP 3-24, *Control of Aircraft and Missiles*. Beginning with each service's master tenets of command and control, this chapter breaks down the concepts and terminology that Airmen and Marines use to describe command, control, and execution. Once defined, comparison of the terms, and the concepts that describe them, will reveal where Airmen and Marines harbor differing or share common views on the tenets of command and control.

Chapter 2 offers a disciplined analysis of the origin of the differences between Air Force and Marine Corps command and control doctrine, using Barry Posen's organizational perspective, as presented in his book *The Sources of Military Doctrine*. Posen's organizational perspective describes the origin of doctrine by reference to three significant causal forces: purpose, people, and environment.⁵ This chapter defines the purpose of each service through analysis of Title 10 United States Code, *Armed Forces*, and Department of Defense Directive 5100.1, *Functions of the Department of Defense and Its Major Components*.

Chapter 3 continues the analysis began in chapter 2, linking purpose to people and environment by providing a brief history of the events and influences that have shaped the attitudes and attributes of

⁵ Posen, Barry. *The Sources of Military Doctrine : France, Britain, and Germany between the World Wars*. pg 42

Airmen and Marines, and their concepts of airpower. Collated from primary and secondary source material, this brief history describes the experiences of the flyers in each service from WWI through the Vietnam War.

Chapter 4 provides a brief discussion of innovation in military doctrine, and how military organizations avoid innovation in military doctrine. The overview begins with passage of the Goldwater-Nichols Department of Defense Reorganization Act of 1986 and continues through the 1990-1991 Gulf War.

United by the common practice of flying aircraft in service of the US military organization, Air Force Airmen and Marine Aviators often forget that their aviation organizations evolved from different conceptual roots and pursue different purposes. When airpower disagreements erupt, some will argue the letter of the law as delineated in joint and service doctrine in an attempt to force acquiescence. A select few will argue the spirit of the law, developed from a greater understanding of the origins of that doctrine. This study attempts to enhance that understanding.

The truth is far more complicated than the arguments paint it. While the central command and control tenets of the Air Force and Marine Corps seem anathema on the surface, they cover much common ground. To some extent, the two services say similar things in their doctrine, but each starts from a different point on the spectrum and hedges toward the other. Yet there is still a difference. The difference comes from the distinct purposes of the two services, which provide lenses through which their people view the lessons of combat experiences. Each views the value of air power in completely different terms. As the two services developed, they applied these lessons in the context of their relationships with parent organizations, the Marine Corps and the Army. This led to two entirely different approaches to command and control. Fighting jointly in Korea and Vietnam forced the

two services to define terms that would allow them to cooperate; the Goldwater-Nichols Act later crystallized these terms. However, in the first major conflict following passage of this act, the commanding generals still had to reconcile the disparate approaches in a way that fostered joint warfare. The sheer magnitude of the joint force garnered swift victory for the coalition. Unfortunately, the abundance of combat power allowed the services to continue operating along the lines of their disparate service doctrines, the differences were never resolved, and the debate continues today.



Chapter 1

Doctrinal Zweikampfe

Once grasp the great form without a form and you will roam
where you will with no evil to fear, calm, peaceful, at ease.
The hub of a wheel turns upon the axle.
In a jar, it is the hole that holds water.
So advantage is had from whatever there is;
But usefulness rises from whatever is not.

Lao Tzu

To say that the Air Force and the Marine Corps harbor differing views regarding command and control of airpower would be an understatement. On the surface, Airmen and Marines articulate their differences against the milieu of joint and service doctrine, often without a deeper understanding of the principles that form that doctrine. Oddly enough, Air Force and Marine Corps command and control doctrine, especially that which relates to Marine aviation operations, share a fair amount of common ideas and terminology. The difference between the manner in which each service expresses its views regarding command and control lies in the manner in which they interpret the terminology used to define the tenets of command and control.

This chapter will analyze the differences in how Air Force and Marine Corps warfighters delineate command and control of airpower. It begins with a comparison of service doctrine in order to point out the differences between the two, and ends with a summary of the common language that separates Air Force and Marine Corps approaches to command and control.

What is in the doctrine?

Air Force doctrine centers on the tenets of centralized control and decentralized execution.¹ Marine Corps doctrine centers on the tenets of

¹ Air Force Doctrine Document (AFDD) 6-0. *Command and Control*, pgs 7-12.

centralized command and decentralized control.² The apparent difference between Air Force and Marine Corps command and control doctrine lies in each service's approach to control; however, semantic differences in the entirety of both tenets breed further disagreement.

In Air Force Research Paper 2009-1, *Centralized Control and Decentralized Execution: A Catchphrase in Crisis?* Lieutenant Colonel Clint Hinote asserts that Marines have always believed in centralized control and decentralized execution, but they fundamentally disagree with the idea that the source of centralized control should be an airman, placing their aviation assets under the Marine Air Ground Task Force MAGTF Commander.³ Both assertions of this statement are incorrect.

Contrary to the first assertion, Marine doctrine states that the pace, complexity, and uncertainty of modern warfare necessitates the decentralization of control, and that execution is a task that is subordinate to decentralized control. The actual degree to which control is decentralized depends on the unique requirements of the specific situation.⁴

Contrary to the second assertion, Marine doctrine states that an Air Combat Element (ACE) Commander should centrally command MAGTF aviation.⁵ The ACE Commander is a senior Marine Aviator, an airman, who reports directly to the MAGTF Commander, in much the same manner as the Joint Force Air Component Commander (JFACC) reports to the Joint Force Commander JFC. Due to the combined arms nature of the Marine Corps, the training of its officers, and its command selection practices, it is possible that the MAGTF Commander will also be a Marine Aviator, placing Marine aviation under two echelons of air-minded commanders.

² Marine Corps Warfighting Publication (MCWP) 3-2 *Aviation Operations*. pgs 4-1 – 4-12.

³ Hinote, Clint. *Centralized Control and Decentralized Execution : A Catchphrase in Crisis?* pg 50

⁴ MCWP 3-2, pgs 3-7 & 4-3

⁵ MCWP 3-2, pgs 2-15 & 3-3 – 3-5

This incorrect assertion by Hinote illustrates that there is a significant amount of misunderstanding about the meaning of the terms in the services' central beliefs. This chapter will attempt to clarify these terms.

Unity of Command

Martin Van Creveld defines command "as a function that has to be exercised, more or less continuously, if the army is to exist and to operate... command must arrange and coordinate everything an army needs to exist... [and] enables the army to carry out its proper mission..."⁶ Joint Publication 1-02 defines command as "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."⁷ A phrase common to both the Air Force and the Marine Corps is unity of command. Unity of command is one of the principles of war, yet Air Force and Marine Corps doctrines each pose a slight variation in defining it.

For the Air Force, "Unity of command ensures concentration of effort for every objective under one responsible commander... Coordination may be achieved by cooperation; it is, however, best achieved by vesting a single commander with the authority to direct all force employment in pursuit of a common objective... Unity of command is vital in employing air and space forces. Air and space power is the product of multiple capabilities, and centralized command and control is *essential* to effectively fuse these capabilities."⁸ (emphasis is original)

⁶ Van Creveld, Martin. *Command in War*, pgs 5-6

⁷ Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms* pg 84

⁸ Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*. pg 20-21

The phrase “concentration of effort” links unity of command to unity of effort, which Joint Publication 1-02 defines as, “Coordination and cooperation toward common objectives, even if the participants are not necessarily part of the same command or organization - the product of successful unified action.”⁹ Along with unity of command, unity of effort is a key consideration of Air Force command and control.¹⁰

For Marines, unity of command is “based on the designation of a single commander with the authority to direct and coordinate the efforts of all assigned forces in pursuit of a common objective. The goal of unity of command is unity of effort. In joint, multinational, and interagency operations where the commander may not control all elements in his AO, he seeks cooperation and builds consensus to achieve unity of effort.”¹¹ Further, “unity of effort is not the product of conformity imposed from above but of the spontaneous cooperation of all the elements of the force.”¹²

Although the Air Force and Marine Corps both promote unity of command, the term carries different meaning for each service. The Air Force definition specifically focuses on unity of command of the multiple capabilities that constitute air and space power, even if the participating air assets are not necessarily part of the same command or organization. In the spirit of unity of command and unity of effort, Airmen believe that due to the unique ability of air and space power to affect the strategic and operational levels of war, a single Airman at the component command level, the JFACC, must control it.¹³

⁹ JP 1-02, pg 489

¹⁰ AFDD 6, pg 10

¹¹ Marine Corps Doctrinal Publication (MCDP) 1-0 *Marine Corps Operations*. pg B-4

¹² MCDP 6, pg 79

¹³ AFDD 6-0, pg 12 “Because of air and space power’s unique potential to directly affect the strategic and operational levels of war, it must be controlled by a single Airman at the air component commander level. This Airman must maintain the broad strategic perspective necessary to balance and prioritize the use of the air and space resources that have been allocated to the theater. A single commander, focused on the broader

The Marine definition focuses on using available resources and controlling military forces for the accomplishment of an assigned mission. For Marines, military force includes the MAGTF Commander's ground forces, logistics capability, and organic aviation forces, all task organized and coordinated for mission accomplishment. Marines believe in both unity of command and unity of effort. This arrangement works well for the independent, expeditionary operations that Marines organize, train, and equip to execute. However, in a joint fight, the MAGTF AO is only a portion of the greater Joint AO. In this case the JFACC's unity of effort entails all airpower for the Joint AO, whereas the MAGTF Commander's unity of effort includes MAGTF airpower for the MAGTF AO. The overlapping efforts pose a redundancy that Airmen dispute as an inefficient division of airpower, and Marines fervently defend in the name of combined arms synergy.

For the Air Force, unity of command ensures unity of the airpower effort under a single air commander, and for Marines, unity of command ensures unity of the combined arms effort under the MAGTF Commander. The essential difference between unity of command in Air Force forces and Marine Aviation forces is apparent in each service's doctrine. Air Force Command and Control doctrine states, "Whether in the role of supported or supporting commander, Air Forces are presented as a separate force to the JFC, under a single Airman, a COMAFFOR [commander, Air Force forces], to preserve unity of command." The COMAFFOR is "dual-hatted as a JFACC."¹⁴

aspects of an operation, can best mediate the competing demands for tactical support against the strategic and operational requirements of the conflict."

¹⁴ AFDD 6-0, pg 12 Whether in the role of supported or supporting commander, Air Forces are presented as a separate force to the JFC, under a single Airman, a COMAFFOR, to preserve unity of command. Air Force forces are not broken apart piecemeal under the component commanders being supported. Breaking Air Force forces apart dilutes their effectiveness. See Also AFDD 1, pgs 64-65 "The Air Force prefers—and in fact, plans and trains—to employ forces through a COMAFFOR who is also dual-hatted as a JFACC."

Conversely, the Marine ACE, whether designated as the main effort or the supporting effort, under a single airman – the ACE Commander – is subordinate to the MAGTF Commander and functions as an integral part of a combined-arms force, the MAGTF. The ACE provides the MAGTF Commander with firepower, flexibility, mobility, force protection, sustainability, and command and control.¹⁵ The MAGTF Commander retains authority over his aviation assets to preserve unity of command over the combined arms team that is the heart of the Marine combat power.

In a joint fight, both commanders present forces to the JFC. The COMAFFOR, dual-hatted as the JFACC, presents the JFC with both a service component and a functional component. Unless the JFC assigns the MAGTF Commander Air, Land or Maritime Component Commander duties, he represents only the Marine service component, and maintains unity of command of the MAGTF functional components. Both commanders believe they should control Marine Aviation in pursuit of the JFC assigned mission.

Unity of command assures unity of effort, and translates into the Marine Aviation command and control principle of centralized command. Centralized command allows the ACE Commander to *plan, direct, and coordinate* all aspects of MAGTF Aviation.¹⁶ (emphasis added) In Air Force doctrine, unity of command also assures unity of effort, though it is only a guiding principle, supported by the tenets of centralized control and decentralized execution.¹⁷

Control

The semantic demarcation between Air Force and Marine command and control doctrine s comes with the different approaches to control that are inherent in each service. Joint Publication 1-02 defines

¹⁵ MCWP 3-2, pg 3-1 & 3-8 – 3-9

¹⁶ MCWP 3-2, pg 4-2

¹⁷ AFDD 6-0, pg 10

control as the “Authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations.”¹⁸ Webster’s dictionary defines control as “the power or authority to guide or manage.”¹⁹ The Air Force and Marine Corps each define control in their service doctrine as follows.

The Air Force representation of control suggests a commander centered, top down approach. It incorporates terminology that suggests parity with the Marine and CJCS definition of command. According to Air Force Command and Control Doctrine:

Control is the process and system by which commanders plan and guide operations. Commanders should rely on delegation of authorities and commander’s intent as methods to control forces. However, just as in the discussion of command, although commanders may delegate authority to accomplish the mission, they cannot delegate the responsibility for the attainment of mission objectives... This is the process by which commanders *plan, guide, and conduct operations...*

Commanders influence operations and ensure mission success through other means, such as memoranda of agreement (MOAs), memoranda of understanding (MOUs), and designation of an executive agent for specific functions. These and other types of agreements are usually negotiated before operations commence.²⁰ (emphasis is original)

Air Force Basic Doctrine further delineates centralized control as:

The planning, direction, prioritization, synchronization, integration, and deconfliction of air and space capabilities to achieve the objectives of the joint force commander...

Centralized control maximizes the flexibility and effectiveness of air and space power; however, it must not become a recipe for micromanagement, stifling the initiative subordinates need to deal with combat’s inevitable uncertainties.²¹

¹⁸ JP 1-02, pg 101

¹⁹ Merriam-Webster. *Merriam-Webster’s Collegiate Dictionary*. 11th ed. pg 272

²⁰ AFDD 6-0, pgs 5-6

²¹ AFDD 1, pg 28

The control measures and designations listed in the Air Force definition of control, suggest a control system with limited latitude and freedom for subordinates to coordinate laterally, or provide feedback to the commander.²² The definitions above describe control as a prescriptive tool to direct operations in a unidirectional command and control relationship. Figure 1a, below, provides a graphical depiction of unidirectional command and control system, similar to what the Air Force definition of control describes.

For Marines, “Control is inherent in command. Control allows the staff to monitor the status of the command, assess the gap between what was planned and what has been accomplished, and direct action to exploit new opportunities or correct deficiencies. Control serves its purpose if it allows the commander freedom to operate, delegate authority, lead from any critical point on the battlefield, and synchronize actions across his Area of Operations.”²³

As delineated in Marine Corps Command and Control Doctrine, Control takes the form of feedback—the continuous flow of information about the unfolding situation returning to the commander—which allows the commander to adjust and modify command action as needed... Feedback is the mechanism that allows commanders to adapt to changing circumstances—to exploit fleeting opportunities, respond to developing problems, modify schemes, or redirect efforts. In this way, feedback “controls” subsequent command action. In such a command and control system, control is not strictly something that seniors impose on subordinates; rather, the entire system comes “under control” based on feedback about the changing situation.²⁴

²² JP 1-02, pg 164: **Executive agent** — A term used to indicate a delegation of authority by the Secretary of Defense to a subordinate to act on behalf of the Secretary of Defense. Designation as executive agent, in and of itself, confers no authority. The exact nature and scope of the authority delegated must be stated in the document designating the executive agent. An executive agent may be limited to providing only administration and support or coordinating common functions, or it may be delegated authority, direction, and control over specified resources for specified purposes.

²³ MCDP 1-0, *Marine Corps Operations*, Appendix A, *Warfighting Functions*, pg A-2

²⁴ MCDP 6, pg 40

Marines view command and control as an interactive process, working in all directions, vertically and horizontally, encompassing all parts of the system and echelons of command. The resulting, mutually supporting system provides a synergy between command and control that allows the MAGTF to adapt to changing requirements.²⁵ Figure 1a illustrates a traditional, unidirectional command and control relationship. Figure 1b illustrates the Marine Corps view of control as feedback to the commander, controlling his subsequent commands.

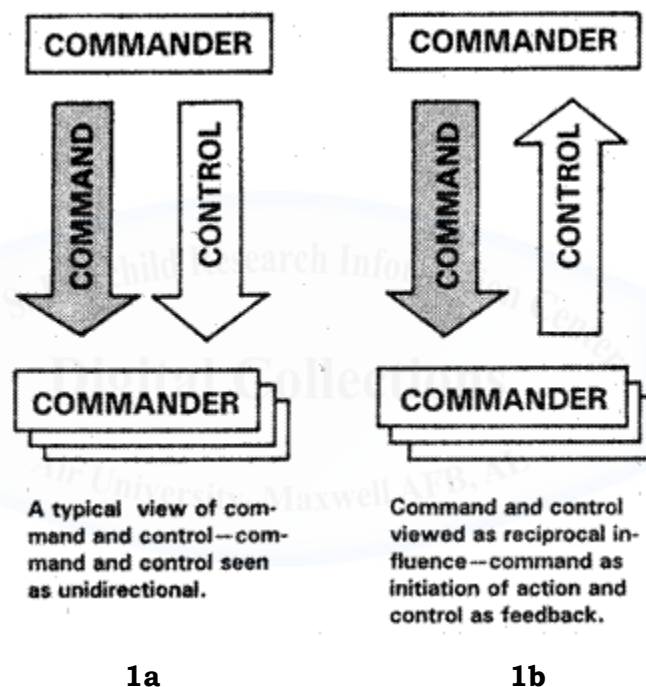


Figure 1: Two views of the relationship between command and control.

Source: Marine Corps Doctrinal Publication 6, *Command and Control*

Marines view centralized control as working from the top down, with the commander determining what subordinates will, and will not do; and decentralized control as working from the bottom up. Cooperation is required for both types of control, though it is crucial to decentralized control. Marines believe that in order to accomplish tasks that fulfill the

²⁵ MCDP 6, pgs 40-41

commander's intent, subordinates must have the freedom to coordinate laterally and provide feedback from the bottom up. This requires decentralized control.²⁶

The Air Force doctrine describes a unidirectional method of control, in which the commander delineates commands and the accompanying control measures from the top down. Marine doctrine describes a reciprocal system, in which commander issues his commands, and control is the feedback that the commander receives from his subordinates. The Air Force definition of control incorporates the terms plan, guide, and conduct, which are very similar to plan, direct, and coordinate, as utilized in the joint and Marine definition of command. The Air Force definition of control, also incorporates the terms MOA, MOU, and Executive Agents, which suggest a top down approach that centers on the commander and the tools he uses to regulate operations. Conversely, Marines believe that the object of command and control is not thorough and precise control. For Marines, the object of command and control is guidance that promotes initiative during uncertainty and order amidst the chaos of war.²⁷

The disparity in approach to control leads each service to different tenets of control; centralized control for the Air Force and decentralized control for Marines.

