



SADDLED WITH HISTORY: AIRMINDEDNESS AND ITS
ANTECEDENTS IN UNION CAVALRY

By

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DISCLAIMER

The conclusions and opinions expressed in the 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

“Air-mindedness,” broadly defined as a perspective through which the battlespace is not constrained by geography, distance, location, or time, has been central to the identity of the Air Force since its institutional beginnings. The Air Corps Tactical School (ACTS) motto *Proficimus More Irretenti* – We Make Progress Unhindered by Custom – suggests an airpower culture built on a perceived monopoly on strategic perspective, eschewing yesterday’s experience for tomorrow’s promise. By following the development of Union Cavalry under the command of General James H. Wilson, however, one sees a progressive leader organizing a force around a similar, far-reaching vision of the strategic battlefield. Thus, many of the long-held precepts of airpower doctrine find historical precedent in independent mounted operations. By exploring how Wilson used cavalry’s advantages to exploit time and space, this paper will establish a more inclusive institutional foundation, acknowledging airpower’s debts to land power, and provide a fuller understanding of the use of speed and range for achieving strategic effects.

Table of Contents

DISCLAIMER.....	ii
ABOUT THE AUTHOR.....	iii
ACKNOWLEDGEMENTS.....	iv
ABSTRACT.....	v
Introduction: A Cold Morning in March.....	1
Chapter 1 - AIRMINDEDNESS: Evolution and Application.....	11
Chapter 2: Major General James H. Wilson: America's First Airman.....	50
Chapter 3: Analysis.....	89
Conclusion: Horses.... So What?.....	111
BIBLIOGRAPHY.....	114



Introduction: A Cold Morning in March

On a cold late March morning, 13,500 men departed their staging areas intent on their mission: the destruction of the industrial heart of a nation and its leadership. Attaining their campaign's objective would be the culmination of a bloody four-year struggle against a hated foe. Leveraging years of modernization and doctrinal development and reshaping a force built to fight the last war, these men used state of the art equipment, training techniques, innovative reorganization, and guts to achieve their objectives.

Their first objective was to bypass the enemy's army and navy and any obstacle that would impede or prevent their movement. This gave them the unique ability to act across a wide area and also allow them to strike at targets deep in hostile territory without first achieving success on the battlefield. The second objective, related to the first, was to mass quickly at selected times and places. Their leaders foresaw new potential for rapidly concentrated effort and had been persuaded that their force was far more effective when concentrated and used offensively than when used defensively, since a defender was spread thin, unable to meet an attacker with concentrated forces of its own. By design, their final objective had far-reaching effects in both the strategic and operational sphere, closing the door on their enemy.

These men internalized time and space differently than did their counterparts in the "leg" infantry. The technology and capability these men took into battle divorced distance from time and space, denying the map its inherent operational restraints. Free to move about the operational battlespace, these men shattered natural and political borders and simultaneously held all points on the map at risk. Their rapid movement unleashed a vast potential of effects that existed in a probability field of multiple range rings, which encompassed a considerable portion of the theater. Moreover, what their army's commanding general wanted, and what they were particularly well-suited

to deliver, was indirect effects, often remote from the point of application, that were less predictable than those of other forces, and not usually in forms that were as easily measured as the movement of the front line on a terrestrial battlefield

So on this cold March morning, 13,500 men donned their distinctive uniforms, walked slowly to their waiting transportation, and mounted for the largest, longest, and boldest attack in their nation's history. Some undoubtedly wondered if this would be their last day on Earth, none suspecting that their mission would end 600 miles later with the destruction of the enemy nation's capacity to wage war and the capture of its leader.

For General Wilson and his men, destiny awaited. But it would not wait long... it was April 1865, and the American Civil War would soon be over.¹

[Airmindedness] is a ... mind-set providing perspective through which the battlespace is not constrained by geography, distance, location, or time. The air-mindedness lens enables Airmen to think about conflict in which force-on-force and armies in the field are only one element. It implies the ability to influence the links between adversary materiel and moral strength.

- Dr. Dale L. Hayden

Introduction

As the last shot of the American Civil War died away, General James H. Wilson established himself as America's first great Airman. To be sure, his contribution to war predates heavier-than-air aviation, and given that he died in 1925, it is entirely possible he never saw an

¹ This vignette was written by Lieutenant Colonel Gordon Quick, USA, in collaboration with the author and Major Peter Tritsch, USAF, as part of a research assignment for Air Command and Staff College. It appears in the unpublished research project, "The War of Vertical Aggression," written by the author and Major Tritsch.

airplane in person. His contribution however, is not measured in terms of altitude, but rather in innovation and effect. After commissioning from West Point in 1860, Wilson quickly established himself as a military prodigy. While rapidly rising through the ranks in the crucible of war — a Lieutenant in 1862, he breveted Major General by early 1865 — he began to think about the application of cavalry's advantages in a manner above and beyond contemporaneous practitioners like Nathan Bedford Forrest and Phillip Sheridan. General Wilson served as chief of the Cavalry Bureau and commanded cavalry forces at the Division and Corps levels for Sheridan, William T. Sherman, and George Thomas, using these opportunities to develop a new doctrine for Union cavalry. His spring 1865 campaign through Alabama was the culmination of these experiences and developments. In less than 45 days, Wilson's forces — the first independent corps-level Cavalry force and the largest in the history of the Western Hemisphere — traveled over 600 miles and leveraged the cavalry's advantages in speed and range to destroy vital industries, brought the war to the heart of Dixie, captured Jefferson Davis, and crushed Nathan Bedford Forrest's defenses. By the time news had reached Wilson that the war was over, he had established a new perspective on the battlespace and new tempo in war. Douhet would (should) have been proud.

Proficimus More Irretenti - We make progress unhindered by custom

- Air Corps Tactical School motto

Historical examination is central to the study of war. Analysis of past battles has shaped and reshaped thinking on strategy and warfare since Thucydides helped formalize the study of war as an academic discipline. From Clausewitz to Corbett, historians and theorists have

examined a multitude of battles in a variety of contexts to derive useful understanding and provide an order to war as an intellectual endeavor. In all eras and in every culture, military planners have used these concepts to shape time and space on their respective battlefields. History's lessons, in short, cannot be undersold.

It is surprising then, that the USAF as an institution actively turns its back on history. From Mitchell's admonition against backward-looking services, to William Sherman's rejection of ground component influence and de Seversky's rejection of the "hackneyed idioms of the past," the Air Force has eschewed the past in its fetishization of newness.² The central theme for early air power theorists was that airpower and its technologies represented a clear break with the past. In doing so, they closed the door on centuries of military principle. Although an heir to the intellectual heritage of ACTS, the School of Advanced Air and Space Studies diverges from the Air Force's institutional rejection of history in one key aspect, its motto, "From the Past, the Future." Similarly, this paper turns away from the service's underappreciation of history and adopts SAASS's perspective to derive a strain of air-minded thinking and air-minded leaders in history. In doing so, this paper establishes a deeper set of historical precedents useful for framing the evolution of the service. The growing doctrinal convergence of war-fighting technologies demands an inclusive, technology-agnostic framework for describing the unique contributions of the service. By examining the service's underlying intellectual concepts through time, this paper divorces theory from technology, creating space for the service

² William Mitchell, *Winged Defense* (Tuscaloosa, AL: The University of Alabama Press, 2009), 20.; William C. Sherman, and Wray R. Johnson (*Air Warfare*. Maxwell Air Force Base: Air University Press, 2002), 15.; *Military Airpower: A Revised Digest of Air Power Opinions and Thoughts*. Rev. ed (Maxwell Air Force Base: Air University Press, 2007), 235.

to fold doctrinal convergence into an inclusive, yet distinct, perspective of battle.

The examination of General Wilson has relevance to our modern Air Force. Air, Space, and Cyber forces have been following a path of strategic convergence. The integrated approach is both “fundamental” and “necessarily unique” to the service.³ Yet much of the service’s identity is still heavily wedded to specific aerospace technologies.⁴ As suggested by the Air Corps Tactical School motto in 1927, the post-WWII speeches of General Hap Arnold (credited with coining the modern interpretation of airmindedness), and current AFDD-1 doctrine, the Air Force has limited itself through a chauvinistic perspective of battle and an unfortunate fetishization of newness. It deserves to be said the tenets of airmindedness did not come stapled to the aircraft in 1903 and the prophets of airpower did not pull their ideas out of thin air. A retrospective look at Wilson’s campaign through the “unique” perspective of airmindedness serves to open a door to demonstrate airmindedness is an idea encompassing more than the artifact of technology.

Methodology

Looking to the past to inform the present and beyond is simultaneously inviting and risky. The application of airmindedness to cavalry operations is inherently imperfect. There is a lot to be learned about the future development of institutional perspectives by looking to the past, but there are bound to be inconsistencies. This paper identifies key areas problematic to the character of the research to ensure inconsistencies are relegated to the margins of the thesis. This is not to wish away inconvenient truths that distract from a preconceived notion

³ Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, 17 October, 2011, 12-18.

⁴ Carl H Builder, *The Masks of War* (Baltimore, MD: The Johns Hopkins University Press, 1989), 32.

about air-mindedness; rather, these areas are taken as a challenge, requiring a careful, disciplined approach to ensure credibility.

Broadly speaking, the risk of this paper emanates from two gaps: historical and conceptual. In both cases this paper will use a mixture of primary, archival, and secondary sources to ensure an accurate representation of the key historical moments. Similarly, this paper will leverage a comprehensive literature review to consolidate and derive a useful working definition of air-mindedness. In defining air-mindedness as a concept distinct from technology, this paper defines the intellectual space where Wilson's theories and air-minded doctrine can overlap, establishing a credible means of comparison while acknowledging the differences between airpower and mounted operations.

Historically, the first gap concerns the segmented nature of the documentation of General Wilson's accomplishments. His 1865 raid through Alabama and Georgia was a unique achievement in tactics and doctrine, but one of the more poorly examined campaigns in the American Civil War. Furthermore, to the extent his campaign has been studied and written about, it is often considered an isolated incident. The entirety of General Wilson's Civil War tenure is examined piecemeal as a secondary element within larger campaigns. His contributions to the Cavalry Bureau are treated in one set of literature; his role as a supporting Cavalry commander to Generals Sherman and Hood is examined in another. Finally, his independent campaign, the so-called "Yankee Blitzkrieg," is detailed in a third set of books. Edward Longacre's biography *Union Stars and Top Hat* does chronicle Wilson's life from birth to his death in 1925; it explains his leadership as a reflection of his insatiable ego, rather than military innovation. Other than Wilson's two-volume autobiography, an independent end-to-end analysis of Wilson's innovations does not exist. This essay seeks to fill the gaps and establish a coherent narrative encompassing General Wilson's key contributions to the development of cavalry from 1862 to 1865.

The second gap to consider is one internal to Air Force doctrine. Air-mindedness is expressed as a quality unique to the Air Force, yet as a concept, it is scantily (and frustratingly) covered in doctrine, getting a one-page description followed by a one and a half page bulleted list of implications. Air-mindedness has re-invented itself from a cultural mind-set to a strategic one, suggesting a concept with more depth than doctrine in fact suggests. By reviewing the available literature on air-mindedness, organizational identity, and historical interpretation, this paper closes gaps that exist between the description of an idea and how that idea manifests itself in operations.

From the two gaps listed, a third one forms. The third gap to fill in conducting a credible examination of air-mindedness and General Wilson stems from the relationship between the first two risks. Bridging technology, eras, and warfighting domains is inviting and risky at the same time. The relative lack of coherent documentation of Wilson's Civil War career provides opportunities to "fill in the gaps" in the course of research. A corresponding search of interpretations of modern air-mindedness offers an all too convenient means to fill those gaps in a way to support a preconceived idea.

To do that, this paper will start by examining air-mindedness as a term and as a concept. Chapter 1 will explore the use of the word, unpacking the context surrounding it and its evolving meaning from a Mahan-esque marketing tool during the inter-war years to a strategic mindset at the dawn of the cold war. The examination will conclude with a review of modern doctrinal use and the implications of the concept independent of modern technology.

Having established the conceptual basis of air-mindedness, Chapter 2 will review the accomplishments of General Wilson during the Civil War, capturing the lessons learned from his early experiences as a cavalry officer to his investments in technology and doctrine. Following his contributions as a supporting commander, his independent

campaign through Alabama will be analyzed in detail, encompassing key preparatory decisions, extemporaneous operational decisions, and battlefield maneuvers. By looking at Wilson's Civil War career, this paper will establish an unbroken line of development from idea to doctrine to execution, filling the gaps left by existing fragmentary examinations.

Chapter 3 will directly compare and contrast modern understandings and implications of air-mindedness and General Wilson's Civil War contributions. The tenets of airpower coupled with examples from modern airpower history will be used to establish a common set of definitions and battlefield examples to ease the translation of air-mindedness from the industrial age to the jet age. Furthermore, the conditions of General Nathan Bedford Forrest's defeat by Wilson will be used as a contrapositive to establish the deficient character of cavalry forces under a non-air-minded leader.

Lastly, this paper is presented as a history, but at its core, it is really about an idea. Air-mindedness is central to both the Air Force's internal and external identity. Air-mindedness is the intellectual construct used to focus attention on the service's strategic contributions, and at the same time it is presented to others as a expression of Air Force uniqueness among the services. Further, there is very little examination of the idea outside of doctrine. This paper seeks to expand this discussion, and it does so with the clear intent of reaching as many in the Air Force as possible.

In an attempt to maintain focus, this paper will omit two significant discussions. Notably, this paper limits its examination of cavalry to its use in the American Civil War. In doing so, it will not attempt to draw a single, unbroken line from General Wilson to the Air Corps Tactical School. Shared uniforms and idioms form but a few of the cultural artifacts connecting the two services, but that analysis is merely convenient to this paper's assertions, not required. Second, the growth of cavalry from reconnaissance to tactical support to independent deep

strike roles and responsibilities shares a development path similar to airpower. This is an important trend to analyze, but involves technology integration issues that exist outside the focus of this paper. These omissions are mentioned here only because they are most likely to occur to the reader as supplemental lines of examination.

If the comparison of airpower and cavalry is beset on all sides by false analogy and irrelevancy, it is important to ask why one should bother in the first place. If one can accept Douhet's notion that airpower effects are largely educated estimates or theory, then the operational level campaigns to achieve those effects are also based on theory.⁵ Therein lies the purpose of this essay. Theory is both the product of past observation and an intellectual abstraction necessary to explain and predict phenomena. It is fair to suggest then that the responsible expansion of precedent should improve the foundations upon which theories are built. Airpower is no exception.

Enabled by the unique perspectives of air-mindedness, airpower introduced new ways to envision time and space across the battlefield. Or so it was assumed by Billy Mitchell, William C. Sherman, and the Air Corps Tactical School. Their theories of airpower rested on the limited experience of World War I and the promise of technology, a shaky foundation on which to build their advocacy. The institutional resistance to centralized command and concentration is perhaps understandable in light of these air-minded pipe dreams. The occasional look into history might have suggested to these men that exploiting speed, range, time and space are universally appreciated qualities. Incorporating the experiences of previous like-minded, air-minded leaders might have been beneficial to the air service in the critical interwar years; this would have

⁵ Giulio Douhet. *The Command of the Air* (Tuscaloosa, AL: The University of Alabama Press, 2009), 59

been a lesson with some relevancy in the current context of converging doctrines and post-war retrenchment.



Chapter 1 - AIRMINDEDNESS: Evolution and Application

This essay employs the concept of “airmindedness” to draw together technologies and experiences separated by generations. To maintain credibility, it is important to carefully investigate airmindedness and define its importance, its history as a concept, and the evolution to its current application. This chapter will explore airmindedness starting with the broadest understanding and use of the term during the interwar years both as a historical phenomenon and as a conceptual tool of historiography. It explores the rich social and cultural implications of airmindedness so the Air Force’s militaristic co-opting of airmindedness can be observed more clearly. Through this analysis, the chapter identifies where doctrine has misappropriated General Arnold’s use of airmindedness and how contemporary literature conceptualizes its unique contributions. Finally, this chapter maps out the connections between airmindedness and the doctrinal tenets of airpower — linking intellectual construct to operations — providing a more tangible set of variables with which to compare modern warfare with industrial age warfare.