Execution

The difference in overarching command and control canons, regarding execution, stems from the differing approaches to control, as reviewed above. Although the Air Force and the Marine Corps share a common belief in decentralized execution, the doctrinal expression of the concept is different for each service. Joint and service doctrines do not define the term execution by itself, though Joint Publication 1-02 defines decentralized execution as “delegation of execution authority to

²⁶ MCDP 1-0, pg 6-33

²⁷ MCDP 6, pg 1-0

subordinate commanders.”²⁸ Webster’s dictionary defines execution as “the act or process of executing,” with execute (and executing) defined, “to carry out fully: put completely into effect... To do what is provided or required... To perform indicated tasks according to encoded instructions.”²⁹ The Air Force and Marine Corps share similar views of decentralized execution.

Airmen recognize the consequence of excessive control and the need to strike a balance between too much control, which stifles initiative and hampers flexibility, and too little control, which can hamper coordination.³⁰ In the Air Force master tenet, decentralized execution provides a balance to centralized control. Decentralized execution ensures that tactical commanders retain the authority to make their own tactical decisions.³¹ Air Force Basic Doctrine states, “Decentralized execution of air and space power is the delegation of execution authority to responsible and capable lower level commanders to achieve effective span of control and to foster disciplined initiative, situational responsiveness, and tactical flexibility. It allows subordinates to exploit opportunities in rapidly changing, fluid situations. The benefits inherent in decentralized execution, however, are maximized only when a commander clearly communicates his intent.”³² Air Force Command and Control Doctrine further specifies, “Unity of command is not intended to promote centralized control without delegation of execution authority to subordinate commanders.”³³

For Marines, decentralized execution promotes disciplined initiative and allows subordinates to exploit opportunities. It is essential to generate

²⁸ JP 1-02, pg 122

²⁹ Merriam Webster’s Dictionary, pg 436

³⁰ AFDD 6-0, pg 13

³¹ AFDD 6-0, pg 15

³² AFDD 1, pg 28

³³ AFDD 6-0, pg 11

the tempo of operations required and to cope with the uncertainty, disorder, and fluidity of combat.³⁴ Marine Corps Operations Doctrine states, “Execution of MAGTF operations is the concerted action of the commander and his forces to conduct operations based on the operation plan or order, modified as the current tactical situation dictates, to achieve the commander’s end state and accomplish the mission... He [the Commander] must command the force and supervise the activities of his subordinate commanders in carrying out his mission and intent.”³⁵ The concerted actions of the commander and his forces, reflects the reciprocal loop that Marines use to control operations. Through the command and feedback loop, the Commander and his forces cooperate to achieve the desired end state and accomplish the assigned mission. The commander cannot execute every task required for mission accomplishment—he assigns tasks and supervises their execution. Therefore, execution is decentralized.

Airmen and Marines both believe in decentralized execution, but disagree over its status as a key tenet or a subordinate task. In Marine Corps doctrine, execution is a task subordinate to decentralized control.³⁶ Marines recognize that control is not thorough and precise. Rather, it provides guidance, which promotes initiative during uncertainty. Similar thinking extends to execution, in that neither a commander, nor his staff, can perform all tactical or technical tasks according to instructions. The commander cannot pull every trigger, fly every airplane, or lead every squad in combat; he cannot personally execute every order.³⁷ In Marine doctrine, decentralized execution is an illustrative term used to define one end of the decision-making

³⁴ MCDP 1-0, pg 6-20

³⁵ MCDP 1-0, pg 6-32

³⁶ MCWP 3-2, pg 3-5 & 4-3. Also Marine Corps Warfighting Publication (MCWP) 3-25 *Control of Aircraft and Missiles* pg 2-2

³⁷ MCDP 6, pg 42 discussions relates to control of aircraft and squads, the author makes connection to execution.

continuum, which spans from centralized planning to decentralized execution.³⁸ It is control, centralized or decentralized, that links execution to centralized command. In Air Force doctrine, decentralized execution is a key tenet.³⁹

Conceptual Similarities

In spite of outwardly different approaches to command and control, the Air Force and Marine Corps share common concepts, buried among the words and themes that frame the doctrine of each service. This commonality is most apparent where the doctrine's first diverge, amidst the debate between centralized versus decentralized control.

The Air Force doctrine of centralized control superficially appears anathema to the Marine Corps, whose canon is decentralized control, and vice versa. However, the terminology used in both service doctrines describes a principle that is more similar than it is different. In *Command in War*, Martin Van Creveld provides five implications for the organization of a command system; the first two implications describe the similarities. Van Creveld's first two implications reflect the need for a command and control system that supports low-level decision-making and the need to push decisions down to the lowest level through delegation of authority and decentralized control.⁴⁰ He states that "certainty is the product of time as well as of information..."⁴¹ He further argues that commanders must be willing to do with less information in order to preserve valuable time, which requires proper training of subordinates, and an organizational structure that supports subordinate

³⁸ MCDP 1-0, pg 6-20

³⁹ AFDD 6-0, pg 12 & 17

⁴⁰ Van Creveld, pg 270. Van Creveld's first two implications are: 1) The need for decision thresholds to be fixed as far down the hierarchy as possible, and for freedom of action at the bottom of the military structure; and 2) the need for an organization that will make such low-decision thresholds possible by providing self-contained units at a fairly low level.

⁴¹ Van Creveld, pg 270

initiative.⁴² Analysis of each service's approach to decentralization and centralization demonstrates these similarities.

Decentralization

Air Force Command and Control Doctrine balances the need for decentralization and low-level decision thresholds against unity of command and unity of effort in its discussion of centralized control, with the following statement. "Unity of command is not intended to promote centralized control without delegation of execution authority to subordinate commanders"⁴³ The same publication also states, "Overcontrolling air and space power robs it of flexibility, taking away *initiative* from operators. Undercontrolling air and space power fails to capitalize on joint force integration and orchestration, thus reducing its effectiveness."⁴⁴ (emphasis added) Further, "Centralized control maximizes the flexibility and effectiveness of air and space power; however, it must not become a recipe for micromanagement, *stifling the initiative subordinates need* to deal with combat's inevitable uncertainties."⁴⁵ (emphasis added)

Marines use similar terminology to describe decentralized control. Marine Command and Control doctrine states, "The turbulence of modern war suggests the need for a looser form of influence... [one] that provides the necessary guidance in an uncertain, disorderly, time-competitive environment *without stifling the initiative of subordinates*."⁴⁶ (emphasis added)

The services both caution against stifling initiative in arguing each service's case for opposing approaches to control. The Air Force argues in favor of centralized control, with a caveat against stifling initiative through micromanagement. The Marine Corps argument favors

⁴² Van Creveld, pgs 270-271

⁴³ AFDD 6-0, pg 11

⁴⁴ AFDD 6-0, pg 13

⁴⁵ AFDD 6-0, pg 15

⁴⁶ MCDP 6, pg 43

decentralized control to promote initiative and prevent micromanagement.

In recognition of the need to decentralize and delegate, Air Force Command and Control Doctrine concedes:

Even commanders at the lowest levels of responsibility cannot execute or directly oversee every task that is performed within their units or organizations... By *delegating authority* for certain key tasks, commanders can ensure their *subordinates can execute decisions for them*, while following their guidance disseminated via *commander's intent*... Guidance for planning and conducting air and space operations is reflected in the *commander's intent*. Those granted *delegated authority* must understand the commander's intent, which is disseminated through the campaign plan and other plans and annexes that provide specific guidance for specialized functions. Unity of effort over complex operations is made possible through decentralized execution of centralized, overarching plans. Roles and responsibilities must be clearly spelled out and understood.⁴⁷ (emphasis added)

In similar opinion, Marines believe, "The commander must be prepared to take advantage of fleeting opportunities. To exploit opportunities and generate tempo, command and control must be decentralized. *Subordinate commanders must make decisions using their initiative and understanding of their senior's intent.*"⁴⁸ (emphasis added)

As related to Marine Aviation:

The [Marine] ACE commander also wants to optimize the flexibility, versatility, and responsiveness of aviation by allowing control of assets to be conducted by subordinate agencies. These subordinate agencies are both responsive to the commander and in touch with the changing dynamics of the battle (i.e., decentralized control). Plans and orders are brief and general. Execution depends on the sound *judgment of well-trained subordinates, their initiative, and their understanding of the commander's intent*. This style of

⁴⁷ AFDD 6-0, pg 15-16

⁴⁸ MCDP 1-0, pg D-7

command and control supports rapid decision-making in a time-constrained environment.⁴⁹(emphasis added)

Both Air Force and Marine Corps doctrine recognize the need to delegate authority to well trained subordinates with sound understanding of commander's intent. For the Air Force, this delegation takes the form of decentralized execution authority, in which roles and responsibilities are clearly spelled out and understood. For Marines it is decentralized control, where execution depends on the sound judgment of well-trained subordinates, their initiative, and their understanding of the commander's intent.

Centralization

The comparisons above exemplify the use of common terms to describe decentralization. Conversely, both services also define the need for centralization.

The Air Force master tenet focuses on centralized control, as supported by the following doctrinal argument,

Air and space power's unique *speed, range, and ability* to maneuver in three dimensions depends on centralized control by an Airman to achieve effects when and where desired... Because of air and space power's unique potential to directly affect the strategic and operational levels of war, it must be controlled by a single Airman at the air component commander level. A single commander, focused on the broader aspects of an operation, can best mediate the competing demands for tactical support against the strategic and operational requirements of the conflict.⁵⁰ (emphasis added)

The Marine Corps principle of decentralized control implies an inclination against centralized control. However, study of Marine Corps doctrine reveals recognition of the necessity to centralize control of Marine Aviation as situations dictate. Marine doctrine states, "The capabilities of aviation, including its *speed, range, and mobility*, easily

⁴⁹ MCWP 3-2, pg 4-2

⁵⁰ AFDD 6-0, pg 12

translate to the operational level of war.”⁵¹ (emphasis added) Moreover, “The actual degree to which control is decentralized depends on the unique requirements of the specific situation. In some instances detailed and highly *centralized control* is required. Centralized planning may be employed to enhance *unity of effort and to concentrate resources* on an identified main effort. However, whenever possible, decentralized control is used to increase the speed and agility of the MAGTF—including its aviation arm.”⁵² (emphasis added)

The Air Force and Marine Corps both recognize the speed, range, and mobility capabilities of aviation, as well as the ease with which those capabilities translate to the operational level of war. Both services believe in flexibility between centralized and decentralized control, or, as Martin Van Creveld asserts, the “perverse interlocking” of centralization and decentralization.⁵³ The Air Force initial condition is centralized control, the Marine Corps initial condition is decentralized control. These initial conditions represent opposite ends of the spectrum that each service adapts to the operational environment.

Command, Control, and the Common Terminology

At first look, the Air Force and Marine Corps tenets of air power command and control – Air Force centralized control and decentralized execution versus Marine centralized command and decentralized control – seem fundamentally incompatible. The divergence appears obvious in the terminology of each service’s command and control doctrine s. This semantic difference tends to draw Airmen and Marines into a debate over methods of command and control. Each service presents an opposing view, although the analysis above has demonstrated that both services

⁵¹ MCWP 3-2, pg 1-6

⁵² MCWP 3-2, pgs 3-7 – 3-8

⁵³ Van Creveld, pg 274

incorporate many of the same concepts into their different approaches to command and control.

The debate begins with the concept common to both services -- unity of command. Both services believe in the need for unity of command and unity of effort. Both services believe in the need for centralization. The difference lies in the focus of centralization; Airmen must use centralized control, while Marines believe in centralized command. This difference emerges from the different missions assigned to the JFACC and the MAGTF Commander. Each believes that he has the necessity to control Marine Aviation assets. The JFACC is responsible for the theatre level air effort, for which he must centrally control aviation assets he does not necessarily command. The MAGTF Commander is responsible for the MAGTF portion of the AO, for which he believes in unity of command over his combined arms force, delegating command of assigned Marine Aviation assets to his ACE Commander, who centrally commands them.

Although the command and control doctrine of each service incorporates similar concepts and terminology, confusion arises from the fact that these similar concepts and terminology describe different canons of command and control for each service. Airmen describe centralized control using terms that Marines use to describe centralized command, and describe decentralized execution using terms that Marines use to describe decentralized control.

Air Force Basic Doctrine describes centralized control as, “The *planning, direction, prioritization, synchronization, integration, and deconfliction* of air and space capabilities to achieve the objectives of the joint force commander.”⁵⁴ (emphasis added) For Marines, centralized command allows the ACE Commander to *plan, direct, and coordinate* all

⁵⁴ AFDD 1, pg 28

aspects of MAGTF Aviation.⁵⁵ (emphasis added) Plan, direct, and coordinate are common terms used to describe both control and command. Joint Publication 1-02 favors the term ‘command’ in this case, stating, “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.”⁵⁶ (emphasis added)

Air Force Basic Doctrine states, “Decentralized execution of air and space power is the delegation of execution authority to responsible and capable lower level commanders to achieve effective span of control and to foster disciplined *initiative, situational responsiveness, and tactical flexibility*. It allows subordinates to exploit opportunities in rapidly changing, fluid situations.”⁵⁷ (emphasis added) Marines use decentralized control to optimize the *flexibility, versatility, and responsiveness* of aviation by allowing subordinate agencies to control assets. These subordinate agencies are both responsive to the commander and in touch with the changing dynamics of the battle.⁵⁸ (emphasis added) Joint Publication 1-02 defines decentralized execution as “delegation of execution authority to subordinate commanders.” The first portion of the joint definition – delegation of execution authority - matches the Air Force definition, and the second portion reflects the Marine description of decentralized control.

The disparity between command and control doctrine s reflects the distribution of command authority within each service’s command and control systems. Colonel Michael Kometer delineates the Air Force

⁵⁵ MCWP 3-2, pg 4-2

⁵⁶ JP 1-02, pg 84 – **Command** - 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

⁵⁷ AFDD 1, pg 28

⁵⁸ MCWP 3-2, pg 4-2

perspective in *Command in Air War*, in which he states, “While ground commanders can delegate authority to increasingly lower-echelon commanders, when the same authority is to be passed for air combat, it must be passed down from the JFACC to elements of the TACS [theatre air control system]. However, none of these elements command the assets they control, which is why Air Force doctrine talks about control and not command.”⁵⁹ Air Force doctrine reflects this perspective, asserting that the JFACC must centrally control air power. Conversely, Marine Corps doctrine asserts that the ACE Commander centrally commands the MAGTF ACE.⁶⁰ It is a difference rooted in the role of each service, and the missions assigned to each commander.

When Airmen speak of centralized control, and Marines speak of centralized command, they are actually speaking of similar, though not identical tenets. The JFACC must control Air Force, joint, and coalition air assets that he does not necessarily have the authority to command. He may have to control US Navy, Marine, NATO, or other coalition aircraft, but he does so with less than full command authority. Therefore, the JFACC centrally controls aircraft for the JFC. The ACE Commander has command authority, delegated by the MAGTF commander, over all assigned Marine aircraft. Therefore, the ACE Commander centrally commands his assigned assets. The JFACC, the MAGTF Commander, and the ACE Commander all believe in centralization. The Marines have full command authority over Marine aircraft, the JFACC has less than full command authority over air component aircraft. That is why Marine doctrine supports centralized command, and Air Force doctrine supports centralized control.

⁵⁹ Kometer, Michael W. *Command in Air War : Centralized Versus Decentralized Control of Combat Airpower*. pg 60

⁶⁰ MCWP 3-2, pg 2-5 & 4-2

With these similarities in mind, why do Airmen and Marines expend so much energy debating command and control? The next chapter attempts to answer that question.



Chapter 2

Pursuit of Purpose

The roots of military victory and defeat often have to be sought far from the battlefield, in political, social, and economic factors which explain why armies are constituted as they are, and why their leaders conduct them in the way they do.

Michael Howard

To articulate the differences between Air Force and Marine Corps doctrine, and to provide depth to an argument that supports one approach to command and control over another, it is imperative to understand the reasoning behind the words that form the doctrine. To understand the reasoning, it is necessary to appreciate the source of the doctrine, and the ethos of the service that writes it.

In *Sources of Military Doctrine*, Barry Posen contends that modern states divide national security functions among specialized and bureaucratized military professionals who are responsible for the composition and execution of military doctrine. He further asserts that the attributes of military organizations and the attitudes of the professionals who constitute those organizations influence the doctrine they create.¹ Posen explains the origins of military doctrine through the lens of political and organizational theory. He defines military doctrine as “the subcomponent of grand strategy that deals explicitly with military means. Two questions are important: *What* means shall be employed? and *How* shall they be employed?”² (emphasis is original) Posen provides two perspectives on explaining the source of military doctrine:

¹ Posen, Barry. *The Sources of Military Doctrine : France, Britain, and Germany between the World Wars*. pgs 41 - 42

² Posen, pg 13

one based on organizational theory and another based on balance of power theory.³

Posen's analysis focuses on military doctrine at the grand strategic level, in which sovereign states interact and measure elements of national power against one another, supporting applicability of both the balance of power perspective and organization perspective. This study focuses on the military strategic, operational, and tactical levels, in which large and specialized military bureaucracies function within the regulations of the political environment. As military organizations are not sovereign political units acting in an unregulated environment, Posen's balance of power perspective does not apply to this analysis of military doctrine.⁴ As such, his organization theory perspective will provide the framework to explain the sources of Air Force and Marine Corps Command and Control Doctrine by reference to three significant causal forces: purpose, people, and environment.⁵

Purpose

Organizations exist for the pursuit of specific purposes. The pursuit of purpose demands planning, coordination, and supervision; which, in turn, promotes structure and behavior aimed at reducing uncertainty.⁶ In pursuit of purpose, military organizations develop preferred methods of command and control in order to plan and coordinate the efforts of a large number of subordinate units and endow subordinate leaders with the capability and authority to execute orders

³ Posen, pg 34 The term "perspective" is used in place of "theory," as the arguments do not utilize the full extent of the theories, only a brief summary of them.

⁴ Posen, pg 35 says Balance of Power theory should be able to explain the behavior of sovereign political units acting in an unregulated environment, which is not the case here. See Clausewitz, *On War*, pg 87: "The political object is the goal, war is the means of reaching it, and the means can never be considered in isolation from their purpose." Pg 606: "If war is part of policy, policy will determine its character."

⁵ Posen, pg 42

⁶ Posen, pg 43

and complete tasks.⁷ Defined as roles, Congressional law establishes the broad and enduring purposes for which US military forces exist.⁸ To enable military forces to fulfill their legally established roles, the President and Secretary of Defense assign them specific responsibilities, known as functions.⁹ Title 10 United States Code, *Armed Forces*, and Department of Defense Directive 5100.1, *Functions of the Department of Defense and Its Major Components*, delineate the functions of each service. Title 10 and DoDD 5100.1 define *what* means to employ, though they do not define *how* to employ those means. (emphasis added) This leaves the *how* portion of Posen's two important questions unanswered.¹⁰ The details of how to employ military forces are the responsibility of the services. Each of the services form these details into doctrine, based on the attributes of the organization and the attitudes of its people.¹¹ The Air Force and the Marine Corps exist for different roles. These different roles affect differences in their composition, function, and doctrine; and create disparity in their approaches to command and control.

The role of the Air Force is to organize, train, and equip aviation forces for prompt and sustained offensive and defensive air operations to defend the United States and protect its interests through air and space power, guided by the principles of war and the tenets of air and space power.¹² Title 10 states, "In general, the Air Force includes aviation

⁷ Posen, pg 44. JP 1-02, pg 84. Author translates Posen's discussion of organizational control and coordination into command and control for military organizations, through incorporation of the JP 1-02 definition of command – "...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."

⁸ Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States*. pg xii, MCDP 1-0, pg 1-13 & AFDD 1, pg 35

⁹ JP 1, pg xii, JP 1-02, pg 189, MCDP 1-0, pg 1-13 & AFDD 1, pg 36

¹⁰ Posen, pg 13 "Two questions are important: *What* means shall be employed? and *How* shall they be employed?"

¹¹ Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*., pg 36. Posen, pgs 41-42

¹² AFDD 1, pgs 19 & 35

forces both combat and service not otherwise assigned. It shall be organized, trained, and equipped primarily for prompt and sustained offensive and defensive air operations. It is responsible for the preparation of the air forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Air Force to meet the needs of war.”¹³

DoDD 5100.1 assigns the following functions to the Air Force for execution of its Title 10 assigned role: (list is representative, not exhaustive)

- Conduct nuclear operations in support of strategic deterrence.
- Conduct offensive and defensive operations, to include appropriate air and missile defense, to gain and maintain air superiority, and air supremacy as required, to enable the conduct of operations by US and allied land, sea, air, space, and special operations forces.
- Conduct global precision attack, to include strategic attack, interdiction, close air support, and prompt global strike.
- Provide timely, global integrated ISR capability and capacity from forward deployed locations and globally distributed centers to support worldwide operations.
- Provide rapid global mobility to employ and sustain organic air and space forces and other Military Services and USSOCOM forces, as directed, to include airlift forces for airborne operations, air logistical support, tanker forces for in-flight refueling, and assets for aeromedical evacuation.
- Provide agile combat support to enhance the air and space campaign and the deployment, employment, sustainment, and redeployment of air and space forces and other forces operating within the air and space domains, to include joint air and space bases, and for the Armed Forces other than which is organic to the individual Military Services and USSOCOM in coordination with other Military

¹³ 10 USC 8062 Policy; composition; aircraft authorization, statute (c). From www.law.cornell.edu/uscode/10/usc_sec_10_00008062----000.html accessed 6 March 2011.

Services, Combatant Commands, and USG departments and agencies.

- Conduct global integrated command and control for air and space operations.¹⁴

From these DoD mandated service functions, Air Force professionals form doctrine and operational functions to deliver air and space power to the JFC. The 17 operational functions of Air Force air and space power are: Strategic Attack, Counterair, Counterspace, Counterland, Countersea, Information Operations, Combat Support, Command & Control, Airlift, Air Refueling, Spacelift, Special Operations, Intelligence, Surveillance & Reconnaissance, Combat Search & Rescue, Navigation & Positioning, and Weather Services.¹⁵ See figure 2.

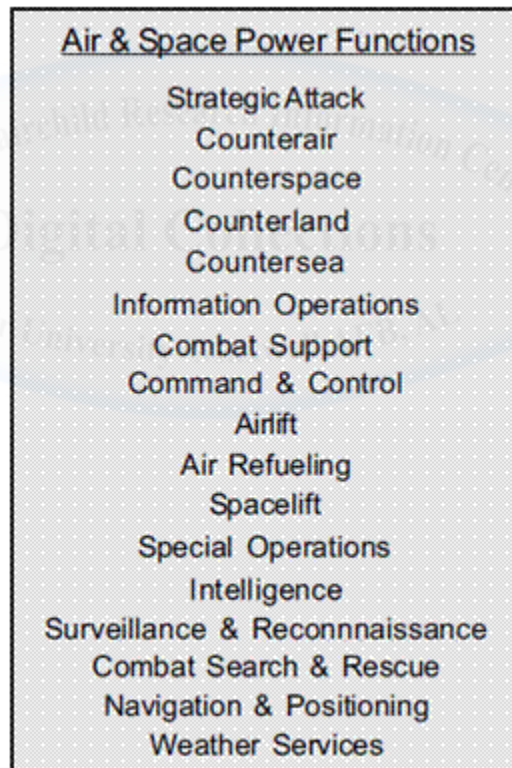


Figure 2. The 17 Functions of Air & Space Power

Source: Air Force Doctrine Document 1, *Air Force Basic Doctrine*.

¹⁴ DoDD 5100.1, Encl (6), Para 6.b, pg 34. This list represents only those functions that provide direct correlation to aviation capabilities of other services, omitting space specific functions.

¹⁵ AFDD 1, pg 39

The role of the Marine Corps is to provide an expeditionary force in readiness.¹⁶ Title 10 states,

The Marine Corps, within the Department of the Navy, shall be so organized as to include not less than three combat divisions and three air wings, and such other land combat, aviation, and other services as may be organic therein. The Marine Corps shall be organized, trained, and equipped to provide fleet marine forces of combined arms, together with supporting air components, for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign. In addition, the Marine Corps shall provide detachments and organizations for service on armed vessels of the Navy, shall provide security detachments for the protection of naval property at naval stations and bases, and shall perform such other duties as the President may direct. However, these additional duties may not detract from or interfere with the operations for which the Marine Corps is primarily organized.¹⁷

For execution of its role, DoDD 5100.1 directs the Marine Corps to provide forces “normally employed as combined arms air-ground task forces” and assigns the following functions:

- Seize and defend advanced naval bases or lodgments to facilitate subsequent joint operations.
- Provide close air support for ground forces.
- Conduct land and air operations essential to the prosecution of a naval campaign or as directed.
- Conduct complex expeditionary operations in the urban littorals and other challenging environments.
- Conduct amphibious operations, including engagement, crisis response, and power projection operations to assure access. The Marine Corps has primary responsibility for development of amphibious doctrine, tactics, techniques, and equipment.

¹⁶ USMC, *35th Commandant of the Marine Corps Planning Guidance*, Introduction & pg 5

¹⁷ 10 USC 5063 United States Marine Corps: composition; functions (a). From www.law.cornell.edu/uscode/10/usc_sec_10_00005063----000.html accessed 5 March 2011.

- Conduct security and stability operations and assist with the initial establishment of a military government pending transfer of this responsibility to other authority.
- Provide security detachments and units for service on armed vessels of the Navy, provide protection of naval property at naval stations and bases, provide security at designated U.S. embassies and consulates, and perform other such duties as the President or Secretary of Defense may direct. These additional duties may not detract from or interfere with the operations for which the Marine Corps is primarily organized¹⁸

From these DoD mandated service functions, Marines form doctrine and operational functions to deliver combined arms, air-ground combat power to the combatant commander. Air power is only one segment of MAGTF combat power, and Marine air power doctrine is inevitably different from, though complimentary to, ground power doctrine. It is also subordinate to overarching Marine Corps warfighting doctrine. The role of the ACE is to project combat power, conduct air operations, and contribute to battlespace dominance in support of the MAGTF's mission. Marine Aviation organizes, trains, and equips for that role.¹⁹ Derived from the role and functions of the Marine Corps, and the role of the ACE within the MAGTF, Marines developed the following six functions of Marine Aviation: Offensive Air Support, Antiair Warfare, Assault Support, Air Reconnaissance, Electronic Warfare, and Control of Aircraft and Missiles.²⁰ See figure 3.

¹⁸ Department of Defense (DOD) Directive 5100.1. *Functions of the Department of Defense and Its Major Components*. Encl (6), Para 5.c, pgs 31-32

¹⁹ Marine Corps Warfighting Publication (MCWP) 3-2 *Aviation Operations*. pg 1-1

²⁰ MCWP 3-2, pgs 2-1 – 2-6

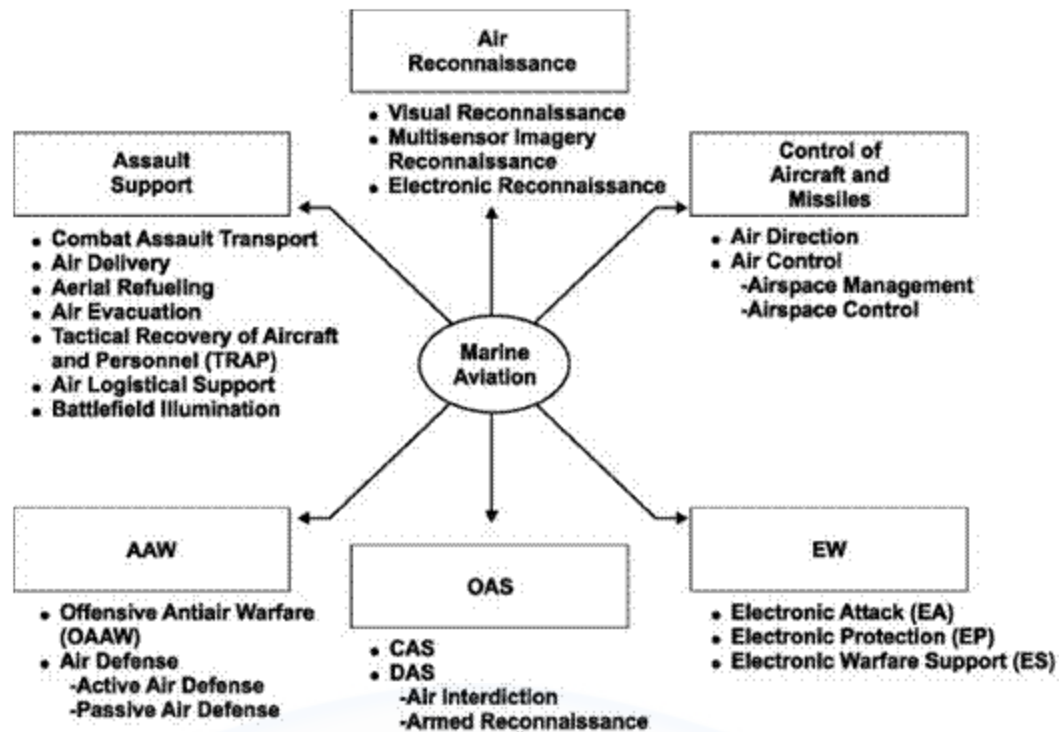


Figure 3. The Six Functions of Marine Aviation

Source: Marine Corps Warfighting Publication 3-2, *Aviation Operations*

As Posen asserts, the pursuit of purpose gives rise to bureaucracy, and the specificity of functions in a bureaucracy mirrors the specificity of its purpose.²¹ For both the Air Force and the Marine Corps, the specificity of functions reflects the specificity of their purpose, or role. The purpose of the Air Force is to provide prompt and sustained offensive and defensive air operations in defense of the United States and its interests through air and space power. The purpose of the Marine Corps is to maintain a combined arms, air-ground, expeditionary force in readiness to conduct complex, expeditionary land and air operations, in the urban littorals (coastal cities) and other challenging environments, essential to the prosecution of a naval campaign or as directed. Each service pursues a different purpose, and the accomplishment of functions associated with that purpose. These differing pursuits trigger

²¹ Posen, pg 43

conflict between each service's approach to unity of effort and unity of command. The differences arise from the vision of the people that pursue the purpose of each service, and the experience gleaned from the environment in which it operates.

Although the Air Force and Marine Corps both promote centralized command, the term carries different meaning for each service. In conjunction with its Title 10 and DoDD 5100.1 responsibilities, as previously mentioned, the Air Force concept of centralized command specifically focuses on fusing the multiple capabilities that constitute air and space power, even if the participants are not necessarily part of the same command or organization. The missions assigned to the JFACC – counterair, strategic attack, etc... - span the entire joint AO, and require air assets from all forces assigned to the JFC. Coordination may be accomplished by cooperation, though it is best achieved by vesting a single commander with the authority to direct all force employment in pursuit of a common objective. This reinforces the Air Force position that, due to the unique ability of air and space power to affect the strategic and operational levels of war, a single Airman at the component command level, the JFACC, must control it.²² The Air Force prefers — and in fact, plans and trains — to employ forces through a COMAFFOR who is also dual-hatted as a joint force air and space component commander.²³

A caveat for the Air Force position on unity of command is that Title 10 and DoDD 5100.1 responsibilities assign the Air Force responsibility for preparation of the air forces necessary for the effective prosecution of war *except as otherwise assigned and other than which is*

²² Air Force Doctrine Document (AFDD) 6-0. *Command and Control*. pg 12

²³ Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*. pg 65

*organic to the individual Military Services and USSOCOM.*²⁴ (emphasis added) In line with these ideas, Marine Aviation is organic to the Marine Corps, and typically assigned to a MAGTF.

In conjunction with its Title 10 and DoDD 5100.1 responsibilities to provide a combined arms air ground task force for seizure and defense of advanced naval bases or lodgments, and conduct complex expeditionary land and air operations, the Marine Corps definition of command focuses on using available resources and controlling military forces for the accomplishment of assigned missions. For Marines, military force includes the MAGTF Commander's ground forces, logistics capability, and organic aviation forces, task organized and coordinated for the accomplishment of assigned missions. Marines believe in both unity of command and unity of effort. Marine Aviation is organic to the Marine Corps, and provides the MAGTF Commander with firepower, flexibility, mobility, force protection, sustainability, and command and control.²⁵ The MAGTF Commander retains operational control (OPCON) of his aviation assets to preserve unity of command over the combined arms team that is the heart of the Marine combat power presented to the JFC. Just as Air Chief Marshal Sir Arthur Tedder asserted, and airmen believe, that "Air power in penny packets is worse than useless... Its strength lies with unity," Marines believe that the strength of the MAGTF lies with unity, and that separating air power from ground power is detrimental to unity of command of MAGTF combat power.²⁶

²⁴ 10 USC 8062 Policy; composition; aircraft authorization, statute (c). From www.law.cornell.edu/uscode/10/usc_sec_10_00008062----000.html accessed 6 March 2011. DoDD 5100.1, Encl (6), Para 6.b, pg 34.

²⁵ MCWP 3-2, pg 3-1 & 3-8 – 3-9

²⁶ Tedder, Air Marshal Arthur. "Air, Land, and Sea Warfare." *Journal of the Royal United Services Institution*, XCI, no 561. (February 1946). pg 61.

People and Environment

Where purpose may have driven the Air Force and the Marine Corps to differences in command and control doctrine and practice, people and environment demand the ability to adjust continually. These two are the source of uncertainty that drives a need to operate in ways that often seem outside doctrine, depending on the situation. Combined with purpose, people and environment exert a tension on centralization and decentralization. Barry Posen states, "In the most basic sense, the environment spawns the organization; it produces the purpose that calls the organization into being... To pursue their purposes, organizations must coordinate and control the contributions of large numbers of variable human beings in the context of an uncertain environment."²⁷ Chapter 3 provides a historical review of the environments that have spawned the Air Force and Marine Aviation into being, and influenced the people that fill their ranks.

Conclusion

Modern states divide national security functions among specialized and bureaucratized military professionals who are responsible for the composition and execution of military doctrine. The attributes of military organizations, as well as the attitudes of the professionals who constitute them, influence the doctrine they create against the milieu of the purpose they serve, the people they are composed of, and the environment in which they operate.

The Air Force and the Marine Corps exist for the pursuit of different purposes; fill their ranks with different types of people, and train to operate in different environments. As such, the difference between the Air Force and Marine Corps command and control doctrine lies in the purpose each service pursues and the missions assigned in

²⁷ Posen, pg 43-44

pursuit of that purpose. The purpose of the Air Force is to provide air and space power to the joint force. This prompts the Air Force to seek unity of effort of the air and space power function by controlling all assets of to the joint force air component. The purpose of the Marine Corps is to provide a combined arms force, capable of independent, expeditionary operations. This prompts Marines to seek unity of command, and therefore unity of effort, over all air and ground power assets of the MAGTF, applying MAGTF combat power to mission accomplishment when operating independently, or providing the whole of MAGTF combat power to the JFC in joint warfare.

These purposes and missions are shaped by the attributes of the services, the attitudes of the people that form the ranks, and the environment in which they function. The next chapter reviews the experiences of each service, and how the people and the environment affected service doctrine.

Chapter 3

Airmen, Marines, and the Operational Environment

The patron saint of Marine Aviators was not Billy Mitchell but Alfred A. Cunningham...

Michael R. Gordon and General Bernard E. Trainor

Since the first combat employment of airplanes in WWI, airmen have quarreled with surface forces, and among themselves, over command and control of air forces. This chapter provides a brief review of USAF and Marine aviation experiences that have influenced the attitudes of Airmen and Marines who developed and implemented doctrine, and shaped the attributes of their services.

These experiences reinforced very different perspectives in Marine and Army (later Air Force) aviators' minds about the value of air power. Each interpreted the lessons of the experiences through the lens of their service's purpose. Each then structured command and control practice and doctrine according to this interpretation.

World War I

Although American air power involvement in WWI was limited, it provided an opportunity for aviators of all services to test recently developed skills in support of major combat operations. Army Airmen and Marine Aviators faced different situations in Europe and derived different experiences from the war. These different experiences built the foundation for the different attitudes that would shape each service's doctrines for the future employment of air power.