Point of Departure: Airmindedness and Its Intellectual Origins

A survey of the literature dealing with airmindedness reveals two main schools of thought: the historians and the practitioners. Richard Overy captures the academic argument, insisting the term is a historical construct capturing a general social phenomenon in the interwar years.¹ Current Air Force doctrine defines the practitioner’s school of thought,

¹ Mark K. Wells, ed., *Air Power: Promise and Reality*. Issue 6 of Military History Symposium Series of the United States Air Force Academy (Chicago: Imprint Publications, 2000), 1

emphasizing air-mindedness as a unique military perspective on warfare.² Taken separately, each of these approaches offers an incomplete look at air-mindedness. Considered as a whole, the relationship between the two approaches reveals a common utility: air-mindedness serves as a mechanism to align a wide array of intellectual disciplines and perspectives.

Let Your Air-mindedness Be Shown Forth Before Men:

Air-mindedness as history: 1918 - 1992

They were slaughtered in stupid battles planned by stupid generals. Those who survived were shocked, disillusioned and embittered by their war experiences, and saw that their real enemies were not the Germans, but the old men at home who had lied to them. They rejected the values of the society that had sent them to war, and in doing so separated their own generation from the past and from their cultural inheritance.

- Samuel Hinds

The analysis of air-mindedness begins with the end of World War I. With all hands caught in a war none seemed to want, the continent's unspeakable violence and suffering did not decisively settle the continent's unresolved strategic knot. Basil H. Liddell Hart and JFC Fuller suggest the bloody experiences of the Great War, and its ambiguous results, stem from an intellectual bankruptcy that permeated military leadership.³

The strategic and tactical confusion exacted a high price for the nations involved; as a consequence, the Great War shattered Europe and European society. As Liddell Hart and Fuller suggest, there was a moral

² Air Force Manual (AFM) 1, vol 1. *Basic Aerospace Doctrine for the United States Air Force*, March, 1992, 15; AFDD-1, *Basic Doctrine 2011*, 18

³ Sun Tzu, *The Illustrated Art of War* (New York: Oxford University Press, 2005), 6; J.F.C. Fuller, *The Foundations of the Science of War* (London: Books Express Publishing, 2011), 18

imperative to reconsider how war should be fought. Maneuver, dislocation, and indirect action were seen as conceptual solutions to the horrors of symmetrical force-on-force operations experienced in France and Gallipoli. From these experiences, however, an innovation of the war emerged, offering hope for a more enlightened, less costly form of combat.

As World War I developed, so too did combat aviation. Its meteoric rise from military novelty to operational requirement reflected a belief airpower could return decision to battle. Airpower's promise, advocated and advanced by Billy Mitchell, was never quite realized in the war and was perhaps truncated by the armistice. Nevertheless, the promise was enticing to post war theorists, allowing them to frame post-war combat aviation as filled with promise.⁴ Influential theorists like Foch, Liddell Hart, and Ludendorff extrapolated from the limited results of early aviation and saw a new era in warfare where airplanes would replace fielded forces as a decisive element in battle.⁵ Aviation, it seems, had returned some rationality back into the classic alignment of ends, ways and means, and there was much to be optimistic about. The disillusionment with "old men" and their "stupid battles" was replaced with the hope of a more humane form of combat. In that context, military aviation and the upheaval of military theory reflected the larger social and cultural earthquake reverberating throughout the 1920s.

An analysis of the leading developments of 1920's culture establishes a broad forum from which to better understand airmindedness. The rapid development of America's interwar aviation was beset on all sides by popular notions that valued re-visiting the old with the new, articulated by sweeping changes in music, art, and technology. In Ann Douglas's examination of American culture in the

⁴ Lee B Kennett, *The First Air War 1914-1918* (New York: Simon & Schuster, 1999), 226

⁵ Kennett, *First Air War*, 226

Jazz Age, she offers the post-war desire to recharacterize the social and cultural fabric as a reflection of the emergence of jazz, architecture, and air-mindedness.⁶ Architecture's International Modernism, the Harlem Renaissance, and the Precisionist movement broke with long held aesthetic norms and barriers between art and technology. So it was with aircraft and aviation and the distances between people and ideas. The artifacts of these movements, New York's Rockefeller Center, Jazz Syncopation, and the paintings of Charles Demuth, are reflections of the intellectual momentum of the time. The interwar years were seized with overlapping cultural and technological developments allowing society to engage, and eventually break, with tradition, filling America with promise to literally and figuratively reach new heights.⁷

Changes in aviation and air-mindedness existed within the shifting social and cultural environment. Corn's classic social history *Winged Gospel* focuses on air-mindedness as an interwar phenomenon more closely, describing the contemporaneous movement in quasi-religious terms.⁸ For the air-minded, the quality of one's soul was measured by the acceptance of air-mindedness. Visitors to air shows were encouraged to "show your air-mindedness before men," to announce one's faith in the promise of flight. Flight-related casualties were soberly described as "a little sacrifice," and those unwilling to step in an airplane and risk such a sacrifice were considered already dead.⁹ Corn describes the general enthusiasm for aviation and air-mindedness steadily escalating into a fever pitch as new records in speed, altitude and endurance were broken throughout the 1920's, crescendoing with the Atlantic crossing.

⁶ Ann Douglas. *Skyscrapers, Airplanes and Air-mindedness: "The Necessary Angel." The Jazz Cadence of American Culture* (New York: Columbia University Press, 1998), 208, 218

⁷ Douglas, *Skyscrapers, Airplanes and Air-mindedness*, 218

⁸ Corn, *Winged Gospel*, 61, 69

⁹ Corn, *Winged Gospel*, 52

If air-mindedness was a religion, as Corn suggests, then its chief evangelist was Charles Lindbergh.¹⁰ Crossing the Atlantic Ocean was the culmination of social, technological, and cultural changes coursing through 1920s society. It is difficult to overstate the social impact of Lindbergh's feat. The broader social impact of his flight is covered well enough by historians, but Corn offers one clear example to clarify the air-minded zeitgeist: If air-mindedness as a cultural phenomenon can be objectively measured and quantified, Lindbergh and the crossing of the Atlantic Ocean inspired more poems than any other person or event in human history.¹¹

These events are interesting in themselves, but they are examined here to establish the cultural context surrounding the intellectual development of aviation and airpower in the 1920s. The economic, social and cultural benefits of aviation were apparent to the adherents of air-mindedness, as were the security implications. General Billy Mitchell made calls for national security in the age of airpower similar to the navy-centric arguments made by Alfred Mahan at the turn of the century. The Panama Canal, according to Mahan, represented a strategically vital asset in the world economy. The overwhelming economic benefit of controlling trade routes through and around the canal created incentives for nations to exercise command of the sea through direct surface action, incentivizing foreign occupation of key ports. For America, as it was for Britain, it was imperative to encourage the growth of a "sea-faring nation," one that was aligned technically, socially, culturally, and militarily to exploit the economic opportunities of the canal while mitigating the military threats the canal introduced.¹²

¹⁰ Joyce Milton. *Loss of Eden: a Biography of Charles and Anne Morrow Lindbergh*. 1st ed (New York, NY: HarperCollinsPublishers, 1993), 180

¹¹ Corn, *Winged Gospel*, 23

¹² Alfred T. Mahan, *The Influence of Sea Power Upon History, 1660-1783* (New York, NY: Dover Publications, 1987), 49, 60

Mitchell's argument followed a similar line of logic. Aviation promised sweeping changes in commercial, civil, and economic perspectives, and it promised to be "a dominating factor in the world's development."¹³ The air domain and the aviation technologies that exploited it were the key to the future of commerce.¹⁴ In turn, the nation's interest in this new domain had to be protected. In doing so, it was evident to Mitchell that old ways of thinking about security and military power were inadequate.¹⁵ Mitchell's argument for security in the Air Age rested on two main areas: public policy and military doctrine. In advocating for public investment in aerospace technology, more advanced technical education, and subsidies in civil aviation enterprise, Mitchell's ideas closely resembled Mahan's "sea-faring nation," concept.