Army Air Service

By the time US Army Air Service squadrons deployed in support of the American Expeditionary Force (AEF), in April 1918, nearly four years

of experience had already proven the combat utility of the airplane.¹ With the experience of combat, early WWI flyers had developed training methods and doctrine for employment of aviation, both of which proved useful to the Americans. Army Air Service flyers copied or modified the teachings of their fellow British and French airmen in concept and application.²

From the beginning, the US airmen learned from their allies that airpower assets should not be parceled out to ground units, but unified under a single commander who could concentrate them when and where necessary to achieve tactical objectives. Perhaps the biggest advocate for this lesson was the most influential air power intellectual among the Allies, Commander of the British Royal Flying Corps, Major General Hugh Trenchard.³ General Trenchard believed that his notion of the need to concentrate air forces was validated during the battle of Chateau-Thierry, in July of 1918, where piecemeal employment of Allied squadrons led to heavy losses in the battle against numerically superior German forces. This lesson was not lost on the Chief of Air Service, First Army, Colonel William “Billy” Mitchell, who used the lesson to convince the AEF Commander, General John Pershing, and other Allied commanders, to mass offensive air power during the American advance at St. Mihiel.⁴

In the largest combat air force yet assembled, Mitchell combined 1,500 American, British, French, and Italian aircraft, as well as the staff needed to plan and direct the operation. Pursuit squadrons quickly gained control of the air over the battlefield while bomber and assault

¹ Trest, Warren A. *Air Force Roles and Missions : A History*. pgs 10-11. American pilots flew in Allied squadrons prior to this date, though logistics and training delays prevented Air Service squadron deployments until April 1918.

² Leonard Baker & B.F. Cooling. ‘*Developments and Lessons before World War II.*’ Cooling, B. Franklin, and United States. Air Force. Office of Air Force History. *Case Studies in the Achievement of Air Superiority*. Pgs 2-4.

³ Trest, pg 12

⁴ Trest, pg 16

aircraft struck the enemy rear area, and American ground forces completed their mission in four days. The centralization of air power proved successful and the practice continued until the Meuse-Argonne offensive. During the Meuse-Argonne offensive, ground units divided into two separate forces. In order to maximize support for their divided ground force counterparts, the air force also divided into two forces, though newly promoted Brigadier General Mitchell maintained central direction of both.⁵ The apparent success of air power unified under a single commander established what Tami Davis Biddle called an “aerial dogma” for centralization and set a precedent for future Air Service, Air Corps, and Air Force notions about command and control of air power.⁶

1st Marine Aviation Force

At the same time, Marine aviation gained momentum from the lesson that aviation’s main purpose was direct support of ground troops. In November and December of 1917, Captain Alfred A. Cunningham, the first Marine Aviator and *de facto* director of Marine Aviation, traveled to France to train and fly with French pilots, in order to gain experience and collect information for the upcoming 1st Marine Aviation Force deployment to France.⁷ Before and during his trip to France, Cunningham attempted to secure authority - from both the War Department in Washington D.C. and the AEF authorities in France - for the Marine squadron to serve with the Marine Brigade already fighting in France. The Army denied his request, and Cunningham would later reflect on the experience, stating, “Army aviation authorities stated candidly that if the squadron ever got to France it would be used to

⁵ Trest, pg 17

⁶ Biddle, Tami Davis. *Rhetoric and Reality in Air Warfare : The Evolution of British and American Ideas About Strategic Bombing, 1914-1945*. pg 53

⁷ Cunningham, Alfred A. “Value of Aviation to the Marine Corps.” *Marine Corps Gazette*, V no. 3 (September 1920)pg 223. See also Johnson, Edward C., Graham A. Cosmas, and United States. Marine Corps. History and Museums Division. *Marine Corps Aviation : The Early Years, 1912-1940*. pgs 11 & 15

furnish personnel to run one of their training fields, but that this was as near the front as it would ever get.”⁸

In search of a mission, he teamed with Navy planners and proposed expanding the Navy’s anti-submarine operations in Calais with land-based Marine aircraft. Cunningham won approval from both Navy and Marine authorities; and, on 11 March 1918, received orders to establish and take command of the 1st Marine Aviation Force, and deploy to France in support of the Navy Northern Bombing Group.⁹

After assembly, training, and embarkation, Cunningham’s squadron arrived in Brest on 30 July 1918; however, logistics difficulties landed them in France without their aircraft and with much of their ground support equipment scattered among Army units.¹⁰ With no airplanes, and no chance of receiving airplanes for quite some time, newly promoted Major Cunningham integrated his pilots into the undermanned British RAF Squadrons 217 and 218 until enough Marine airplanes arrived for the squadron to conduct its own missions, in October 1918.¹¹ By then, the mission of the Navy Northern Bombing Group had changed due to German withdrawal from their submarine bases, and the Navy no longer required Marine assistance. The mission change allowed the Marines to continue working alongside RAF squadrons in support of British and Belgian ground forces.¹² Before the armistice, on 11 November 1918, Marines flew 43 missions with the RAF and 14 missions on their own; including the first known aerial resupply - dropping 2,600 pounds of food to an isolated French regiment.¹³

Following a difficult beginning and a short deployment, the Marine Aviators set their sights on quickly returning home to expand and

⁸ Cunningham, *Value*, pg 223-224

⁹ Johnson, E.C. pg 15. Mersky, pg 9-10

¹⁰ Johnson, E.C. pgs 16-20

¹¹ Johnson, E.C. pgs 21-22

¹² Mersky, Peter B. *U.S. Marine Corps Aviation : 1912 to the Present*. 3rd ed. pg 11

¹³ Cunningham, pgs 225-226. Mersky, pg 12

enhance Marine Aviation. As Cunningham, stated, “I think we could accomplish much more at home, getting our Aviation service established under the new conditions of peace.”¹⁴ Reflecting on Marine Aviation experiences in WWI, in defense of the fledgling Marine Aviation program, and in an attempt to mitigate opposition to aviation within the Corps, Major Cunningham wrote an article for the September 1920 issue of the *Marine Corps Gazette*, titled ‘*Value of Aviation to the Marine Corps.*’ In the article, he stated, “It is fully realized that the only excuse for aviation in any service is its usefulness in assisting the troops on the ground to successfully carry out their operations.” To pacify infantry officer arguments that Marine Aviation did not hold true to this idea, and was not overhead Marines on the battlefield when needed, he explained how Army aviation authorities prevented Marine Aviation from supporting the Marine Brigade. In a lengthy discussion that reflects an early 20th century approach to the six functions of Marine Aviation mentioned in chapter 2, he dedicated the bulk of his article to informing Marine Infantry officers about the practical uses of aviation in combat operations.¹⁵

Marine Aviators cut their teeth in combat during WWI; however, the experiences that would significantly shape their attitudes toward aviation command and control would come from the small wars of the 1920s and 1930s.

Interwar Years

Emerging from WWI with differing experiences, the Army Air Service and Marine Aviators each pursued development of their service for different purposes. In addition to differences in purpose, each air

¹⁴ Johnson, E.C. pg 25

¹⁵ Cunningham, , pg 222.

service faced different struggles within their parent organizations and attempted to prove utility through fundamentally different approaches.

Air Corps Tactical School

The Army's development naturally progressed along General Mitchell's preferred lines. Amidst the struggle for greater independence from the institutional confines of the Army, Airmen at the Army Air Service Tactical School – later the Air Corps Tactical School (ACTS) - developed doctrine and operating concepts through academic study of air power theories, WWI combat experiences, and histories of the air war. Without firsthand strategic bombing experience, Army Airmen based their academic approach to air warfare on their own predispositions, study of their allies' experiences, and interpretation of air power theory.¹⁶ ACTS curriculum was largely based on the teachings and writings of General Mitchell, who believed in the effectiveness of massive, centralized air offensives, and the independent decisiveness of airpower.¹⁷ Based on his experience in WWI General Mitchell stated, "The system of command of military air power should consist in having the greatest centralization practicable. An air force can now move from one to two thousand miles within twenty-four hours. Military elements on the land or water can move only a fraction of this... To assign air units to any one of these ground organizations would result in piece-meal application of air power and the inability to develop the maximum force at the critical point."¹⁸

Marine Airpower in Small Wars

In contrast, the Marines added to their corporate aviation knowledge with practical experience that reinforced Cunningham's lessons. As the only American ground and aviation units engaged in combat between the World Wars, the Marines developed doctrine and

¹⁶ Biddle, pgs 128-133

¹⁷ Trest, pg 55. See Also Baker & Cooling, *Air Superiority*, pg 9

¹⁸ Mitchell, William. *Winged Defense : The Development and Possibilities of Modern Air Power Economic and Military*. pg 217

concepts based on combat operations in The Dominican Republic, Haiti, Central America, and Asia.¹⁹ Although the 1st Marine Aviation Force disbanded after WWI, Major Cunningham formed the equipment and personnel into two new squadrons, D and E. He wasted no time deploying D Squadron – later redesignated 1st Squadron - to the Dominican Republic in February of 1919, to support the 2nd Marine Brigade, and E Squadron – later redesignated 4th Squadron - to Haiti in March of 1919, to support the 1st Marine Brigade.²⁰ In the Dominican Republic, Marine Aviators guided patrols to contact with guerillas and attacked bandit formations on the ground with machine gun fire and bombs.²¹ Similar activities in Haiti led to experimentation with coordinated air-ground tactics and dive-bombing techniques that would prove essential to the Marine Aviator's future role of close air support.²² On his experience in the Dominican Republic, one of the Marine Aviators concluded, "We were there and they used us, and they used us to their advantage, and consequently we became a useful and integral part of the Marine Corps."²³

The small wars in Haiti and the Dominican Republic provided an environment for Marine Aviators to develop their tactics, doctrine, and, more importantly, their concepts about aviation. The following excerpt from a 1926 lecture to student Marine officers by Major E. H. Brainard, then Chief of Marine Aviation expresses these concepts:

All our training and war plans are based on the idea that the Marine Corps will act as an advance base force to seize and hold an advance base from which the Navy can operate against the enemy...In any war with a major force our fleet is going to be fully occupied and the advance base force will

¹⁹ Parker, William D., and United States. Marine Corps. History and Museums Division. Historical Branch. *A Concise History of the United States Marine Corps, 1775-1969*. pg 56

²⁰ Johnson, E.C. pg 27. See Also Parker, W.D., pg 56

²¹ Corum & Johnson, *Airpower in Small Wars*, pg 26

²² Corum & Johnson, *Airpower in Small Wars*, pg 27-28

²³ Johnson, E.C., pg 49

have to... use its own aviation for its information, protection from attack from the air and assistance in holding the base after seizure. I do not believe that the commander-in-chief is going to detach any first line carrier for this duty and for that reason Marine Corps Aviation is of paramount importance in the force. It also seems self-evident that there would be far better cooperation and results if the Marine force had Marine aviators rather than some Naval unit temporarily attached...To obtain maximum results, aviation and the troops with which it operates should be closely associated and know each other, as well as have a thorough knowledge of each other's work...

Marine Aviation is not being developed as a separate branch of the service that considers itself too good to do anything else. Unlike the Army Air Service, we do not aspire or want to be separated from the line or to be considered as anything but Marines.²⁴

Conflict in Nicaragua reinforced these lessons on a larger scale. On 18 February 1927, Marine Observation Squadron 1, followed by Observation Squadron 4 one month later, deployed to Managua, Nicaragua to support the 2nd Marine Brigade.²⁵ As James Corum and Wray Johnson assert in *Air Power in Small Wars*, "Nicaragua was the proving grounds for the Marines' concept of airpower in small wars, a laboratory that also provided the basic formula for Marine air-ground teams in World War II and up to the present."²⁶ Aviation was instrumental to the success of the Marine Brigade, delivering firepower and other support to ground units isolated by vast stretches of mountainous rain forest. The first known example of ground unit control of an air attack occurred when a pinned down infantry squad laid out cloth panels to indicate direction and distance to the enemy.²⁷ The first known independent air attack against a fortified position held by ground

²⁴ Brainard, Edwin H. "Marine Aviation – A Lecture." *Marine Corps Gazette*, 11, no.3 (September 1926). p. 195-197. USMC, *Marine Corps Aviation: The Early Years*, pg 31, identifies Brainard as Chief of Marine Aviation.

²⁵ Johnson, E.C., pgs 55-56

²⁶ Corum, James S., and Wray R. Johnson. *Airpower in Small Wars : Fighting Insurgents and Terrorists*. pg 12

²⁷ Parker, W.D. pg 56

troops occurred when Marine Aviators attacked the rebel stronghold at El Chipote after the Brigade Commander considered a ground assault too risky.²⁸ In addition, aside from tactical missions, Marines used aircraft to evacuate wounded, deliver supplies, and transport personnel. Marine Aviators understood that airpower played a significant, if not decisive role in fighting irregular warfare and that the role of Marine Aviation would be support of ground forces.²⁹

Marines codified much of their small wars experience, including their Aviation experience, in the Marine Corps *Small Wars Manual*, first published in 1936 and revised in 1940.³⁰ Chapter IX, *Aviation*, describes “Control and Command” as follows:

Control and Command. – a. The senior aviator on duty with the command exercises a dual function similar to that of the force artillery commander. He commands the air force and acts as advisor on air matters to the Force Commander. The air commander will generally have an extensive detailed knowledge of the area in which operations are being conducted – first-hand knowledge which may not be available otherwise – and he should maintain close contact with the force commander and staff through the medium of frequent conferences. An aviation liaison officer may be detailed to represent the air commander at headquarters during the absence of the latter on flying mission.

b. Normally, all aviation attached to a small wars expeditionary force will operate from the main airdrome under centralized control. However, when distances are great and weather conditions uncertain, it may become advisable to detach aviation units to subordinate commands, to be operated from auxiliary airdromes.³¹

²⁸ Corum & Johnson, pg 37

²⁹ Corum & Johnson, pg 43

³⁰ Corum & Johnson, pg 43. See Also Schlosser, Nicholas J. “The Marine Corps Small Wars Manual: An Old Solution to a New Challenge?” *Fortitudine*, 35, no. 1 (2010). pg 4, See Also Parker W.D., pg 49 for a history of the development of the *Small Wars Manual*, beginning as a series of *Marine Corps Gazette* articles in 1922.

³¹ United States Marine Corps. *Small Wars Manual*. Chapter IX, Section IV, General Conduct of Air Operations, pg 9-15

Use of the term “centralized control” in the Small Wars Manual suggests parity with the teachings of General Mitchell, though Mitchell’s idea is countered by the tenet that aviation units are attached to small wars expeditionary forces. This idea was central to the inclusion of Marine Aviation in the Fleet Marine Force (FMF).

Initially formed in December 1933, the FMF provided a combined arms – infantry, artillery, aviation - force to a Navy fleet commander, to seize and hold an advance base from which the Navy could operate. It also set the stage for the first struggles for control of Marine Aviation when the Navy Air Battle Force Commander and the FMF Commander argued over the degree to which each of them controlled Marine Aviation. The debate required top-level intervention and, following a year of correspondence between them, the Commander-in-Chief, US Fleet (CinCUS), and the Commandant of the Marine Corps resolved the conflict in favor of the FMF Commander in July 1939.³²

During the interwar years, Air Service Airmen, before 1926, and Army Air Corps Airmen, after 1926, and Marine Aviators built on their WWI experiences, and developed their concepts of airpower and doctrines based on different roles and missions. By means of intensive academic study, while struggling for service independence, Air Corps thinkers articulated the concept of airpower as an independently decisive force, capable of achieving victory in defense of the homeland, through strategic bombardment rather than tactical support of ground forces. Through the refining process of combat experience, and struggling to prove the value of aviation within the Marine Corps, Marine Aviators recognized the importance of tactical support of ground forces, in support of expeditionary operations, as their primary mission, developing tactics and procedures to meet that mission.³³ Each aviation service

³² Johnson, E.C., pgs 61-72

³³ Corum & Johnson, pgs 42-43. See Also Cunningham, Alfred A. Value of Aviation to the Marine Corps, Marine Corps Gazette, Vol V, No 3, September 1920.

shaped its airpower perspective based on their different service cultures and different views of their roles and missions, within the context of their relationship with their parent service. Army Air Corps thoughts and ideas conflicted with official Army thinking and doctrine. Army General Staff and War College officers viewed airpower as subordinate to ground forces, while the Airmen believed in an independently decisive air force. Conversely, Marine Aviator thoughts and ideas embraced the role of ground support, shared cooperative views of airpower with Marine ground forces, and developed doctrine accordingly.³⁴

World War II

Allied air operations in Europe and Africa tested both Army doctrine concerning aviation support of ground forces and airpower thinking in the Army Air Forces (AAF), and highlighted the difference between the two.³⁵ Pacific theatre air operations were the first truly joint air operations conducted by US air forces, and provide the first examples of cooperation between the Army AAF and Marine aviation.

North Africa

In North Africa, AAF officers found the impetus to formally push for the principles of centralization under one airman. Lack of clarity in the 1940 version of Army Field Manual (FM) 1-5, *Employment of Aviation of the Army*, coupled with inconsistencies in the 1942 version of FM 31-35, *Aviation in Support of Ground Forces*, led to conflict between ground and air commanders at the outset of Operation Torch, the Allied invasion of French Morocco, in November of 1942.³⁶ Failing to study the recent lessons of Air Chief Marshall Sir Arthur Tedder's successful RAF

³⁴ Corum & Johnson, pg 42

³⁵ Overy, Richard J. *The Air War 1939-45*, pg 63. The Army Air Corps became the Army Air Force in June of 1941.

³⁶ Syrett, David. *Northwest Africa, 1942-1943*, Cooling, B. Franklin, and United States. Air Force. Office of Air Force History. *Case Studies in the Achievement of Air Superiority*. pg 226, See Also, Rife, Shawn P. "Kasserine Pass and the Proper Application of Airpower." *Joint Force Quarterly*, Autumn Winter 1998-1999.

experiences with centralized control of air operations in which he defeated the Axis Air Arm in the African Western Desert, American planners divided their air forces, subordinating the separate air commanders to the ground commanders they supported. The resulting command structure lacked unity of command for the air forces, produced conflict in setting priorities, and reduced the effectiveness of Allied airpower. The reduced efficacy of airpower permitted the Luftwaffe to operate with relative impunity, inflicting heavy casualties on allied ground forces at Kasserine Pass, nearly claiming German victory there in February of 1943.³⁷

With this perceived calamity as motivation, Army officers had reason to make significant organizational and doctrinal changes. Acting on advice from Air Marshall Tedder, the Allied Commander in Chief, General Dwight Eisenhower, instituted sweeping changes to his command and control structure on 18 February 1943, centralizing control of all Allied Mediterranean Air Forces under Air Marshall Tedder and, subordinate to Tedder, all Allied Northwest African Air Forces under Lieutenant General Carl Spaatz.³⁸ The reorganization united Allied air forces under a centralized command structure and facilitated coordination of strategic and tactical air operations, defeating German forces in Africa, in May of 1943.³⁹ The American experience in North Africa influenced the ideas posed in the July 1943 publication of FM 100-20 *Command and Employment of Airpower*, which stated,

“LAND POWER AND AIRPOWER ARE CO-EQUAL AND INTERDEPENDENT FORCES; NEITHER IS AN AUXILIARY OF THE OTHER... AIR FORCES MUST BE EMPLOYED PRIMARILY AGAINST THE ENEMY’S AIR FORCE S UNTIL AIR SUPERIORITY IS OBTAINED... CONTROL OF AVAILABLE AIRPOWER MUST BE CENTRALIZED AND COMMAND MUST BE EXERCISED THROUGH THE AIR

³⁷ Rife, pg 73-74

³⁸ Syrett, 233-260 & Figure 5-2.

³⁹ Syrett, 233-247

FORCE COMMANDER... COMMAND OF AIR AND GROUND FORCES IN A THEATRE OF OPERATION WILL BE VESTED IN THE SUPERIOR COMMANDER...WHO WILL EXERCISE COMMAND OF AIR FORCES THROUGH THE AIR FORCE COMMANDER AND COMMAND OF THE GROUND FORCES THROUGH THE GROUND FORCE COMMANDER. 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.”⁴⁰
(capitalization in original)

With the publication of FM 100-20, AAF airmen finally achieved doctrinal codification of air force equality with ground forces and the need to centralize control of airpower. It served as a foundation for the AAF tenets of command and control for the remainder of the war and beyond.⁴¹ Comparison of FM100-20 and Small Wars Manual delineation of command and control, especially for isolated units, reveals striking similarity.

Midway Island

Joint air operations in the Pacific added another reason to push for a single air commander. Disparately trained and equipped aviation organizations formed many of the land-based air forces assigned to island garrison commanders throughout the Pacific Islands. Without some form of centralization, these eclectic air organizations lacked unity of effort.

The battle of Midway, the first operation to employ both AAF and Marine aviation forces, provided an example of what not to do. In actuality, the Battle of Midway involved two separate air battles. Aircraft from the Carrier Striking Force, under the command of Rear Admiral

⁴⁰ Hinote, Clint. *Centralized Control and Decentralized Execution : A Catchphrase in Crisis?* pg 8. See also War Department Field Manual 100-20 *Command and Employment of Airpower*, 21 July 1943.

Paragraphs 1-3, pg 2

⁴¹ Syrett, pgs 260-263

Frank Fletcher, including Navy aircraft aboard the *USS Yorktown*, *USS Enterprise*, and *USS Hornet*, conducted one battle. The shore-based assets at Midway Island, under the command of Navy Captain Cyril Simard, Commanding Officer of Naval Air Station Midway, conducted the other battle - the “joint” battle. Commander-in-Chief of the Pacific Ocean Area (CINCPAC), Admiral Chester Nimitz, typically placed land-based air forces under the command of local garrison commanders.⁴² Captain Simard’s air force included: a Navy component, composed of 16 Catalina patrol aircraft and six Avenger torpedo bombers under Commander Massie Hughes; Marine Aircraft Group (MAG) 22, with a mostly obsolete mix of 64 fighters and dive bombers under the command of Lieutenant Colonel Ira Kimes; and a detachment of 17 B-17 and four B-26 bombers from the Hickam-based 7th AAF, under the command of Major General Willis Hale.⁴³ Major General Hale was the senior airman on Midway Island, though his detachment was subordinate to Captain Simard, the ground-based air force commander. This situation was further confused by Hale reporting to both Simard and Major General Robert Richardson, the 7th AAF Commanding General, at Hickam AFB, Pearl Harbor, Hawaii.⁴⁴

Although the land based air force on Midway Island included AAF, Navy, and Marine air forces it was not a truly joint force, as there was no coordination or common command and control. Essentially, the three components waged three separate air battles against a common enemy. The aircraft were largely incompatible, the forces had never trained together, and most importantly, none of the service air component commanders exercised overall command - by either direction or initiative

⁴² Winnefeld, James A., Dana A. Johnson, and James A. Winnefeld. *Joint Air Operations : Pursuit of Unity in Command and Control, 1942-1991*. pg 26

⁴³ Sherrod, Robert Lee. *History of Marine Corps Aviation in World War II*. 1st ed.pgs 54 & 62. Also Winnefeld & Johnson, pg 15

⁴⁴ Winnefeld & Johnson, pg 15

- to unite the air force in coordinated attacks to achieve Admiral Nimitz's goal of destroying the Japanese aircraft carriers.⁴⁵

Due to the type and age of assigned aircraft, the scant training of pilots, and the uncoordinated nature of their strikes, land based air power inflicted negligible damage on the Japanese fleet, only damaging one Japanese oiler during the battle.⁴⁶ Admiral Nimitz achieved victory in the Battle of Midway through the concerted efforts of carrier-based aircraft, with credit for air defense of Midway Island awarded to the Marines of MAG-22, primarily because the Marines possessed and employed all the fighter aircraft on the island.⁴⁷

At the strategic level, Admiral Nimitz succeeded in assembling a large air force on, and in the vicinity of, Midway Island. At the operational and tactical level, the lack of coordination between the carrier-based and land-based aircraft, and, particularly, between the elements of the land-based air forces, significantly decreased the effectiveness of American air power. Absence of a common commander and staff to coordinate land-based air efforts exacerbated the lack of common training and doctrine and an abbreviated preparation timeline; all of these factors combined to diminish the effectiveness of land-based air forces at the Battle of Midway.

Fortunately, the nearby Carrier Strike Force made up for the deficiencies of the land-based air force and the Battle of Midway was decided at sea.⁴⁸ This was a luxury that another land-based, joint air force would not have just a few months later, at Henderson Field, on Guadalcanal.

⁴⁵ Sherrod, pgs 54-64. Winnefeld & Johnson, pgs 18-19

⁴⁶ Sherrod, pg 55. Winnefeld & Johnson, pg 19

⁴⁷ Sherrod, pgs 55-64, Hough, Frank, Verle Ludwig and Henry Shaw. *History of the U.S. Marine Corps Operations in World War II, Volume I, Pearl Harbor to Guadalcanal.* pg 225

⁴⁸ Hough, Ludwig & Shaw, pg 225

Cactus Air Force

At Guadalcanal, facing a desperate situation, airmen found a way to cooperate. Under the guidance of a strong leader and a single lead service, with diverse missions to accomplish, the Cactus Air Force combined Marine, Navy and AAF airmen and assets into an effective fighting organization.

To capitalize on recent victories at the battles of the Coral Sea and Midway, in May and June of 1942, swift action was required for the Allies to prevent Japanese entrenchment of the Solomon Islands. At the outset of the campaign in the Solomon Islands - the first major Allied offensive in the Pacific - time, information, and resources were all in short supply.⁴⁹ Following an unopposed amphibious landing, on 7 August 1942, General A.A. Vandegrift's 1st Marine Division established a beachhead in the Eastern Solomons and captured its first major objective, a partially constructed Japanese airfield at Guadalcanal, codenamed "Cactus."⁵⁰ Japanese opposition quickly mounted, and the small naval support force, including aircraft carriers, withdrew to the safety of the open seas, leaving the Marines with no air support and only part of their supplies.⁵¹ In anticipation of the land based air support that he had been promised, General Vandegrift put his 1st Engineer Battalion to work on the airfield, declaring it "ready for fighters and divebombers" on 12 August.⁵² Eight days later, Marine SBD-3 and F4F-4 aircraft of Colonel William Wallace's MAG-23 arrived, followed closely by five AAF P-400s on 22 August and a squadron of Navy dive-bombers on 24 August. These aircraft were the first of many to arrive at Guadalcanal. Many more would follow, either by assignment or when

⁴⁹ Millett, Allan Reed. *Semper Fidelis : The History of the United States Marine Corps*. pg 363. De Chant, John A. *Devilbirds; the Story of United States Marine Corps Aviation in World War II*. 1st ed. pg 65

⁵⁰ DeChant, pg 63 & 66

⁵¹ DeChant, pg 66

⁵² Sherrod, pgs 72-77

aircraft carriers were sunk or damaged.⁵³ “The Cactus Air Force” arose from a mix of AAF, Marine and Navy aviation, and would become the first truly joint air component in American military history.⁵⁴

Just as the Cactus Air Force mixed aircraft and pilots from different services, it also mixed command and control arrangements. As more senior officers arrived with the inbound aircraft, command of the growing collection of air units passed among the senior Marine aviators, in rapid succession, until Brigadier General Roy Geiger, Commanding General of 1st Marine Aircraft Wing, took command from Colonel William Wallace on 3 September, becoming the first Commander of the Cactus Air Force (COMAIRCACTUS).⁵⁵ Geiger reported to two masters. As Commanding General of 1st Marine Aircraft Wing he reported to Vice Admiral McCain, Commander of Task Force 63, Land-Based Air, South Pacific Force (COMAIRSOPAC); and as COMAIRCACTUS he reported to Major General Vandegrift, Commander of the 1st Marine Division and Commanding General of the Solomon Islands. This was one example of Admiral Nimitz’s arrangement of placing land-based air forces under the command of island garrison commanders, subordinate to COMAIRSOPAC. This decision frustrated many AAF officers who desired to maintain control of AAF air forces under a separate Air Force component commander, reporting directly to Admiral Robert Ghormley, Commander of the South Pacific Fleet and McCain’s reporting senior. In a resulting agreement, the AAF maintained training and administrative control of AAF forces, while Admiral McCain held operational control, delegating operational control of the Cactus Air Force to Geiger.⁵⁶ The Command arrangement between Geiger and Vandegrift reinforced the

⁵³ Isely, Jeter Allen, and Philip Axtell Cowl. *The U.S. Marines and Amphibious War; Its Theory, and Its Practice in the Pacific*. pg 135

⁵⁴ Sherrod, pgs 77-84. Isely, pg 134. Miller, Thomas G. Jr. *The Cactus Air Force*. pgs 30, 64-65

⁵⁵ DeChant pgs 67-68. Mersky, pg 43. The term COMAIRCACTUS is found in Winnefeld & Johnson, pgs 25 (Figure 4.2) and 29

⁵⁶ Winnefeld & Johnson, pgs 24 & 26

Marine concept that airpower should be assigned to ground forces; while the command arrangement between Geiger and McCain reinforced the AAF concept that airpower should be centralized under an air commander. It was a combination of both service's concepts that proved successful. In addition to the combination of command relationships with senior commanders, command and control within the Cactus Air Force also blurred lines between the services. Cactus Air Force operations covered a broad spectrum providing air defense, close air support (CAS), interdiction, support of amphibious operations, and attacks on Japanese surface forces and bases.⁵⁷ Under General Geiger's leadership, a true joint staff began to take form, and to manage the missions of the growing air force, with diverse capabilities, he divided the Cactus Air Force into two commands; a Fighter Command and a Strike Command.⁵⁸ Individual squadrons and services integrated for operational missions, and pilots often did not know the unit or service affiliation of their wingmen.⁵⁹ Operational tempo and the proximity and threat of Japanese air, land, and sea forces inspired the aviators of the Cactus Air Force to subordinate service doctrine and mission biases to operational demands, combining the unique capabilities of each service, and the various aircraft, into a coordinated and coherent combat air force. Solid leadership and a truly joint staff evolved from the original foundation provided by the 1st Marine Aircraft Wing, and subsequent command lineage included Marine and AAF Generals as well as Navy Admirals.⁶⁰

Air operations in the Solomon Islands reinforced airpower concepts for both AAF and Marine airmen. For the AAF, centralization of airpower

⁵⁷ Isely, pgs 136-137. DeChant, pg 68-69, Clifford, Kenneth J., and United States. Marine Corps. History and Museums Division. *Progress and Purpose: A Developmental History of the United States Marine Corps, 1900-1970*. pg 67

⁵⁸ Sherrod, pg 86. DeChant, pg 68

⁵⁹ Sherrod, pg 92. Isely, pg 146

⁶⁰ Sherrod, pg 131. Winnefeld & Johnson, pgs 31

under an airman fused the multiple capabilities of airpower and facilitated the concentration of force when and where needed. For Marines, loss of Navy carrier air support after the initial landing at Guadalcanal reinforced the previously mentioned teachings of E. H. Brainard, that the landing force would need its own aviation force. Also, in keeping with the principles outlined in the Small Wars Manual, and FMF organization, airpower was centralized under an airman who was subordinate to the ground force commander. Defense against Japanese air attacks reinforced the necessity for air superiority and Marines learned that air superiority must take precedence over close air support.⁶¹ The threat of Japanese ground attacks, a direct threat to Henderson Field, reinforced the need for close air support.⁶² Both services came away from Guadalcanal with lessons supporting their perspectives of control, which they would carry through the remainder of WWII, and into the Korean War.

Korean War

From an American perspective, the Korean War was a limited war. Since US forces were not fighting for national survival the principle of unity of effort disappeared in the milieu of service parochialism and doctrinal disagreement.⁶³

National Security Act of 1947

Signed into law by President Harry Truman on 26 July 1947, The National Security Act of 1947, as Kenneth Allard argues, was the most significant piece of defense legislation in US history, second only to the Constitution in authority on the structure by which the government

⁶¹ McNamara, Stephen J. *Air Power's Gordian Knot : Centralized Versus Organic Control*. pg 65

⁶² DeChant, pg 72

⁶³ Winnefeld & Johnson, pgs 39-40

seeks to ensure national security.⁶⁴ It established the Office of the Secretary of Defense, the Department of Defense, the Joint Chiefs of Staff, and the Central Intelligence Agency; delineated principal functions of the armed services; laid the framework for the three-component command structure – land, sea, and air - and emancipated the AAF from the Army, granting service independence to the United States Air Force.⁶⁵ The swearing in of the first Secretary of the Air Force, W. Stuart Symington, on 18 September 1947, established the United States Air Force as an independent service.⁶⁶ Although the basic law preserved Marine and land-based Navy aviation, an Executive Order officially charged the USAF to:

- Organize, train, and equip air forces for air operations including joint operations
- Gain and maintain general air superiority
- Establish local air superiority where and as required
- Develop a strategic air force and conduct strategic air reconnaissance operations
- Provide airlift and support for airborne operations;
- Furnish air support to land and naval forces including support of occupation forces
- Provide air transport for the armed forces except as provided by the Navy for its own use.⁶⁷

The greater demands of four armed services competing for defense funds led to numerous battles over service roles and missions, especially

⁶⁴ Allard, C. Kenneth, and National Defense University. Center for Advanced Command Concepts and Technology. *Command, Control, and the Common Defense*. Rev. ed.pg 113 & 122

⁶⁵ Allard, pg 113; Cardwell, Thomas A. *Command Structure for Theater Warfare : The Quest for Unity of Command*. pg 11

⁶⁶ Allard, pg 113; Futrell, Robert Frank, and Air University (U.S.). Aerospace Studies Institute. *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964*. pg 197

⁶⁷ Futrell, pg. 197 Also McClendon, R. Earl. *Unification of the Armed Forces: Administrative and Legislative Developments, 1945-1949*. 49. Also Executive Order No. 9877 *Functions of the Armed Service*. 26 July 1947.

those between the USAF and Navy and Marine aviation.⁶⁸ In an attempt to resolve the disagreements, Secretary of Defense James Forrestal met with the Joint Chiefs of Staff at Key West, Florida on 12 - 14 March 1948 to determine service roles and missions.⁶⁹ Under the resulting agreement, known as the Functions Paper, the Army expected to control all land forces in a land war, the Air Force expected to control all air forces in an air war, and the navy expected to control all naval forces in a naval war.⁷⁰ For its part, the Marine Corps expected to “maintain a Fleet Marine Force of combined arms, together with supporting air components...”⁷¹ Based on the experience and lessons gleaned from WWII operations in North Africa, and the resulting doctrine, the Air Force expected to control all air forces in theatre. Based on the experience and lessons learned in small wars of the 20s and 30s, and WWII Pacific operations, the Marines expected to control air assets organic to their combined arms force. On the eve of the Korean War, Air Force and Marine Corps airmen held different conceptual and doctrinal views of how to command and control airpower.