Airmindedness is not used explicitly by Mitchell, but when used by historians as a mechanism for intellectual alignment of similar cultural, social, technical, economic, and security phenomena, it seems to fit with the general tone of Mitchell's work.¹⁶ In that light, *airmindedness* as it was implicitly communicated in the interwar years and Mahan's sea faring nation are very similar constructions. The nation that first exploits the emerging domain is most likely to secure its sovereignty in the Air Age. The American version of this notion is teeming with optimism. The European perspective of *airmindedness* in the interwar years was decidedly less so.

¹³ Mitchell, *Winged Defense*, 119

¹⁴ Mitchell, *Winged Defense*, 19

¹⁵ Mitchell, *Winged Defense*, 20

¹⁶ This essay avoids a more specific discussion of the Air Corps Tactical School. The body of work coming out of the school in the 1920's and 30's can be characterized as further articulations of Mitchell and Trenchard. The pervasive attitude of the school, however, was very much a product of its time. ACTS's motto — "Proficimus More Irretenti" - We make progress unhindered by custom — is very much in line with contemporary attitudes about innovation. More specific discussions regarding the institutional influence of the school and its intellectual bent are well documented. The collective literature on ACTS suggest that they faculty and students labored under a military sense of *airmindedness* as a unique, four dimensional perspective on warfare.



FIGURE 1 -
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LAWRENCE JOURNAL-
WORLD, AUG 29, 1927

Historian Peter Fritzsche offers a different perspective of airmindedness. Whereas the phenomenon in the US manifests itself in generally optimistic terms, the European interwar experience emphasizes the security dilemma implicit in technical revolutions. For Europe, World War I is responsible for an “airmindedness” that took hold on the continent as a matter of security policy.¹⁷ Describing German Gotha raids and Zeppelin bombings, Fritzsche describes the militaristic use of aircraft as the “dark side” of progress.¹⁸ As Fuller predicted, the moral hazard of easy destruction quickly translated into a security dilemma for European nations negotiating their security positions in the 1920s and 30s.¹⁹

Fritzsche uses *airmindedness* as a historical concept to capture and conceptualize

Germany’s policies toward interwar rebuilding,

citing airmindedness as a central mechanism to align its social, economic, and industrial power to re-assert German national identity.²⁰

Airmindedness was a threat as well as a promise, and many nations considered a failure to foster airmindedness as a strategic vulnerability on multiple fronts. Fritzsche’s description of Airmindedness as a security policy was echoed in the public policy programs of the Soviet Union, China, and the United States. Post-revolutionary Soviet

¹⁷ Peter Fritzsche, “Machine Dreams: Airmindedness and the Reinvention of Germany,” *The American Historical Review* 98, no. 3 (June 1993), 688

¹⁸ Fritzsche, “Machine Dreams,” 685

¹⁹ Fuller, *Science of Warfare*, 317

²⁰ Fritzsche, “Machine Dreams,” 709

Union adopted air-minded policies similar to Germany as a security measure, but also as a means to modernize its communist economic and industrial base, bolstering its national and ideological image.²¹ China's policy was geared more toward military security, but understood the strategic rewards of modernizing its technological base.²²

In this cultural and social interpretation of air-mindedness history, Overy is correct. The historian's use of air-mindedness captures a pervasive energy coursing through the 1920's society capped by Lindbergh's crossing of the Atlantic.²³ Fritzsche's contemporaneous examination of air-mindedness is a reflection of German national security policy, echoed by the international community. The preceding cultural, social, economic, and military examples support Overy's assertion as air-mindedness as a retrospective concept useful for aligning the major threads of interwar development. It is important to recognize, however, that air-mindedness was also a term explicitly communicated and popularly understood at the time.

Media outlets described air-mindedness along lines similar to those espoused by Mitchell and Mahan. Aviation pitchmen drummed up sales for incentive rides at county fairs by appealing to progressive men to display air-mindedness.²⁴ Newspapers often used the term *air-mindedness* in titles to stories about aviation development, industry innovation, or aerospace and education.²⁵ Air-mindedness as a media creation, however,

²¹ Von Hardesty and Ilya Grinberg, *Red Phoenix Rising: The Soviet Air Force in World War II* (Lawrence: University Press of Kansas, 2012), 14

²² Xiaoming Zhang, *Red Wings Over the Yalu China, the Soviet Union, and the Air War in Korea* (College Station: Texas A&M University Press, 2002), 30

²³ William Boyd, "Golden Boy: LOSS OF EDEN: A Biography of Charles and Anne Morrow Lindbergh by Joyce Milton," *Los Angeles Times*, 7 February 1993, http://articles.latimes.com/1993-02-07/books/bk-1303_1_charles-lindbergh (accessed 29 December 2013).

²⁴ Corn, *The Winged Gospel*, 53

²⁵ "Air-mindedness," *The Milwaukee Journal*, Nov 20, 1928; "The Growth of Air-mindedness," *The Day*, July 18, 1931; Advertisement *Lawrence Journal-World*, Aug 29, 1927.

was larger than carnival hype and newspaper men. Industries that stood to gain from an emergent aerospace market also couched their marketing strategy in the explicit and implicit understanding of air-mindedness. Lindbergh, already the personification of society's air-mindedness, enjoyed a career as an industry spokesman, leveraging his status as the embodiment of the ideal. Industry advertising also helped give a name to the phenomenon as evidenced by advertisements from Standard Oil (figure 1). Air-mindedness as a media creation is important to note because it gave the phenomenon a name and it found purchase in major facets of society and culture.

Air-mindedness approached a turning point in 1945 when General Henry "Hap" Arnold used the term in a report to the Secretary of War. Arnold's *Third Report of the Commanding General of the Army Air Forces to the Secretary of War* reads as something of a "victory" lap for the Army Air Forces, providing a detailed account of airpower's decisiveness in WWII, implying AWPD-1's airpower theory was sound. The document was mostly forgotten after the war, but it marks the first time air-mindedness was explicitly included as part of the contemporaneous discussion of security, defense, and military operations. In the closing sections of Arnold's remarks to the Secretary of War, Arnold constructed an argument for the future of American airpower strategy similar to Mitchell's arguments in 1926. American security, he argued, lay with airpower, and the strategic strength of airpower lay not only with military aspects of training and doctrine, but with public/private partnerships and commercial development of aviation.

...Air Power depends on its existence upon the aviation industry and the air-mindedness of the nation, the Air Force must promote the development of Air Power in all of its forms, both commercial and private.²⁶

²⁶ General of the Air Force Henry H. Arnold, *Third Report of the Commanding General of the Army Air Forces to the Secretary of War, 12 November, 1945* (Washington DC: Government Printing Office), 70

The connection between air-mindedness, security, military aviation, and commercial industry is perhaps not surprising given the close relationship Arnold had with the aerospace industry.²⁷ Regardless, Arnold's use of *air-mindedness* in 1945 is largely consistent with the term as it was understood and communicated in 1927. Arnold's air-mindedness reflected Mitchell's argument for the alignment of American public, private, social, and cultural conditions, fostering an "air-going" nation.

General Arnold's report to the Secretary of War is relevant for two reasons. First, it is the first official use of the term *air-mindedness* in military circles. Later USAF doctrine traces the origin of the word back to this document. Second, this is the last time anyone would hear of it in a military sense for nearly half a century. The use of the term dropped from doctrinal discussions until 1992 when Air Force Manual (AFM) 1-1 brought the term back. A closer examination of General Arnold's *air-mindedness* and the modern use of the term reveals an intellectual disconnect.

Air-mindedness and Doctrine: 1945 - 1992

The 1992 publication of AFM 1-1 is a turning point in USAF doctrinal history, putting more academic weight behind the service's unique and foundational perspectives.²⁸ Since it was established as an independent service, the USAF struggled to capture exactly what the purpose of doctrine was, and much of its institutional doctrine focused

²⁷ Philip Meilinger, *Airmen and Air Theory: A Review of the Sources* (Maxwell Air Force Base, Air University Press), 21; the USAF Historical Research Archives contain a number of letters from industry leaders congratulating General Arnold on his report. Considering the overt connection Arnold makes between the health of the aviation industry and the security of the nation, the personal accolades from the titans of industry are perhaps understandable.

²⁸ Interview, Dennis Drew. 10 February, 2014.

on an ahistorical ideological adherence to the tenets of airpower contained in AWPD-1.²⁹ AFM 1-1 was a conscious break from this trend, citing over 600 references to historical precedent and military theory.³⁰ It is important because for the first time, through rigorous academic scholarship and historical application, AFM-1 (1992) gave intellectual clarity to airpower. It is also the first time *airmindedness* rose to doctrinal use.