Korea

The Air Force attempted to apply its understanding of the need for centralization of air power to the Korean War—with little success at first. With the introduction of US forces into the Korean peninsula, in the summer of 1950, Far East Air Forces (FEAF) Commander, Lieutenant General George Stratemeyer made a bid for operational control over all aviation forces in theatre, both land- and carrier-based.⁷² Lack of joint doctrine for the control of air operations hindered Stratemeyer’s drive to gain operational control through a joint operations center (JOC). His

⁶⁸ McNamara, pg 77

⁶⁹ Momyer, William W., A. J. C. Lavalley, James C. Gaston, and United States. Air Force. *Airpower in Three Wars*. pg 57

⁷⁰ McNamara, pg 78

⁷¹ Estes, Kenneth W. *The Marine Officer’s Guide*. 6th ed. pg 51-52

⁷² Winnefeld & Johnson, pg 41

task for the JOC was coordination of all air efforts to support mission tasking; however, without the authority to coordinate outside of its own service, the JOC sourced most of the mission tasking from within the Air Force. Eventually the Commander-in-Chief Far East (CINCFE) - General of the Army Douglas MacArthur - mandated naval support, and the JOC became the central coordination agency for tactical air operations of all services.⁷³

Marine aviation was patched into this command structure in a variety of places. On 3 August 1950, Marine aviators joined the battle.⁷⁴ The majority of Marine aircraft operated from small aircraft carriers and supported Marine ground forces, with some land based Marine fighter aircraft placed under the command of Major General Earle Partridge, Commanding General of the Fifth Air Force.⁷⁵ During operations at Pusan, Marine aviators of the integrated Fleet Marine Force (FMF) operated under Marine Corps and Navy CAS doctrine and supported the Provisional 1st Marine Brigade as their highest priority, reporting to the JOC as a mere tactical-administrative formality.⁷⁶ Although the carrier-based Marine aircraft did not receive mission tasking from the JOC, when the brigade was not in action, the Marine aviators provided Corsair sorties to the JOC, for tasking.⁷⁷

In September of 1950, the 1st Marine Aircraft Wing (1st MAW) supported the 1st Marine Division (1st MARDIV), attached to the US Army X Corps and Joint Task Force 7, for Operation Chromite, the amphibious landing at Inchon.⁷⁸ Considered a naval operation, the air support for

⁷³ Winnefeld & Johnson, pgs 43-45

⁷⁴ Meid, Pat & James Yingling, *U.S. Marine Operations in Korea 1950-1953 Vol. 5*, pg 485

⁷⁵ Winnefeld & Johnson, pg 45

⁷⁶ Meid & Yingling, pg 487n13

⁷⁷ Futrell, Robert Frank, and Air Force History and Museums Program (U.S.). *The United States Air Force in Korea, 1950-1953*. 50th Anniversary of the Korean War Edition. pg 121

⁷⁸ McNamara, pg 79-80; Winnefeld & Johnson, pgs 46-47

Chromite operated independent of Fifth Air Force coordination.⁷⁹ 1st MAW provided support to 1st MARDIV and X Corps ground operations before returning to operational control of Fifth Air Force in early October, in conjunction with the movement to Won-San in preparation for the Chosin campaign.⁸⁰

During the Chosin campaign, Marines became frustrated with the centralized command structure of the Fifth Air Force, which delayed operational orders from four to thirty-six hours. The 1st MAW and Fifth Air Force commanders mitigated the friction through command and communication liaisons, and further alleviated the strain on 1 December with a verbal agreement that granted control of all aircraft, in the X Corps area, to the Commanding General of 1st MAW, Major General Field Harris, during the intense ground combat of the Chosin campaign. One of the greatest concentrations of aircraft during the entire war covered the Marines' movement south from Hagaru, incorporating the flexible, simplified, and battle-tested Marine method of CAS, operationally and tactically controlled by Marines.⁸¹

After the Chosin campaign, 1st MAW returned to operational control of Fifth Air Force once again, this time for the duration of the war. Under Fifth Air Force Control, the Marines flew interdiction, general support, and CAS missions for ground forces throughout the theatre.⁸²

The Korean War was the first time that the Marine forces functioned as components in broad unified command structures such as the Fifth Air Force and Eighth Army. As summed up by then Commanding General of 1st MAW, Major General Vernon Megee, on the last day of the war, "the Wing's association with the Eighth Army, the Fifth Air Force, and the Seventh U.S. Fleet in combined operations had

⁷⁹ Winnefeld & Johnson, pg 47

⁸⁰ Meid & Yingling, pg 487 & n13

⁸¹ Meid & Yingling, pg 487-488

⁸² Meid & Yingling, *U.S. Marine Operations in Korea 1950-1953* Vol. 5, pg 489

been a professionally broadening experience – teaching tolerance, teamwork, and flexibility of operations.”⁸³ Despite the difficulties and friction between the services at the outset of the war, the command structure did work; however, the doctrinal, tactical, and procedural differences were never fully resolved.⁸⁴ The component command structure used during the Korean War divided the Marine Air-Ground team - the 1st MARDIV under operational control of the Eighth Army, and the 1st MAW under operational control of the Fifth Air Force – it was a split the Marines would attempt to avoid in the future.⁸⁵

Vietnam War

Having studied the lessons of joint operations during the Korean War, the Commander-in-Chief of Pacific Command (CINCPAC), Admiral H. D. Felt, determined that US forces must improve coordination of aviation in future operations. Since no joint doctrine existed, in which all of the armed services agreed on the command and control of airpower, Admiral Felt convened a joint Tactical Air Support Board to study the matter. The twelve-man board convened in September 1963, to examine the full spectrum of tactical air support, deliberated for three months, and delivered a written report that contained numerous conclusions.⁸⁶ Among the conclusions were two that are of primary importance to USAF and Marine Corps integration. First, all Services possess aircraft and all Services require those aircraft to carry out their tactical missions. Second, a joint force commander should appoint one of his service component commanders to be the coordinating authority for tactical air

⁸³ Meid & Yingling, *U.S. Marine Operations in Korea 1950-1953 Vol. 5*, pg 492-493 & n18 ref MajGen V.E. Megee, General Order 153, dtd 27 July 1953; Major General Megee assumed command from Maj Gen Harris on (find the exact date)

⁸⁴ Meid & Yingling, *U.S. Marine Operations in Korea 1950-1953 Vol. 5*, pg 492

⁸⁵ McCutcheon, Lieutenant General Keith B. “Marine Aviation in Vietnam, 1962-1970.” *Naval Review*, 1971. pg 272-273

⁸⁶ McCutcheon, pg 273

operations within the area of joint operations of the joint command. In this second conclusion, the *Dictionary of United States Military Terms for Joint Usage* defines *coordinating authority* as a commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more services, or two or more forces of the same Service. He has the authority to require consultation between the agencies involved, but does not have the authority to compel agreement. In the event he is unable to obtain essential agreement, he shall refer the matter to the appointing authority.⁸⁷ Although the board's complete report was not fully implemented or developed into doctrine or procedures, Admiral Felt – and his successor, Admiral U. S. Grant Sharp – implemented some of the recommendations in the command and management of tactical air assets in Pacific Command.⁸⁸

As the 9th Marine Expeditionary Brigade (MEB) began the buildup of Marine forces in Vietnam with an amphibious landing at Da Nang on 8 March 1965, the MEB commander, Brigadier General Frederick Karch, took operational control of all Marine aviation units already ashore as part of the “Shufly” missions, also known as Marine Unit Vietnam (MUV).⁸⁹ Two helicopter squadrons and a Light Anti-Aircraft Missile (LAAM) battalion formed Marine Aircraft Group 16 and were later reinforced by VMFA-531, a squadron of Marine F-4 Phantoms from

⁸⁷ Dictionary of United States Military Terms for Joint Usage. Version referenced by McCutcheon (pg 273 n5) unavailable. Current JP 1-02 Dictionary of Military and Associated Terminology pg 106 defines coordinating authority - A commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more Military Departments, two or more joint force components, or two or more forces of the same Service. The commander or individual has the authority to require consultation between the agencies involved, but does not have the authority to compel agreement. In the event that essential agreement cannot be obtained, the matter shall be referred to the appointing authority. Coordinating authority is a consultation relationship, not an authority through which command may be exercised. Coordinating authority is more applicable to planning and similar activities than to operations.

⁸⁸ McCutcheon, pg 273

⁸⁹ Beginning on 15 April 1962, the “Shufly” mission provided helicopter support to the Vietnamese Army. Shufly was renamed Marine Unit Vietnam (MUV) in December of 1964. McCutcheon, pgs 262 – 265, Mersky, pg 212

Atsugi, Japan. As the MEB air capability increased, the Commander of US Military Assistance Command Vietnam (COMUSMACV), General William Westmoreland, attempted to assign operational control of the MEB tactical aircraft to his Air Force Component Commander, the Commander of the 2nd Air Division, Lieutenant General Joseph Moore.⁹⁰ CINCPAC denied this attempt, reiterating previous guidance that the MEB Commander, acting as the Naval Component Commander, would control Marine aviation.⁹¹ Reinforced with an influx of Marine ground and air forces, on 6 May 1965, the Commanding General of 3rd MARDIV, Major General William Collins, established III Marine Amphibious Force (III MAF), and the 9th MEB was deactivated. With both 3rd MARDIV and 1st MAW, the III MAF commander now possessed operational control of significant ground and air forces in I Corps, a point not lost on COMUSMACV and the Commander of 2nd Air Division.⁹²

Drawing from the recommendations of the 1963 CINCPAC Tactical Air Support Board, COMUSMACV issued a 1965 directive designating the Commander of the 2nd Air Division as the coordinating authority for all US, Free World, and Vietnamese air forces operating in the MACV area of operations. A 1966 revision contained only slight modifications, one of which reflected the deactivation of 2nd Air Division and the establishment of Seventh Air Force on 1 April 1966; a change in name only.⁹³ By this directive, the III MAF commander retained operational control over Marine aviation, except in the rare case when COMUSMACV may direct otherwise in case of emergency. The directive also required III MAF to

⁹⁰ McCutcheon, pgs 265 & 273; Winnefeld & Johnson, pg 65

⁹¹ McCutcheon, pg 273 & n6

⁹² Originally established as III Marine Expeditionary Force, the word amphibious soon replaced expeditionary, due to references to the ill-fated French expeditionary corps. McCutcheon, pg 265

⁹³ McCutcheon, pg 274; Winnefeld & Johnson, pg 68

report sorties in excess of MAF requirements, to the Commander of Seventh Air Force, for tasking in support of other units.⁹⁴

In addition to this directive, a Memorandum of Agreement between the Seventh Air Force Commander and the 1st MAW Commanding General (also Deputy Commander of III MAF for Air), Brigadier General Keith McCutcheon, delineated the support that III MAF and 1st MAW would provide to Seventh Air Force for air defense operations, and the command relationship of the assets provided. General Moore recognized the dual role of Marine F-4 aircraft and the necessity to use them in ground support as well as air defense missions. General McCutcheon recognized the necessity of a single air defense commander, and the need to provide support to the air defense mission. In the agreement signed in August 1965, III MAF retained operational control of Marine air assets, though 1st MAW would provide aircraft and anti-aircraft missile systems for air defense missions, in which Seventh Air Force would exercise scramble authority over the aircraft and launch authority over the missiles.⁹⁵

The command, control, and communication relationship set forth in these two documents worked well until 1968, when a directive from COMUSMACV and the new Commander of the Seventh Air Force, General William Momyer, introduced the Single Management concept. The directive was largely the result of difficulties associated with two separate command and control systems, USAF and Marine, controlling the massive air support build up for the defense of Khe Sanh. The directive required the Commander of III MAF to make all strike and reconnaissance aircraft and all tactical control systems available to the COMUSMACV Air Commander (Seventh Air Force Commander) for

⁹⁴ McCutcheon, pg 274

⁹⁵ McCutcheon, pg 274

mission direction; definition of the term “mission direction” was not available in the document.⁹⁶

Marine objections to the directive centered on the delayed response time of the new system and the belief that it was not necessary. The COMUSMACV air staff adjusted the proposed system to alleviate Marine concerns over delays, asserted the necessity for single management, and defined mission direction. Mission direction became the authority delegated to one commander (i.e. Deputy COMUSMACV for Air) to assign specific air tasks to another commander (i.e. CG III MAF) on a periodic basis as implementation of a basic mission previously assigned by a superior commander (COMUSMACV). This was enough to win approval from CINCPAC, and the directive became effective 10 March 1968.⁹⁷

The revised directive required the 1st MAW Commander to provide Seventh Air Force Commander with daily sortie availability, based on 1.0 sorties per jet aircraft, per day. These sorties were tasked according to the COMUSMACV/Seventh Air Force mission requirements, though Seventh Air Force routinely tasked a set number of the Marine aircraft back to 1st MAW for support of III MAF missions. In addition to the Marine missions tasked back to 1st MAW, any sorties in excess of the daily 1.0 were made exclusively available to III MAF for tasking, and the Marine squadrons regularly produced greater than 1.0 sorties per aircraft, per day; often reaching a sortie rate 1.3 to 1.5 when required.⁹⁸ As General McCutcheon said of his 1st MAW, “The 1st Wing is a consumer oriented tactical air support command. If the customer had the demand, the wing would supply the sorties.”⁹⁹

The single manager system lasted for the duration of the conflict, though it would not have been possible without gentlemen’s agreements

⁹⁶ McCutcheon, pg 274

⁹⁷ McCutcheon, pg 275; Mersky, pg 238

⁹⁸ McCutcheon, pgs 275 & 293

⁹⁹ McCutcheon, pg 293

between the on-scene commanders and evolution of the air command and control system as a whole.¹⁰⁰ As in the Korean War, the system worked and air operations in the COMUSMACV area markedly improved. Through the mission direction relationship, the III MAF Commander retained operational control of all his forces, the Seventh Air Force Commander had access to all the sorties required to support COMUSMACV as a whole, the MAF received responsive air support from its organic air assets and, unlike the Korean War, the Marine Air-Ground team remained intact.¹⁰¹

Conclusion

Prior to WWII, Army Airmen and Marine Aviators developed differing concepts of airpower. Brief combat experience in WWI inculcated Army flyers with a belief in centralization, while Marine flyers ended the war with a penchant toward supporting ground forces. The inter-war years reinforced the ideas of both aviation services. Based largely on the teachings of General Billy Mitchell, airpower theory, and WWI experiences, the academic rigor of Army Airmen produced concepts of strategic bombing, centralized control, and the independent decisiveness of airpower -- concepts that conflicted with Army General Staff views of airpower, who would rather see air forces subordinated to ground forces. During the same period, Marines tested the military capacity of aviation in combat. In small wars during the 1920s and 1930s Marine Aviators supported independent, expeditionary, Marine ground forces in isolated locations around the world, reinforcing Marine views that the purpose of military aviation is support of ground forces.

The geographic proximity of operations in the WWII African and European theatres, the massive land forces, and substantial air threat, reinforced AAF concepts of centralized control with backing from like-

¹⁰⁰ McCutcheon, pg 275

¹⁰¹ McCutcheon, pg 275-276

mindful Allied airmen. AAF experience in North Africa influenced the acceptance of airpower as coequal to ground power, and codification of airpower centralization as doctrine in FM 100-20.

The distributed nature of WWII Pacific theatre operations and the range capabilities of tactical aircraft available to WWII air forces precluded the centralized control of all air operations in theatre, forcing reliance on decentralized operations and joint command structures. On Guadalcanal, loss of Navy carrier air support after the initial landing reinforced the idea that the landing force would need its own aviation component, controlled by an airman, and subordinate to the ground force commander. Operational necessity, the impending Japanese threat, and the absence of other air forces required the aviators of the Cactus Air Force to establish a joint aviation command and make it work, absent the guidance of joint doctrine.

During the wars in Korea and Vietnam, US forces tested newly developed guiding principles for unified action, though explicit joint doctrine was still absent from the joint command structure. The Korean and Vietnam theatres of operation were smaller and more concentrated than the WWII Pacific theatre, and aircraft capabilities provided greater range, speed, and flexibility. However, inter-service rivalry and doctrinal disagreement produced friction in the command and control of US air forces, locking Airmen and Marines in a struggle against one another as well as the enemy. Over the course of both limited wars, the command and control relationship between the Air Force and Marine Corps developed through gentlemen's agreements among the senior on-scene commanders, based on mutual understanding of each other's roles, missions, procedure, and concerns.

Formed in the crucible of experience and thought that saw air power as the way to avoid bloody ground warfare, the Air Force was a service built around the use of air power as an operational and strategic weapon. Through the lens of this purpose, its people saw the ability to

strike the enemy independent of the ground campaign as the major issue to be solved by command and control—an issue best solved by putting all air under an airman. Marine aviators, on the other hand, were Marines first. They saw air power as a vital part of the combined arms team, to use in direct support of their Marine brethren—a view cemented by their experience in war. Through the lens of this purpose, its people saw the ability to respond rapidly to ground commanders as the major issue to be solved by command and control—an issue best solved by putting the air commander under the command of the MAGTF commander and striving for decentralization.



Chapter 4

Joint Warfare

As long as the doctrinal differences among the services in peacetime were largely theoretical, they could be sidestepped.

Michael Gordon and General Bernard Trainor

Much like the Cactus Air Force in the Solomon Islands, future air forces may not have the luxury of time to develop convoluted Korea and Vietnam styled command structures based on gentlemen's agreements. Joint force commanders will need a scalable, tailored, workable command and control arrangement ready for all operations. With different concepts of airpower and command and control, such arrangements would require innovation of both services' doctrine and concepts.

In *Sources of Military Doctrine*, Barry Posen hypothesizes that organization theory provides two strong causes for innovation in military organizations: failure on the battlefield, and civilian intervention. He contends that these two sources of innovation often link military failures with civilian anger and fear, leading civilians to press the military for innovation.¹ He also hypothesizes that military organizations will resist innovation due to institutionalization and desire to mitigate operational uncertainty.² As Airmen and Marine Aviators did not face defeat on the battlefields of Korea or Vietnam, this chapter will use the hypotheses of civilian intervention and resistance to innovation as a framework to review command and control innovation from the end of the Vietnam War through the 1991 Gulf War.

¹ Posen, Barry. *The Sources of Military Doctrine : France, Britain, and Germany between the World Wars*. pg 57

² Posen, pg 54-55 & 57

Goldwater-Nichols Act

The Goldwater-Nichols Department of Defense Reorganization Act of 1986 established the requirements for innovation to doctrine and command and control arrangements. Military doctrine is the subcomponent of grand strategy that explains what means to employ, and delineates how to employ those means, and it requires judgment in application. In *Sources of Military Doctrine*, Barry Posen contends,

In the absence of civilian intervention, and the exercise of legitimate authority that only civilians possess, militaries will arrange a “negotiated environment.” ...Each service will prepare for its own war. Forces will not cooperate effectively. Neither will they be well balanced. A tendency will emerge for each service to set the requirements as if it were fighting the war alone. This can easily result in misallocation of the scarce security resources of the state.

Left to themselves, a group of services cannot make a military doctrine that will be well integrated with the political aspects of the state’s grand strategy. They can simply assemble a batch of service doctrines.³

In much the same way that Posen proposes, American military organizations spent decades developing service doctrine intended to win wars through proper application of their particular capabilities. Difficulty in establishing command and control relationships between Air Force and Marine Corps airpower during the Korean and Vietnam Wars are only two such instances of service doctrine conflict. Other well known examples include the Route Pack structure used to deconflict Air Force and Navy air operations in Vietnam; OPERATION EAGLE CLAW, the failed 1979 attempt to rescue American hostages held in Iran; and OPERATION URGENT FURY, the successful 1983 rescue of American citizens from Grenada that exposed doctrinal disparity and lack of inter-

³ Posen, pg 54

service communication.⁴ These last two examples served as catalysts for Senators Barry Goldwater and Sam Nunn to propose the Goldwater-Nichols Department of Defense Reorganization Act (GNA) on 14 November 1985.⁵ Passed into public law 99-433 on 1 October 1986, the preamble to the legislation presents a striking analogy to Posen's proposal, listed above.

An Act

To reorganize the Department of Defense and strengthen civilian authority in the Department of Defense, to improve the military advice provided to the President, the National Security Council, and the Secretary of Defense, to place clear responsibility on the commanders of the unified and specified combatant commands for the accomplishment of missions assigned to those commands and ensure that the authority of those commanders is fully commensurate with that responsibility, to increase attention to the formulation of strategy and to contingency planning, to provide for more efficient use of defense resources, to improve joint officer management policies, otherwise to enhance the effectiveness of military operations and improve the management and administration of the Department of Defense, and for other purposes.⁶

Kenneth Allard asserts that the Goldwater-Nichols Act was the most significant defense legislation since the National Security Act of 1947, presenting a substantial shift of power in favor of the joint institutions of the defense establishment.⁷ The GNA designates the Chairman of the Joint Chiefs (CJCS) as the principal military advisor to

⁴ Vandenbussche, Lieutenant Colonel Jeffrey L. "Centering the Ball: Command and Control in Joint Warfare." pgs 11-13

⁵ Allard, C. Kenneth, and National Defense University. Center for Advanced Command Concepts and Technology. *Command, Control, and the Common Defense*. Rev. ed. pgs 1-3

⁶ U.S. House. *Goldwater-Nichols Department of Defense Reorganization Act of 1986*. 99th Congress. 1st sess, 1986. H.R. 3622. Hereafter GNA.