Airmindedness in AFM 1-1 advocates a methodology of maximizing military force through an air-minded perspective on the “aspects of warfare.”³¹ This use of *airmindedness* is remarkably different from General Arnold’s use of the term in 1945. Considering AFM 1-1 cites Arnold as the source, it is important to examine key points in the history of doctrine to understand how airmindedness has been dislocated from its broader application to the more narrowly focused use of the term today.

Futrell’s two-volume analysis of the evolution of Air Force doctrine from 1947 to 1984 captures two diverging trends in airpower thinking: a growing realization the Air Force had intellectually lost its way, and a legacy of doctrinal intransigence and the institution’s inability to free itself from the experience of World War II.³² As the Air Force worked

²⁹ Message. HQ USAFE, Ramstein AB, GE//XPX to HQ USAF, Washington DC.//XOXWD//, 5 June 1989; Barry D. Watts, *The Foundations of US Air Doctrine: The Problem of Friction in War*, (Maxwell Air Force Base: Air University Press, 1984), 85

³⁰ Andrew D. Demobsky, “Meeting the Enduring Challenge, United States Air Force Basic Doctrine through 1992, DTIC Report 93-07 (Washington D.C.: Air Force Institute of Technology, 1993), 122

³¹ AFM-1 *Basic Aerospace Doctrine* 1992, 15

³² Robert Frank Futrell, *Ideas, Concepts, Doctrine. vol. 1: Basic Thinking in the United States Air Force, 1907-1960* (Maxwell Air Force Base: Air University Press, 2004), 1. Futrell opens his two-volume account of the Evolution of USAF doctrine by portraying Air Force leaders at a loss for words trying to communicate what the Air Force meant to national security. His quotations seem to capture the chasm between senior leaders raised in WWII and Korea and the realities of limited counter insurgency conflicts they were facing in Vietnam.

through these obstacles, it slowly incorporated descriptive analytical tools for thinking about airpower and security.

Before the Air Force became a separate service in 1947, it had designs to update its central doctrine, FM 100-20 *Command and Employment of Air Power*. Written in 1943, FM 100-20 is regarded as the Air Forces, “declaration of independence,” but by the end of WWII, it was recognized as out of date.³³ The Air Force’s primary issue is that FM 100-20 suggested an enduring interdependence with ground forces, and many in the Army Air Forces believed this was not always the case. There were times when airpower should act independently of ground power, and doctrine should reflect a heightened level of independence for the air component.³⁴

The first attempts at crafting Air Force doctrine, notably the 1953, 1954 and 1955 editions, emphasized the independent operation of the Air Force and were heavily reliant on the WWII strategic bombing campaigns as the sole source of “experience gained from the war.”³⁵ AFM 1-2 (1953) set the tone for early doctrinal development, defining the Air Force largely in terms of strategic capability, namely to deter aggression and repel it through three main missions: defense of the homeland, control of the air, and the strategic attack. 1954 and 1955 AFM’s clarified these points further in the growing context of nuclear arms and massive retaliation. The documents were important in themselves as the service’s initial attempt to capture and express its contributions to national security, but together, the first three versions of Air Force doctrine are largely beholden to the experience of WWII’s strategic bombing campaigns.³⁶ Deficient in intellectual insight, the early

³³ Futrell, *Ideas, Concepts, Doctrine*, vol. 1, 366

³⁴ Futrell, *Ideas, Concepts, Doctrine*, vol. 1, 366

³⁵ Robert Frank Futrell, *Ideas, Concepts, Doctrine. vol. 2: Basic Thinking in the United States Air Force, 1960-1984* (Maxwell Air Force Base: Air University Press, 2004), 711

³⁶ Futrell, *Ideas, Concept, Doctrine*, Vol. 2, 711

iterations of doctrine are relegated to discussing the menu of strategic capabilities Air Force technology provides with little insight as to why these capabilities are employed. As a result, “insipid” Air Force thinking drifted into irrelevancy as the character of modern war shifted from total to limited contexts.³⁷

The next three iterations of Air Force doctrine were published in 1964, 1979 and 1984, and stretched across a highly volatile time in Air Force history. Written in the age of limited war, these three documents reflect thinking prior to Rolling Thunder and after Linebacker II as well as the service’s institutional overhaul following Vietnam. A review of the professional assessments reveals a mixed reception. Futrell describes the 1964 edition of AFM 1-1 as a “radical departure” from previous doctrine, incorporating flexible responses and strategic considerations for the full spectrum of conflict.³⁸ Yet the 1964 doctrine betrays an almost sentimental attachment to AWPD-1, eschewing the lessons of the Korean War and emphasizing airpower’s destructive capability against “major urban/industrial areas of the enemy.”³⁹ The continuing emphasis on industrial web theory well into Vietnam perhaps explains how strategic bombing campaigns like ROLLING THUNDER, then under consideration at the behest of Air Force advocacy are considered in Low Intensity Conflict.⁴⁰

Futrell’s assessment of AFM 1-1 (1964) is more generous, owing to this edition’s broader view of the service, incorporating a wider range of *aerospace* power into its doctrinal roles and tenets.⁴¹ However modest these evolutionary advances were, the relative success of 1964’s AFM 1-1

³⁷ Earl H. Tilford, Jr., *What the Air Force Did In Vietnam and Why* (Maxwell Air Force Base: Air University Press, 1991), 38-39

³⁸ Futrell *Ideas, Concept, Doctrine*, Vol. 2, 716

³⁹ AFM 1, *USAF Basic Doctrine*, 14 August 1964, 1-1, 3-1.

⁴⁰ Mark Coldfelter, *The Limits of Airpower* (Lincoln, NE: University of Lincoln Press), 2006), 3

⁴¹ Futrell *Ideas, Concept, Doctrine*, Vol. II, 716

are diluted by the lack of progression contained in the 1971, 1975, and 1979 AFM 1-1 editions. Substantively, all three editions offer relatively minor changes from 1964.⁴² The 1971 version acknowledges counter-insurgency roles and lists strategic attack last among its core missions, superficially placing strategic attack in a less prominent doctrinal position. The misplaced faith in Operation LINEBACKER II, however, corrects for this “error,” and in either case, AWPD-1 and destructive capability enjoy an influential role in institutional thinking.⁴³

At the cusp of a new era in the Cold War, the 1979 manual greatly expanded its scope, attempting to capture the Air Force’s wide range of experiences since 1964.⁴⁴ 1979’s Chapter 6 charts how doctrine arrived in its current states, exploring the evolution of doctrine in response to changes in the character of American combat and security threats.⁴⁵ Murray asserts the document remained ahistorical in light of this, ignoring Vietnam.⁴⁶ This is perhaps an arguable point, but editorial decisions further undermine the professionalism and usefulness of the 1979 edition. In addition to superficial decisions about design (the 1979 edition is referred to as the “comic book” edition), each Air Force mission area and core competency is allocated two paragraphs consisting of six sentences on average. 1979 AFM 1-1’s slick graphics and vapid, ahistorical, and unconvincing observations were met with immediate derision among serious thinkers.⁴⁷ Today, the 1979 edition is largely considered the “nadir” of Air Force doctrine.⁴⁸

⁴² James Mowbray, “Air Force Doctrine Problems, 1926 - Present” *Air and Space Power Journal*, IX, no. 4 (Winter 1995), 10

⁴³ Mowbray, “Air Force Doctrinal Problems”, 10

⁴⁴ AMF 1-1 (1979)

⁴⁵ AFM 1-1 (1979), VI-1 - VI-6

⁴⁶ Williamson Murray, “A Tale of two doctrines,” 90

⁴⁷ Demobsky, “Meeting the Enduring Challenge”, 43

⁴⁸ Dennis M. Drew, “Two Decades in the Air Power Wilderness: Do We Know Where We Are?” *Air University Review* 37, no. 5 (September-October 1986): 12

Viewing these documents from afar, two patterns come into view. The first is positive. There is a relatively consistent expression of core airpower tenets. Centralization, versatility, and concentration, for example, are all identified as central elements to the successful use of airpower. Despite the consistency, there is a problem with how these tenets are explored with respect to AFM's own stated methodology. All of the documents establish experience as one of the irreducible elements of doctrine formulation. Yet the common refrain from leading airpower thinkers such as Watts, Clodfelter, Mowbray, and Drew indicates through 1979, doctrine does not appear to be all that responsive to experience, save for the Combined Bomber Offensive.⁴⁹

The second pattern informs the first. Without history as a solid foundation, Air Force doctrine assumes a mechanistic, dogmatic character in its assertions, and the doctrinal tenets lose some of their significance.⁵⁰ This is so because without history, there is no basis for theoretical connective tissue.⁵¹ Doctrinal tenets merely describe points on a graph, but not the curve. For leaders and practitioners, the tenets are mere islands of thought. There is only the ether between them and the entire doctrinal enterprise suffered from a lack of integrity and relevancy.

Beginning with the 1984 edition, Clodfelter and Drew advocated changes to doctrine that rested on a stronger evidentiary base to support doctrinal assertions. The results of this effort are evident in the

⁴⁹ Interview, Dennis Drew, 10 February, 2014; Also see the arguments made in Clodfelter's *The Limits of Airpower*, Watts's *The Foundations of US Air Doctrine: the Problem of Friction in War*, and Mowbray's "Air Force Doctrinal Problems".

⁵⁰ Dennis Drew, "Of Trees and Leaves", Air University Review (January-February 1992) accessed online, <http://www.airpower.maxwell.af.mil/airchronicles/aureview/1982/jan-feb/drew.html> 10 April, 2014.

⁵¹ Harold R. Winton, "An Imperfect Jewel: Military Theory and the Military Profession," *Journal of Strategic Studies* 6, vol. 36: 855. Winton's analysis of theory suggests that theory is formulated on explaining experienced phenomena, or history broadly speaking, and changes in the field of study.

document, the 1984 doctrine introduced a stronger evidentiary base, but the 1992 edition is perhaps AF doctrine's finest hour. In the developmental phase, the leadership of Air University managed to wrestle control of Basic doctrinal development from Air Staff and set to work creating an academically and theoretically coherent expression of airpower.⁵² Coming in at over 200 pages and in two volumes, the 1992 AFM is a staggering achievement in both scope and depth.

Attempting to bridge the distance between accessibility and depth, the authors of AFM 1-1 opted to present their manual in two values. Volume 1 presented doctrine in the same short, concise prose that characterizes previous editions. AFM 1-1's critical innovation, however, was the subtle inclusion of larger theoretical concepts incorporated throughout. The quick introduction of concepts was cross referenced to essays in vol. 2 that provided more complete examinations. Subjects as diverse as airpower and offensive operations, space control, and joint operations received in depth intellectual treatment in vol 2.

AFM 1-1 introduces Airmindedness into doctrine for the first time in this manner. Using the principles of war to establish a baseline for Air Force principles, AFM 1-1 vol 1. subtly introduces air-mindedness into the discussion to express where and how the service departs intellectually.⁵³

Volume 2, essay U expands on air-mindedness and its perspectives on the principles of war. The essay begins by appealing to authority, citing General Arnold's early use of the term in his 1945 post WWII report to the Secretary of War. In doing so, the essay states, "the study of aerospace warfare to a particular expertise and a distinctive point of view that Gen Henry H. ("Hap") Arnold termed air-mindedness."⁵⁴ In introducing air-mindedness as a new concept, the authors could not hope

⁵² Interview, Dennis Drew, 10 February, 2014.

⁵³ AFM 1-1 vol.1, *Basic Aerospace Doctrine*, 1992, 15

⁵⁴ AFM 1-1 vol.2, *Basic Aerospace Doctrine*, 1992, 209

to find a better advocate conceptualizing a service defining quality of thought. As previously discussed, however, Arnold's use of the term was more in line with the contemporaneous meaning of the term.⁵⁵

Clearly, the 1992 doctrinal rollout of airmindedness more or less hijacked General Arnold's use of the term. This point is important for its own sake. Numerous articles on the subject of airmindedness bite off on the deliberately confusing relationship between General Arnold's turn of phrase and the 1992 use of it. Major General Charles Dunlap, a leading service advocate for airmindedness, is guilty of misunderstanding the relationship. Dr. Dale Hayden's single-focus article also incorrectly attributes the concepts of airmindedness to General Arnold. Completing the closed loop of misunderstanding, the latest version of AFDD 1 (2011) brings airmindedness back into doctrine, but also the dubious connection to Hap Arnold (via Hayden's article). This is a point of clarification and accuracy with respect to the relationship to airmindedness and General Arnold.⁵⁶ Although the actual author is not identified in the essay, it is more accurate to attribute the modern use of airmindedness to Dennis Drew and the Air Force Historical Research Institute, rather than Arnold. Nevertheless, AFM 1-1's definition of the term modernizes the meaning of the term and cements its current place in the military lexicon.

In a larger sense, however, the history and evolution of airmindedness as a concept suggests AFM 1-1 still used the term appropriately. The 1992 manual may be guilty of hijacking the term, and subsequent

⁵⁵ See page 20 for the actual quote in context. Following AFM 1-1 (1992), a number of subsequent examinations on airmindedness similarly cite Arnold and this document as a testament to the influence of this idea on aerial combat. None of the articles researched for this thesis offered the actual passage from the report. When Arnold's words are put in the full context of the report, coming almost near the end during an appeal for greater corporation with industry, then the passage is decidedly less authoritative in light of how modern author's use airmindedness.

⁵⁶ Charles J. Dunlap Jr., "Air-Minded Considerations for Joint Counterinsurgency Doctrine." *Air and Space Power Journal* XXI, no. 4 (Winter 2007): 70

articles and the 2011 doctrine guilty of perpetuating myths regarding the history of its intellectual authority, but explicitly or implicitly, air-mindedness was about letting go of the old in favor of the new. In either case, air-mindedness is a product of its time. Arnold's understanding of the term was built on a legacy of social and cultural innovation coupled with a deep technological and industrial integration. For the practitioners, air-mindedness was the product of a quiet intellectual revolution within Air University circle. It too rejected an intellectual bankruptcy, turning away from ahistorical zealotry and presenting a reasoned perspective of airpower.

Air-mindedness: 1992 - Today

For all the intellectual success of AFM 1-1, its contributions did not exactly permeate the service, and subsequent editions fell back on more prescriptive expressions of airpower.⁵⁷ Consequently, Air-mindedness was left out of the subsequent 1997 and 2003 editions of doctrine.⁵⁸ Fortunately, it did not disappear from academic literature. Colonel Dennis Drew, a highly influential leader in doctrine and credited as the personal author of AFM 1 (1992), published a series of articles touching on air-mindedness directly and indirectly. Four articles published between 1993 and 2002 describe the Airman's perspective and both the importance and difficulty of expressing it to joint services.⁵⁹

Additional authors carried the torch for air-mindedness in the intervening years. Major General Charles Dunlap's 2009 article, "Do We

⁵⁷ Edward C. Mann, *Thunder and Lightning, Desert Storm and the Airpower Debates* (Maxwell Air Force Base: Air University Press, 1995), 18

⁵⁸ In an interview, Dennis Drew suggested among other things, the intellectual bent of the 1992 AFM 1 disappeared from subsequent editions of doctrine because the Office of Primary Responsibility (OPR) reverted from Air University back to Air Staff. Drew, Interview, 10 Feb, 2014.

⁵⁹ Drew's articles "The Essence of Airpower", "Airpower in the New World Order," "Desert Storm as a Symbol," and "100 years of Airpower" revisit the unique perspectives of Airmen in a joint world.

Need 'Airminded' Options for Afghanistan?" offers airmindedness as a service agnostic methodology for rethinking operations in ENDURING FREEDOM. Ground commanders, he argued, suffered from thinking too linearly, narrowly conceptualizing battle as attrition.⁶⁰ Eschewing what he characterized as "bullet-sponge" strategies, Dunlap suggests airmindedness deserves to compete in the marketplace of ideas, or military objectives, otherwise lives will continue to be held at risk by bankrupt policies. In this respect, his argument perhaps oversimplifies the land component's line of operations and expressed a little too strongly, echoes the works of Fuller and Liddell Hart emerging from the interwar years.