⁷ Allard, pg 3

the President and codifies the Vice Chairman position.⁸ It also simplifies the command structure from the President down to the unified commanders and delineates the Combatant Commander's powers and duties as:⁹

COMMAND AUTHORITY OF COMBATANT COMMANDERS.

(1) Unless otherwise directed by the President or the Secretary of Defense, the authority, direction, and control of the commander of a combatant command with respect to the commands and forces assigned to that command include the command functions of-

(A) giving authoritative direction to subordinate commands and forces necessary to carry out missions assigned to the command, including authoritative direction over all aspects of military operations, joint training, and logistics;

(B) prescribing the chain of command to the commands and forces within the command;

(C) organizing commands and forces within that command as he considers necessary to carry out missions assigned to the command;

(D) employing forces within that command as he considers necessary to carry out missions assigned to the command;

(E) assigning command functions to subordinate commanders;

(F) coordinating and approving those aspects of administration and support (including control of resources and equipment, internal organization, and training) and discipline necessary to carry out missions assigned to the command; and

(G) exercising the authority with respect to selecting subordinate commanders, selecting combatant command

⁸ GNA, 100 STAT 1005 Section 151 (b) FUNCTIONS MILITARY ADVISERS.-(1) The Chairman of the Joint Chiefs of Staff is the principal military adviser to the President, the National Security Council, and the Secretary of Defense. STAT 1008 Section 154 (a)(1) There is a Vice Chairman of the Joint Chiefs of Staff, appointed by the President, by and with the advice and consent of the Senate, from the officers of the regular components of the armed forces.

⁹ GNA, 100 STAT 1013 Section 162 (b) CHAIN OF COMMAND.-unless otherwise directed by the President, the chain of command to a unified or specified combatant command runs - (1) from the President to the Secretary of Defense; and (2) from the Secretary of Defense to the commander of the combatant command.

staff, suspending subordinates, and convening courts-martial.¹⁰

As such, the combatant commander has the power and authority to plan, organize, and direct all of the forces within his command in the execution of assigned missions. He also has the authority to designate subordinate commanders. As GNA also requires service secretaries to assign forces to the combatant commander for the execution of assigned missions, the authority of the component commander is subordinate to that of the combatant commander.¹¹ Combatant commanders can organize assigned forces along service lines – Army forces, Navy forces, Air Force forces, and Marine forces – or along functional lines – Land forces, Maritime forces, Air forces, and Special Operations forces. Command arrangements are at the discretion of the combatant commander, or his delegated joint force commander, and may follow service or functional lines, or any combination thereof.

As the Barry Posen quote above suggests, military services, left to themselves, will not form a cohesive joint doctrine, they will only form a collection of their own service doctrines. To prevent service doctrine conflict in joint warfare, GNA required the CJCS to develop doctrine for the joint employment of the armed forces.¹² “Joint doctrine promotes a common perspective from which to plan, train, and conduct military operations. It represents what is taught, believed, and advocated as

¹⁰ GNA, STAT 100 1013-1014 Section 164 (c)

¹¹ GNA, STAT 100 1012 Section 162 (a) Except as provided in paragraph 2 the Secretaries of the military departments shall assign all forces under their jurisdiction to unified and specified combatant commands to perform missions assigned to those commands. Such assignments shall be made as directed by the Secretary of Defense, including direction as to the command to which forces are to be assigned. The Secretary of Defense shall ensure that such assignments are consistent with the force structure prescribed by the President for each combatant command.

¹² GNA, STAT 100 1008 Section 153(a)(5) DOCTRINE, TRAINING, AND EDUCATION. (A) Developing doctrine for the joint employment of the armed forces. (B) Formulating policies for the joint training of the armed forces. (C) Formulating policies for ‘coordinating the military education and training of members of the armed forces

what is right (i.e., what works best).”¹³ The joint doctrine mandated by GNA provides guidance for actions in support of national objectives, though, as the doctrine itself states, “It is authoritative but requires judgment in application.”¹⁴

The Air Force took the GNA as the impetus to solidify the concept of a single air commander. Following passage of the GNA, the Air Force changed its doctrine, aligning service and functional components, to provide the combatant commander, or designated JFC, with a single commander who is both a service component commander and a functional component commander. As stated in Air Force Basic Doctrine, “The Air Force prefers—and in fact, plans and trains—to employ forces through a COMAFFOR who is also dual-hatted as a JFACC.”¹⁵ This was a simple adjustment for the Air Force, as it is a service built around a single function – the airpower function.

The other services, each with multiple air and surface functional components, did not make such alterations to their service doctrine, and the idea of ceding control of their organic airpower did not sit well. As Barry Posen suggests, “Those with formal authority over organizations are a cause of uncertainty. Organizations struggle for *independence* from legitimate authority, fearful that capricious, uninformed exercise of that authority will upset the delicate balance of internal structure and routine.”¹⁶ (emphasis is original) The 21 February 1986 release of JCS Publication 26, *Joint Doctrine for Theatre Counterair Operations*, which delineated the JFACC concept, incited inter-service struggles for control of aviation forces.

The Marine Corps struggled for independence of its aviation assets. Leaning on the 4 March 1986 Omnibus Agreement for Command and

¹³ Joint Publication (JP) 1. *Doctrine for the Armed Forces of the United States*, pg ix

¹⁴ Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms*. pg 143

¹⁵ Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*. pgs 64-65

¹⁶ Posen, pg 45

Control of Marine Aviation Ashore, Marines defended retention of their organic air assets. The Omnibus agreement stated, "The Marine Air-Ground Task Force (MAGTF) Commander will retain operational control of his organic air assets... The MAGTF Commander will make sorties available to the Joint Force Commander, for tasking through his Air Component Commander, for air defense, long-range interdiction and long-range reconnaissance. Sorties in excess of MAGTF direct support requirements will be provided to the Joint Force Commander...,¹⁷ The struggle over the JFACC's power and authority continued for four years. Airmen viewed the JFACC as the JFC's chief air deputy and chief air planner for the joint force, and the Marines viewed him as something similar to a traffic cop, coordinating the overlapping air efforts.¹⁸ The difference was not resolved before the Iraqi invasion of Kuwait on 2 August 1990, and it continued into the quibbling over control of Marine Aviation during Operations Desert Shield and Desert Storm.¹⁹

Desert Storm

In addition to debates over the power and authority of the JFACC, Airmen and Marine Aviators entered the Gulf War with decades of historical experience to reinforce institutional beliefs about the purpose of military aviation, and the proper application of its functions. Airmen entered the war believing in the independent decisiveness of strategic and operational applications of airpower, and the need to centralize all airpower under a single airman, the JFACC.²⁰ Marines entered the war

¹⁷ Message. Chairman, Joint Chiefs of Staff; subject: Joint Doctrine for Theatre Counterair Operations. 4 March 1986. p 2.

¹⁸ Keaney, Thomas A., Eliot A. Cohen, Gulf War Air Power Survey (Organization : U.S.), and United States. Dept. of the Air Force. *Gulf War Air Power Survey*. Vol I, Part 2, pgs 361-366. Hereafter GWAPS

¹⁹ GWAPS, VI Pt 2, pg 366

²⁰ Gordon, Michael R., and Bernard E. Trainor. *The Generals' War : The inside Story of the Conflict in the Gulf*. 1st ed. pg 310. Also Putney, Diane T. *Airpower Advantage : Planning the Gulf War Air Campaign, 1989-1991*, USAF in the Persian Gulf War. pgs 42-45, 175

believing that although their aviation assets must integrate into the joint fight, their organic aviation force must remain closely integrated with their ground force, and the ACE should fill MAGTF direct support requirements, under the MAGTF Commander.²¹

The disparity between Airmen and Marine views of airpower lay somewhat dormant during the six-month buildup of US forces in the Central Command (CENTCOM) Area of Responsibility (AOR) between the Iraqi invasion of Kuwait on 2 August 1990 and the commencement of offensive air operations on 17 January 1991.²² The top commanders from both services, Lieutenant General Charles Horner, JFACC and 9th Air Force Commander, and Lieutenant General Walter Boomer, I Marine Expeditionary Force (I MEF) and Marine Forces CENTCOM Commander, developed a professional relationship based on mutual trust. General Boomer recounted the relationship in a 1992 interview with *Armed Forces Journal International*:

The first time I met Chuck Horner, he said, "I don't want to take all your airplanes. All I want to do is work together and win this war." And that's what we did. I provided him everything he needed from us to conduct the strategic air campaign. We agreed that when the focus shifted to the Kuwait battlefield, the Marine sorties that were being used up north in and around Baghdad would come back and we would apply them.

Now did our staffs quibble from time to time? Yes. But because of the trust that Chuck and I had in each other, we kept that down to a minimum.²³

This description of the relationship between Generals Horner and Boomer suggest a common understanding of each service's roles and missions. At the lower levels, however, the relationship was not without

²¹ Barrow, General Robert. "America's Number One Marine, Defense Week Interview." *Defense Week*, 14 September 1981. Also Gordon & Trainor, pg 311

²² Keaney, Thomas A., and Eliot A. Cohen. *Revolution in Warfare? : Air Power in the Persian Gulf*. pgs 228 & 232.

²³ Goodman, Glenn W. Jr. and John G Roos. "An Exclusive AFJI Interview with: Lt.Gen. Walter E. Boomer, USMC." *Armed Forces Journal International*, August 1992. pg 41

tension. The Commanding General of 3rd Marine Aircraft Wing (3rd MAW), Major General Royal Moore, was initially reluctant to give up aircraft for the strategic air campaign, preferring to retain them for support of I MEF ground combat operations.²⁴ After multiple meetings with Air Campaign Planners Brigadier General Buster Glosson and Lieutenant Colonel David Deptula, General Moore agreed to apportion half of his Marine F/A-18s, all A-6Es and EA-6Bs, and two KC-130 aircraft to Phase I of the air campaign.²⁵ This left the Marines with the remaining half of their F/A-18s, all their AV-8Bs, and their helicopters. Based on the number of 3rd MAW aircraft in theatre on the first day of the air war, 17 January 1991, Moore provided the JFACC with 71 fixed-wing aircraft, including 37 F/A-18s, 20 A-6E, 12 EA-6B, and 2 KC-130 aircraft in addition to the other 1,682 coalition aircraft in theatre.²⁶ For its mission, 3rd MAW retained 37 F/A-18s, 60 AV-8Bs, 8 OV-10A/Ds, 34 AH-1J/Ws, and 30 UH-1Ns to provide direct support to the MEF's two infantry divisions, augmented by sorties requested from the JFACC.²⁷ The arrangement frustrated both sides – General Moore did not relish handing over sorties, and Deptula believed that holding the AV-8s was a waste of assets that could be used in the campaign.²⁸ The CENTCOM

²⁴ Putney, pg 174. Also, Boomer, Lieutenant General (Ret) Walter E. Interview transcript. 27 July 2006. "Now, in terms of the air planning, I want to talk about that in relationship to the Air Force. I would take you back to when I said Chuck Horner and I established a very good relationship. It made no sense to me to not allow the Marine Air Wing to be used by the Joint Commander to help prosecute this campaign, and that's what our doctrine says will happen."

²⁵ Command Chronology, 3rd Marine Aircraft Wing, 3-30 September 1990. pgs 6-7. Also Putney, pgs 174-175.

²⁶ Command Chronology, 3rd Marine Aircraft Wing, 1 January – 28 February 1991. pg 3. Also Keany & Cohen, pg 232.

²⁷ Command Chronology, 3rd Marine Aircraft Wing, 1 January – 28 February 1991. pg 3.

²⁸ Putney, pg 175

Commander in Chief (CINCCENT) – and JFC - General Norman Schwarzkopf, approved the apportionment.²⁹

From the outset of planning, General Schwarzkopf allowed his subordinate commanders the freedom to plan the war according to their service doctrines and concepts, supporting both the Air Force and the Marine concepts of airpower.³⁰ In doing so, he set the stage for continued conflict. In support of the Air Force, thoroughly impressed by the Instant Thunder brief he received from Colonel John Warden - director of the Air Force 'Checkmate' strategy office - General Schwarzkopf accepted the idea of an air operation and directed General Horner to undertake a comprehensive and precise air campaign against Iraqi ground forces.³¹ Schwarzkopf allowed Horner and his planning staff a fair amount of freedom in planning the air campaign, including assumption of joint target coordinating duties.³² In support of the Marines, in his 10 August 1990 operations order, Schwarzkopf affirmed the MAGTF Commander's authority to control organic air assets, as outlined in the Omnibus agreement, while reinforcing JFC authority to exercise OPCON to ensure unity of effort.³³ Supporting both concepts temporarily buried the conflict, though it surfaced again once offensive operations commenced and differences between air and ground concepts clashed, embroiling commanders in deeper conflict.³⁴

Operation Desert Storm forced General Schwarzkopf to choose between an independent airpower strategy and an all-encompassing air-ground strategy, including an implied decision between centralization

²⁹ Proceedings. "Marine Air: There When Needed [Interview] With Lieutenant General Royal N. Moore Jr., USMC." Proceedings 117, no 11.(November 1991) 63-70. pg 64. Also Putney, pg 175

³⁰ Mandeles, Mark David, Thomas Hone, and Sanford S. Terry. *Managing "Command and Control" In the Persian Gulf War*. pg 133. Also Gordon & Trainor, pg 310

³¹ Gordon & Trainor, pg 82

³² Keany & Cohen, pgs 129-130

³³ Mandeles, pg 128

³⁴ Gordon & Trainor, pg 310. Also Mandeles, pg 133

and decentralization of airpower.³⁵ Desert Storm kicked off with Phase I, the Strategic Air Campaign, on 17 January 1991.³⁶ Within hours, if not simultaneously, Phase II, Air Superiority, and Phase III, Battlefield Preparation, also commenced.³⁷ Overlap of the first three phases of Operation Desert Storm reignited the debates between air and ground commanders, especially those between Airmen and Marines. The Strategic Air Campaign now conflicted with Battlefield Preparation and ground commanders began demanding air support for their battlespace. As Michael Gordon and General Bernard Trainor state in *The General's War*, "As long as the doctrinal differences among the services in peacetime were largely theoretical, they could be sidestepped. But now, with a date set for the ground war, that was getting more and more difficult to do. Even with all the airplanes CENTCOM had in the Gulf, there were only so many missions that could be launched, and the air and ground commanders had very different ideas of what airplanes should be used for."³⁸ The time for doctrinal freedom had passed, Schwarzkopf's enthusiasm for Instant Thunder waned, and the pursuit of doctrinal innovation gave way to demands for operational certainty on the battlefield.

General Schwarzkopf divided authority over air operations between the JFACC and the ground commanders.³⁹ Airmen remained determined that they could achieve decisive victory through airpower, though such beliefs conflicted with Army and Marine demands for focusing airpower on the destruction of enemy fielded forces.⁴⁰ With the start of combat operations and the increased demands from ground commanders, General Schwarzkopf directed General Horner to lend more credence to

³⁵ Mandeles, pg 133

³⁶ Keany & Cohen, pg 232

³⁷ Proceedings, pg 64. Also Winnefeld & Johnson, pg 103

³⁸ Gordon & Trainor, pg 312

³⁹ Mandeles, pg 133

⁴⁰ Gordon & Trainor, pgs 309-310.

the views of the ground commanders. He also informed General Boomer that, “We must continue to utilize the JFACC concept to integrate all available air assets while giving you maximum flexibility to shape the battlefield.”⁴¹ These two statements asserted both the authority of the JFACC, and the authority of the ground commanders.

Marine commanders seized the opportunity to regain control of their aviation assets. From the start of offensive operations, General Moore did his best to husband Marine Aviation assets through the first three phases, in order to peak in Phase IV, the Ground Campaign.⁴² In essence, he resisted attempts to change Marine doctrine, by reducing operational uncertainty in aircraft availability. General Moore “gamed the ATO [Air Tasking Order] process,” scheduling an enormous amount of sorties in the 72 hour JFACC ATO cycle, permitting a measure of flexibility that he could use to adapt Marine airpower to the dynamic situation on the battlefield.⁴³ In addition to manipulating the ATO, General Moore gradually reduced the number of sorties provided to the JFACC in order to increase the assets available for direct support of the MEF. With Schwarzkopf’s acknowledgment, within 36 hours of the start of the air campaign, Moore began weaning his aircraft out of the JFACC system, continuing until he had completely withdrawn Marine assets 15 days before the commencement of ground operations.⁴⁴

Eventually, General Horner recognized the different role of Marine Aviation, and used it to his advantage. With increased support demands from the ground commanders, Horner appreciated the fact that Marines came equipped with their own CAS assets, and required less support

⁴¹ Mandeles, pg 132

⁴² 3rd MAW Command Chronology, 1 January – 28 February 1991, pg 4

⁴³ Moore, Proceedings interview, pg 63

⁴⁴ Command Chronology, 3rd Marine Aircraft Wing, 1 January – 28 February 1991. pg 46. Also Proceedings, pg 64. In the interview, General Moore points out that, although he withdrew ACE support to the JFACC, he and Horner would trade aircraft sorties depending on mission requirements. Also Gordon & Trainor, pg 502n15

than their Army counterparts require.⁴⁵ The situation that previously generated uncertainty in the airpower system ultimately transformed into greater certainty for both services. The caveat for both services is that the overwhelming strength of coalition military force, air forces in particular, allowed enough flexibility that tough decisions were not required. General Horner spelled this out explicitly with the following statement, “We never had to make a decision as to whether the French brigade died or the Marine brigade died or the Saudi brigade died. If we had had to make those kinds of decisions, it would have been a lot more difficult.”⁴⁶ Without the impetus to make those kinds of decisions, the debate between Airmen and Marines was never fully resolved, which continues – more than two decades later.

Conclusion

The Goldwater-Nichols Act represented an attempt to force military innovation through civilian intervention. The resulting command structure and joint doctrine faced their first combat test in Operation Desert Storm. Unfortunately, rather than integrate the services into an efficient joint force, the enormity of the American force structure and the lack of a grave threat allowed the services to resist innovation through perpetuation of service institutionalism and pursuit of operational rationality. The Air Force entered the conflict with a penchant to pursue independent, decisive victory through centralized control of airpower. Marines entered the conflict championing combined arms synergy, through decentralized control of airpower. Both services emerged from the conflict with their views untarnished.