Dr. Dale Hayden's 2008 article, "Airmindedness," examines airmindedness more directly, assessing exactly what it means to the service.⁶¹ Unlike airpower tenets, airmindedness is less about implementation, but coherency. It binds Airmen and their actions under a common understanding of combat, broadly defined. It allows Airman to express action in terms of effects achieved, rather than actions taken.⁶² The article is short, but cuts right to the point, providing a working definition of airmindedness:

It is a global, strategic mind-set providing perspective through which the battlespace is not constrained by geography, distance, location, or time. The air-mindedness lens enables Airmen to think about conflict in which force-on-force and armies in the field are only one element. It implies the ability to influence the links between adversary materiel and moral strength. Although Airmen rarely claim to target the enemy's will, they perceive a direct connection

⁶⁰ Charles Dunlap, "Air-Minded Considerations for Joint Counterinsurgency Doctrine." *Air and Space Power Journal* XXI, no. 4 (Winter 2007): 70.

⁶¹ Dale L. Hayden, "Airmindedness." *Air and Space Power Journal* XXII, no. 4 (Winter 2008): 44.

⁶² Hayden, "Airmindedness," 44.

between his physical capacity and desire to continue the fight.⁶³

This definition captures a broad array of phenomena circling around air doctrine since 1953. This definition holds all levels of warfare into account, suggesting air forces have tactical, operational and strategic utility, but they can

and should seek opportunities to look beyond the immediate exigencies of battle and offer victory through dislocation of an adversary's social, military, and economic coherence.

The 2011 edition of AFDD 1 contains the most recent iteration of airmindedness.

Working from

Hayden's definition, it explores airmindedness as a perspective, offering a different take than the 1992 AFM 1.⁶⁴ Whereas airmindedness was originally expressed as an Airman's reflection on the principles of war, the 2011 definition betrays a greater sense of confidence, moving beyond the principles of war and establishing an independent, "necessarily unique" framework.⁶⁵

- **Control of the vertical dimension is generally a necessary precondition for control of the surface.**
- **Airpower is an inherently strategic force.**
- **Airpower can exploit the principles of mass and maneuver simultaneously to a far greater extent than surface forces.**
- **Airpower can apply force against many facets of enemy power.**
- **Airpower's inherent speed, range, and flexibility combine to make it one of the most versatile components of military power.**
- **Airpower results from the effective integration of capabilities, people, weapons, bases, logistics, and all supporting infrastructure.**
- **The choice of appropriate capabilities is a key aspect in the realization of airpower.**
- **Supporting bases with their people, systems, and facilities are essential to launch, recovery, and sustainment of Air Force forces.**
- **Airpower's unique characteristics necessitate that it be centrally controlled by Airmen.**

FIGURE 2 AIRMINDED PERSPECTIVES. SOURCE AFDD 1 (2011)

⁶³ Hayden, "Airmindedness," 44.

⁶⁴ AFDD 1, *Air Force Basic Doctrine*, 2011, 18.

⁶⁵ AFDD 1, *Air Force Basic Doctrine*, 2011, 18.

AFDD 1 further explains what air-mindedness perspectives are by categorizing them in nine tightly worded statements. The short descriptions are an unfortunate development as the concept assumes a more descriptive character. Although it is clearly meant to address Drew's long standing concern about the difficulty of communicating to non-Airmen the air arm's institutional perspective, the checklist format nevertheless over-simplifies what is a very complicated subject. This format does little to distinguish it from the tenets of airpower. There is some promise in this approach, however, in that it makes the connections between perspective and implementation more tangible.

2011's AFDD 1 is where air-mindedness currently rests in Air Force literature. It has evolved on the margins, but at its core, it continues to be the expression of a unique perspective enabled by the service's unique capabilities. Importantly, it suggests the perspective is independent of a specific set of technologies. Whether effects are supplied through air, space or cyber, air-mindedness is only concerned with the impacts they have on tactical, operational and strategic objectives.

Air-mindedness and the Tenets of Airpower.

... Airpower is both an abstraction and an ever-dynamic particular historical reality.

- Colin S. Gray

The preceding discussion incorporated a wide range of phenomena to explain all three major facets of air-mindedness: social, cultural, and militant. The transitions from interwar art movements to Lindbergh to Hap Arnold to AFDD - 1 have perhaps been jarring, but necessary to understand what air-mindedness means, but also how an air service born in the social and cultural upheaval of the interwar years is likely to institutionalize newness over "old men" and "their stupid wars." This chapter now begins to steer this essay back to the primary issue.

Airmindedness has a history perhaps longer than the service, or even the aircraft and doctrinal acknowledgement of these antecedents are useful to formulate a more complete articulation of the service's contribution to war.

To explore the antecedents of airmindedness, this thesis attempts to find common intellectual threads extant in two different contexts. A common set of variables is therefore needed to ensure comparisons occur according to like terms. The most obvious choice is to measure Union cavalry against the modern definitions of airmindedness. That examination brings additional clarity to airmindedness, but lacks an observable quality useful for comparison. AFM 1-1 (1992) acknowledges the difficulty inherent in conveying airmindedness as a perspective to non-Airman.⁶⁶ To assist in the translation, the authors of the manual's airmindedness essay use the principles of war as a common reference point to articulate how airminded senior leaders implement these perspectives. This essay takes advice from the authors of AFM 1-1 and uses a similar methodology to enable its examination. As a reflection of airmindedness, using the doctrinal tenets of airpower as an intermediary offers a promising avenue for exploring airmindedness expressed as implementation.



FIGURE 3 - TENETS OF AIRPOWER SOURCE: AFDD 1 (2011)

Using the tenets of airpower as a surrogate for airmindedness, action and implementation of forces becomes the basis for comparison. The discussions of airmindedness contained in both the 1992 AFM 1-1 and the 2011 AFDD 1 support this approximation. AFM 1-1 (1992) frames airmindedness as a unique “reassessment on the principles of war.,” expanding air-centric interpretations of each principle of war in

⁶⁶ AFM 1-1, *Basic Aerospace Doctrine*, vol. 2, 1992, 209

detail.⁶⁷ Coming from the opposite direction, AFDD 1 (2011) characterizes the tenets of airpower as an air-centric extension of the principles of war.⁶⁸ These two editions offer overlapping examinations through the principles of war. Together, they establish a strong connection between the perspectives of airmindedness and the implementation of the tenets of airpower.

To progress in this vein, it is useful to think of airmindedness as one side of the airpower coin. On the other side are the tenets of airpower as expressed in service doctrine (see Figure 1).⁶⁹ AFDD-1 defines these tenets as refining guidance to the application of airpower, shaped through time and by experience in war.⁷⁰ In doctrine then, application (and by extension, theories/strategies of deterrence, compellance, and coercion, for example) is connected through an explicit and implicit relationship with airpower's guiding tenets. This connection also translates airmindedness and perspective to tenets and action, a decidedly more observable set of phenomena that makes this essay's comparisons more accessible. The remainder of this essay and its conclusions rests on this connection.

The AFDD-1 tenets support, or are supported by, the general principles of war and are, in a sense, timeless.⁷¹ Thus, tenets form the common points for our analysis and comparison of airpower and cavalry. It is important, however, to recognize up front there is a limit to how far one can stretch this analogy across time and context and still produce a valid connection. There is, in short, a noted qualitative loss in the intellectual conversion of AFDD-1 tenets from modern airpower to

⁶⁷ AFM 1 vol 1. *Aerospace Doctrine*, 1992, 15. See AFM 1 vol 2. (1992), Essay U, "Airmindedness: An Example," 209 for a thorough discussion of airminded perspectives on each of the eight principles of war.

⁶⁸ AFDD 1, *Air Force Basic Doctrine*, 2011, 37

⁶⁹ AFDD 1, *Air Force Basic Doctrine*, 2011, 37

⁷⁰ AFDD 1, *Air Force Basic Doctrine*, 2011, 37

⁷¹ AFDD 1, *Air Force Basic Doctrine*, 2011, 39

industrial age cavalry and back. To address this, the focus of this paper balances its examination between tenets that are most central to the identity of the Air Force against concepts easily applied across time and domain. The discussion is of little use to the reader if the chosen tenets are not central to the Air Force, or are too easily applied to other service capabilities. To that end, Centralized Command/Decentralized Execution, Flexibility, and Concentration stand above the others as concepts that, when compared across time and function, serve as examples writ large of timeless Air Force principles. What follows is a review of doctrinal and historical understanding of these tenets to establish a standard meaning for comparison.