With the vast military force at his disposal, General Schwarzkopf did not choose to prioritize airpower or ground power until the situation forced him to do so. However, the situation projects a valid lesson. With

⁴⁵ GWAPS, VI, Pt2, pg 59

⁴⁶ GWAPS, VI, Pt2, pg 57

smaller forces and fewer assets, commanders will have to prioritize one component over another, though the choice is a scalable and reversible one. Different components will require varying amounts of operational certainty at various times throughout an operation, and will therefore require different apportionment of effort. In the case of Desert Storm, the Strategic Attack and Air Superiority phases required greater operational certainty for air forces, and the use of Marine Aviation to support the JFACC for those phases was appropriate. Conversely, Battlespace Shaping and Ground Combat require greater operational certainty for ground forces, and the use of Marine Aviation to support ground forces was appropriate. The difficulty arises when the phases overlap, as in Desert Storm, and commanders will have to apply judgment in determining where to focus effort.

Operation Desert Storm reinforced the idea that doctrine is merely guidance, and requires judgment in application. Not every situation will be subject to a doctrinally scripted solution. In an increasingly joint military, professionals will be required to work together in dynamic situations. In order to understand the costs and benefits of changing priorities in a joint environment, the professional must understand his counterpart with reference to three sources: purpose, people, and environment.

Chapter 5

Conclusions and Implications

Although modern works on military matters are as fond of comparing command with management as their predecessors were of comparing war with science, management and command are by no means identical.

Martin Van Creveld

Conclusions

Airmen and Marines have contested each other's views on airpower command and control for nearly as long as aircraft have been used on the battlefield. Although it is unlikely that either service will be able to change the other's views, the idea that they will have to set aside their differences to pursue seamless integration in joint warfare is inescapable. To assist warfighters from both sides, this study proposes the following conclusions.

Chapter 1 of this study analyzed the command and control doctrine for each service, to sift out the concepts that form their tenets of command and control. In so doing, analysis has shown that the Air Force and Marine Corps incorporate similar terminology into their delineation of command and control, but utilize those concepts to define different ideas. Marines describe centralized command with concepts that Airmen use to describe centralized control, and Marines describe decentralized control with concepts that Airmen use to describe decentralized execution. As the JFACC must control Air Force, joint, and coalition air assets that he does not necessarily have the full authority to command, he centrally controls aircraft for the JFC. With command authority delegated by the MAGTF commander, the ACE Commander has command authority over all Marine aircraft assigned to the MAGTF, and he centrally commands the ACE. The JFACC, the MAGTF Commander, and the ACE Commander all believe in centralization. The Marines have

full command authority over Marine aircraft; the JFACC has less than full command authority over air component aircraft. That is why Marine doctrine supports centralized command, and Air Force doctrine supports centralized control. *The first conclusion of this study, therefore, is that when Airmen speak of centralized control and Marines speak of centralized command, they are actually speaking of similar, though not identical, tenets.*

Chapter 2 of this study attempted to answer the question of why Airmen and Marines struggle over conceptually similar views of command and control. The difference between them arises from the purpose of each service, the people that fill their ranks, and the environment in which they operate. The command debate takes root in the concept of unity of command. Both Airmen and Marines believe in unity of command and unity of effort; the disparity occurs in light of the different purpose of each service, its roles and missions. The purpose of the Air Force is to provide prompt and sustained offensive and defensive air operations in defense of the United States and its interests through air and space power. The purpose of the Marine Corps is to maintain a combined arms, air-ground, expeditionary force in readiness to conduct complex, expeditionary land and air operations, in the urban littorals and other challenging environments essential to the prosecution of a naval campaign or as directed. *The second conclusion of this study, therefore, is that both the Air Force and Marine Corps believe in unity of command. However, where Airmen believe in unity of command of airpower, Marines believe in unity of command of the combined arms team.*

Chapter 3 of this study presented an overview of the operational environments and the experiences of the people that formed each service's attitudes and attributes toward command and control of airpower, and military aviation in general. The struggle for independence from the Army, coupled with the academic pursuits of strategic airpower,

shaped Air Corps thinking in a completely different manner than combat experience and strong fraternal ties to service ground forces shaped Marine airpower thinking. Geographic characteristics of the WWII theatres of operation in which each service fought - collective land combat for the AAF and isolated island campaigns for the Marines - perpetuated their views on airpower. The Korean and Vietnam wars were the first time these views clashed. Control of Marine Aviation was the subject of heated debate in both wars, and it is still the subject of many a debate, article, and scholarly research today. *The third conclusion of this study, therefore, is that decades of operational experience has convinced Airmen and Marines of the validity of their opposing views of airpower, and each can reinforce their doctrinal arguments with historical reference.*

Chapter 4 of this study reviewed the joint military command and control structure changes that resulted from the Goldwater Nichols Act. GNA was an attempt to end debates over control of military forces - relying on the authoritative guidance of joint doctrine. However, doctrine requires judgment in application, and in reference to control of Marine Aviation, both Airmen and Marines judge joint doctrine differently. The Air Force now plans and trains to employ forces through a COMAFFOR who is also dual-hatted as a JFACC, claiming doctrinal authority to control all air assets within the Joint Force area of operations in the name of unity of effort. Marines resist JFACC control, concerned that capricious, uninformed exercise of authority will upset the synergy of MAGTF combined arms firepower. During Operation Desert Storm, the difference between Air Force and Marine Corps interpretation of JFACC authority led to conflict that General Schwarzkopf buried in the sheer size of the coalition military force. Though neither service's doctrine changed to reflect influence from the other, the military professionals who applied that doctrine exercised judgment in application, based on knowledge of the other's roles, missions, and concerns. *The fourth conclusion of this study, therefore, is that different components will require*

varying amounts of operational certainty at various times throughout an operation, and will therefore require different apportionment of effort. Airmen and Marines must fully understand roles, missions, and concerns of the other services in order to effectively manage and employ airpower assets in joint warfare.

Implications

To seamlessly integrate airpower in joint operations, Airmen and Marines must understand the roles, missions, and concerns of each other's service. Airmen must understand that Marines organize, train, and equip for independent, expeditionary operations, as well as joint operations, requiring the MAGTF Commander to retain operational control of his ACE. Just as the MAGTF ACE is not as robust as the Air Force, the MAGTF Ground Combat Element (GCE) is not as robust as the Army, and the MAGTF Commander depends on the synergy of his ACE and GCE to generate effective combat power.

In similar fashion, Marines must understand that Airmen organize, train, and equip for sustained air operations. The Air Force plans and trains to employ as the air component of the joint force, under control of the COMAFFOR who is dual hatted as the JFACC. Theatre-wide missions assigned to the JFACC require different command and control arrangements than the AO specific missions assigned to the MAGTF Commander, and require support from units across the entire theatre. To enhance their understanding of JFACC control requirements, Marines should envision the intricacies that would ensue should the JFC assign JFACC duties to the ACE Commander.

In joint operations, such understanding will lead to less friction in command and control relationships. Through comprehension of the role of the Air Force and JFACC mission requirements, Marines will understand how to best support joint airpower. Through understanding of the role of Marine Aviation, the JFACC and his Airmen will appreciate

the unique requirements of MAGTF combined arms synergy. Cooperation between Airmen and Marines will ensure the effective focus of airpower on the right mission, at the right time. To understand their counterpart, each service must develop a solid understanding of the other's purpose, people, and environment.



Bibliography

- Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*. 17 November 2003.
- Air Force Doctrine Document (AFDD) 1-2. *Air Force Glossary*. 11 January 2007.
- Air Force Doctrine Document (AFDD) 6-0. *Command and Control*. 17 September 2010.
- Allard, C. Kenneth, and National Defense University. Center for Advanced Command Concepts and Technology. *Command, Control, and the Common Defense*. Rev. ed. Washington, D.C.: National Defense University. 1996.
- Barrow, General Robert. "America's Number One Marine, Defense Week Interview." Defense Week, 14 September 1981. 6-7.
- Biddle, Tami Davis. *Rhetoric and Reality in Air Warfare : The Evolution of British and American Ideas About Strategic Bombing, 1914-1945*. 1st. pbk. ed. Princeton, N.J. Woodstock: Princeton University Press, 2004.
- Boomer, Lieutenant General (Ret) Walter E. Interview transcript. 27 July 2006. Interviewed by Paul Westermeyer, USMC Historical Division.
- Brainard, Edwin H. "Marine Aviation – A Lecture." *Marine Corps Gazette*, 11, no.3 (September 1926): 192-198.
- Cardwell, Thomas A. *Command Structure for Theater Warfare : The Quest for Unity of Command*. Maxwell Air Force Base, Ala.: Air University Press, 1984.
- Clifford, Kenneth J., and United States. Marine Corps. History and Museums Division. *Progress and Purpose: A Developmental History of the United States Marine Corps, 1900-1970*. Washington,: History and Museums Division United States Marine Corps. U.S. Government Printing Office, 1973.
- Command Chronology. 3rd Marine Aircraft Wing, 3-30 September 1990.
- Command Chronology, 3rd Marine Aircraft Wing, 1 January – 28 February 1991.

- Cooling, B. Franklin, and United States. Air Force. Office of Air Force History. *Case Studies in the Achievement of Air Superiority*. Washington, D.C.: Office of Air Force History United States Air Force, 1994.
- Corum, James S., and Wray R. Johnson. *Airpower in Small Wars : Fighting Insurgents and Terrorists*, Modern War Studies. Lawrence, KS.: University Press of Kansas, 2003.
- Cunningham, Alfred A. "Value of Aviation to the Marine Corps." *Marine Corps Gazette*, V no. 3 (September 1920): 221-233.
- Darnell, Daniel J. and George J. Trautman III. "Shoulder to shoulder: The Marine Corps and Air Force in Combat." *Joint Force Quarterly*, 1 January 2009.
- De Chant, John A. *Devilbirds; the Story of United States Marine Corps Aviation in World War II*. 1st ed. New York,: Harper, 1947.
- Department of Defense (DOD) Directive 5100.1. *Functions of the Department of Defense and Its Major Components*, 21 December 2010.
- Estes, Kenneth W. *The Marine Officer's Guide*. 6th ed. Annapolis, Md.: Naval Institute Press, 1996.
- Executive Order No. 9877 *Functions of the Armed Service*. 26 July 1947.
- Futrell, Robert Frank, and Air Force History and Museums Program (U.S.). *The United States Air Force in Korea, 1950-1953*. 50th Anniversary of the Korean War Edition. (New imprint of the revised 1983 ed. Washington, D.C.: Air Force History and Museums Program, 2000.
- Futrell, Robert Frank, and Air University (U.S.). Aerospace Studies Institute. *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964*. Maxwell Air Force Base? AL: Aerospace Studies Institute Air University, 1971.
- Gates, Robert M., Secretary of Defense. "Statement on Department Budget and Efficiencies." Speech. The Pentagon, 6 January 2011.
- Goodman, Glenn W. Jr. and John G Roos. "An Exclusive AFJI Interview with: Lt.Gen. Walter E. Boomer, USMC." *Armed Forces Journal International*, August 1992, 38-41.

- Gordon, Michael R., and Bernard E. Trainor. *The Generals' War : The inside Story of the Conflict in the Gulf*. 1st ed. Boston: Little Brown, 1995.
- Hinote, Clint, Air University (U.S.). Air Force Research Institute., and Air University (U.S.). Press. *Centralized Control and Decentralized Execution : A Catchphrase in Crisis?* Maxwell Air Force Base, AL: Air University Press, 2009.
- Hough, Frank, Verle Ludwig and Henry Shaw. *History of the U.S. marine Corps Operations in World War II, Volume I, Pearl Harbor to Guadalcanal*.
- Isely, Jeter Allen, and Philip Axtell Crowl. *The U.S. Marines and Amphibious War; Its Theory, and Its Practice in the Pacific*. Princeton, NJ: Princeton University Press, 1951.
- Johnson, Edward C., Graham A. Cosmas, and United States. Marine Corps. History and Museums Division. *Marine Corps Aviation : The Early Years, 1912-1940*. Washington: History and Museums Division Headquarters U.S. Marine Corps : U.S. Government Printing Office, 1977.
- Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001, (As Amended through 31 July 2010).
- Keaney, Thomas A., and Eliot A. Cohen. *Revolution in Warfare? : Air Power in the Persian Gulf*. Annapolis, MD: Naval Institute Press, 1995.
- Keaney, Thomas A., Eliot A. Cohen, Gulf War Air Power Survey (Organization : U.S.), and United States. Dept. of the Air Force. *Gulf War Air Power Survey*. Washington, D.C.: Dept. of the Air Force, 1993.
- Kometer, Michael W. *Command in Air War : Centralized Versus Decentralized Control of Combat Airpower*. Maxwell Air Force Base, AL: Air University Press, 2007.
- Mandales, Mark David, Thomas Hone, and Sanford S. Terry. *Managing "Command and Control" In the Persian Gulf War*. Westport, CT: Praeger, 1996.

- Marine Corps Doctrinal Publication (MCDP) 6 *Command and Control*. 4 October 1996.
- Marine Corps Doctrinal Publication (MCDP) 1-0 *Marine Corps Operations*. 27 September 2001.
- Marine Corps Warfighting Publication (MCWP) 3-2 *Aviation Operations*. 9 May 2000.
- Marine Corps Warfighting Publication (MCWP) 3-25 *Control of Aircraft and Missiles*. 26 February 1998.
- McClendon, R. Earl. *Unification of the Armed Forces: Administrative and Legislative Developments, 1945-1949*. Maxwell Air Force Base, AL: Documentary Research Division Research Studies Institute Air University, 1952.
- McCutcheon, Lieutenant General Keith B. "Marine Aviation in Vietnam, 1962-1970." *Naval Review*, 1971, 122-155.
- McNamara, Stephen J. *Air Power's Gordian Knot : Centralized Versus Organic Control*. Maxwell Air Force Base, AL: Air University Press, 1995.
- Meid, Colonel Pat and Major James Yingling. *U.S. Marine Corps Operations in Korea 1950-1953: Volume V, Operations in West Korea*. Washington: History and Museums Division Headquarters U.S. Marine Corps : U.S. Government Printing Office, 1972.
- Merriam-Webster. *Merriam-Webster's Collegiate Dictionary*. 11th ed. Springfield, MA: Merriam-Webster, Inc., 2003.
- Mersky, Peter B. *U.S. Marine Corps Aviation : 1912 to the Present*. 3rd ed. Baltimore, Md.: Nautical & Aviation Publishing, 1996.
- Message. Chairman, Joint Chiefs of Staff; subject: Joint Doctrine for Theatre Counterair Operations. 4 March 1986.
- Miller, Thomas G. Jr. *The Cactus Air Force*. New York, NY: Harper & Row, Inc., 1969.
- Millett, Allan Reed. *Semper Fidelis : The History of the United States Marine Corps*. New York: Macmillan Pub. Co., 1980.

- Mitchell, William. *Winged Defense : The Development and Possibilities of Modern Air Power Economic and Military*. Tuscaloosa, AL.: University of Alabama Press, 2009.
- Momyer, William W., A. J. C. Lavalley, James C. Gaston, and United States. Air Force. *Airpower in Three Wars*. Washington: Dept of the Air Force, 1978.
- Overy, R. J. *The Air War, 1939-1945*. 1st Potomac ed, Cornerstones of Military History. Washington, D.C.: Potomac Books Inc., 2005.
- Parker, William D., and United States. Marine Corps. History and Museums Division. Historical Branch. *A Concise History of the United States Marine Corps, 1775-1969*. Washington,: Historical Division Headquarters U.S. Marine Corps; U.S. Government Printing Office, 1971.
- Posen, Barry. *The Sources of Military Doctrine : France, Britain, and Germany between the World Wars*. Ithaca: Cornell University Press, 1984.
- Putney, Diane T. *Airpower Advantage : Planning the Gulf War Air Campaign, 1989-1991*, USAF in the Persian Gulf War. Washington, D.C.: Air Force History and Museums Program United States Air Force, 2004.
- Proceedings. "Marine Air: There When Needed [Interview] With Lieutenant General Royal N. Moore Jr., USMC." Proceedings 117, no 11.(November 1991) 63-70.
- Rife, Shawn P. "Kasserine Pass and the Proper Application of Airpower." *Joint Force Quarterly*, Autumn Winter 1998-1999: 71-77.
- Schlosser, Nicholas J. "The Marine Corps Small Wars Manual: An Old Solution to a New Challenge?" *Fortitudine*, 35, no. 1 (2010): 4-9.
- Sherrod, Robert Lee. *History of Marine Corps Aviation in World War II*. 1st ed. Washington,: Combat Forces Press, 1952.
- Tedder, Air Marshal Arthur. "Air, Land, and Sea Warfare." *Journal of the Royal United Services Institution*, XCI, no 561. (February 1946): 60-68.
- Trest, Warren A. *Air Force Roles and Missions : A History*. Washington, D. C.: Air Force History and Museums Program, 1998.

United States. Marine Corps. *History of U.S. Marine Corps Operations in World War II*. Washington: Historical Branch G-3 Division Headquarters U.S. Marine Corps, 1958.

United States Code Title 10, 2010 edition, Subtitle D, Chapter 807, Section 8062(c).
http://www.law.cornell.edu/uscode/10/usc_sec_10_00008062----000-.html (accessed 6 March 2011).
- This Cornell University Law School website details the Air Force's Title 10 responsibilities.

United States Code Title 10, 2010 edition, Subtitle C, Chapter 507, Section 5063(a). www.law.cornell.edu/uscode/10/usc_sec_10_00005063--000-.html (accessed 5 March 2011).
- This Cornell University Law School website details the Marine Corp's Title 10 responsibilities.

United States Marine Corps. *Small Wars Manual*. U.S. GPO, 1940.

United States Marine Corps. *Commandant of the Marine Corps. 35th Commandant of the Marine Corps Commandant's Planning Guidance*. 2010.

U.S. House. *Goldwater-Nichols Department of Defense Reorganization Act of 1986*. 99th Congress. 1st sess, 1986. H.R. 3622.

Van Creveld, Martin. *Command in War*. Cambridge, MA: Harvard University Press, 1985.

Vandenbussche, Lieutenant Colonel Jeffrey L. "Centering the Ball: Command and Control in Joint Warfare." SAASS Thesis. Maxwell AFB, AL: School of Advanced Air and Space Studies, 2007.

War Department Field Manual 100-20 *Command and Employment of Airpower*, 21 July 1943.

Weiss, Maj Aaron. "What Now, Major?" *Marine Corps Gazette*, November 2007, 66-69.

Winnefeld, James A., Dana A. Johnson, and James A. Winnefeld. *Joint Air Operations : Pursuit of Unity in Command and Control, 1942-1991*, Rand Research Study. Annapolis, MD: Naval Institute Press, 1993.