Centralized Command/Decentralized Execution

Centralized control is commanding airpower and should be accomplished by an Airman at the component commander level who maintains a broad focus on the JFC's objectives to direct, integrate, prioritize, plan, coordinate, and assess ...

... Decentralized execution is the delegation of authority to designated lower-level commanders and other tactical-level decision makers to achieve effective span of control and to foster disciplined initiative and tactical flexibility.

- AFDD-1

The Air Force places centralized command, decentralized execution as a cornerstone to the institution. AFDD 1 identifies Centralized Command/Decentralized execution as the “master tenet,” the “keystone,” for successful implementation of all other tenets.⁷² The service’s history is practically defined by observance to this tenet and the successes and failures resulting from its proper implementation. The decisive contributions of airpower on the St. Mihiel salient was due in part to

⁷² AFDD 1, Air Force Basic Doctrine, 2011, 37

Mitchell's organization of forces under CCDE's principles.⁷³ Breaking away from penny packeted structures, Mitchell commanded a centralized organization of 1500 aircraft.⁷⁴ The difference in organization was reflected in the operational impact of the campaign. Mitchell's forces quickly established air dominance, striking a strategic blow to the Luftwaffe, and supporting the land component's rout of German defenses in under four days. The successes of air operations in St. Mihiel are largely considered the fruits of CCDE, inaugurating an institutional rallying point for subsequent operations.

The institution's faith and adherence to CCDE was again decisive in North Africa. Penny packeted American Air Forces were suffering losses at a rate much higher than their centrally organized British counterparts. Worse yet, through this dependent, subordinate command structure, the Americans were unable to control the air nor effectively defend ground troops. To address the high cost of operations and realize battlefield efficiencies through economies of scale, American and British reorganized their air assets under a single theater command.⁷⁵

St. Mihiel's and Operation TORCH's lessons of centralized command loom large in the service and create intellectual incentive to favor centralization.⁷⁶ A more nuanced understanding of this tenet, however, suggests getting the most out of air assets requires a continual rebalancing of authority against decentralized execution. In the larger context of American military history, not just airpower history, balancing CCDE has been a central command issue. Lt Col Clint Hinote's

⁷³ Mauer Mauer, ed., *The U.S. Air Service in World War I*, vol. 3, Headquarters Air Force, Washington DC, 1978), 51, 62

⁷⁴ Mauer, *U.S. Air Service in World War I*, vol. 3, 5, 57

⁷⁵ Richard Overy, *The Air War 1939 - 1945* (Washington D.C.: Potomac Books, Inc.), 69

⁷⁶ Clint Hinote, "Centralized Command and Decentralized Execution: A Catchphrase in Crisis?" Air Force Research Institute Report 2009-1 (Maxwell Air Force Base: Air Force Research Institute, 2009), 69. Hinote offers DESERT STORM and ALLIED FORCE as more recent examples of how successes have seared centralization into the minds of Airmen.

comprehensive examination of CCDE and airpower reaches back to the Civil War, examining Robert E. Lee's campaign at Gettysburg, concluding over-centralization of forces choked initiative and stagnated maneuvers, contributing to his defeat.⁷⁷

Hinote's analysis of Lee is a prelude to examining CCDE of air assets in Operations ENDURING/IRAQI FREEDOM. In his analysis, he lays out the history of CCDE carefully to reveal CCDE as a tenet is not a substitute for intelligent appreciation for the character of war.⁷⁸ He suggests airpower's history has favored centralization, but this tenet must be re-assessed with every conflict. Moreover, he suggests the knee-jerk reaction to centralize air operations have been detrimental in the context of southwest Asia. To better address the character of these wars, he concludes, more decentralized structure is needed to ensure tactical responsiveness.⁷⁹ The tensions inherent in CCDE are healthy and competent Airmen should embrace them, but as Hinote alludes, Centralization is often treated as a panacea to air operations.

The reality of CCDE is more dynamic. From St. Mihiel to TORCH to Afghanistan, the final balance of CCDE is a dependent variable and where it rests has been in constant flux throughout history. As AFDD-1's first tenet, the balance of CCDE is an issue central to the idea of airpower in joint operations, and in the minds of most Airmen a very important balance to resolve.⁸⁰ Not only does it explicitly require airpower to be led by Airmen, but AFDD further asserts this tenet also serves as an important pre-condition for subsequent tenets to include flexibility and versatility as well as concentration of effort and economy of force.⁸¹

⁷⁷ Hinote, "Catchphrase in Crisis?" 4

⁷⁸ Hinote, "Catchphrase in Crisis?" 1

⁷⁹ Hinote, "Catchphrase in Crisis?" 69

⁸⁰ AFDD 1, *Air Force Basic Doctrine*, 2011, 39

⁸¹ AFDD 1, *Air Force Basic Doctrine*, 2011, 39

The differences between Close Air Support (CAS) and strategic attack illustrate the balance tenet. Strategic Attack missions typically call upon low density high demand (bombers, tankers, space, ISR and escort fighters to name a few) from across the globe to act in concert under a unifying command element to ensure mission success. To ensure synchronicity, the planning and authorities of these strategic missions are centrally controlled. Once the order has been given through the ATO, however, mission accomplishment is generally within the hands of the mission commander, and flexibility is defined by theatre Rules of Engagement (ROE) to tailor decentralization as needed.

At the tactical level, Close Air Support demands a higher degree of decentralization of both command and execution. To address dynamic battlefield conditions, the Air Force maintains a cascading command and control structure from strategic to tactical via the Theater Air Control Structure (TACS). Through this structure, command authorities over weapons effects are delegated to the tactical level and Joint Terminal Area Controllers (JTAC) are charged with establishing targeting and engagement priorities to meet the supported commander's intent. From a traditional theater perspective, this delegation of authority is arguably less efficient, but where air forces are primarily concerned with tactical effect, decentralization is more effective.⁸²

This tenet is more than an organizational concept. It is a fundamental point of view for Airmen. Strategic Attack and Close Air Support represent both the dual character of CCDE, but also how the Air Force as an institution realizes this tenet. CCDE is ingrained in Airman from the earliest stages of their careers, and the Air Force writ large incorporates this concept as part of its organizational culture. It puts decision-making authority at the lowest level possible and provides responsive force structures able to take decisive action quickly and to

⁸² Hinote, "Catchphrase in Crisis", 69

great effect in the achievement of the objective. In a domain where enemies are potentially closing on each other at over twice the speed of sound, the distance from input to decision to action is exceedingly short and decisions must be pushed to the lowest level possible. The speed with which Airpower dispenses violence necessitates it.

CCDE becomes more important at the operational level, however, where the disparity between force requirement and force availability and capability are not evenly matched. An improper balance may result in the inefficient sequestering of force and, as Hinote remarks, a proper organizational CCDE balance for airpower between the joint components and within the air component itself is crucial for maintaining an efficient, responsive air component at the theatre level (as a note of comparison, Wilson's area of operations in Alabama and Western Georgia is roughly equal to the areas covered by modern day Kosovo, Albania, Serbia and Bosnia and Herzegovina).⁸³ By extension, we can also see how an air-minded individual would be able to most effectively manage and advocate for the use of airpower at this level. Thus, the proper application of CCDE and airpower realizes consequences not only at the tactical level but at the operational and strategic levels.

Concentration

Airmen should guard against the inadvertent dilution of airpower effects resulting from high demand ...

- AFDD-1

Considering the guidelines established for choosing tenets to include in this study, Concentration may not appear to be central to Air Force identity or represent a service-unique capability. To the casual military reader, Concentration may even appear repetitive or even

⁸³ Hinote, "Catchphrase in Crisis", 69

tautological in light of its foundation in the principle of Mass. Mass and Concentration as concepts are perhaps easily confused, but examination of both joint and service doctrines reveal a distinction in how the Air Force observes Concentration in contrast to how joint doctrine and sister services realize Mass.

Joint Publication (JP) 3 defines mass as the concentration of the combat power “at the most advantageous place and time to produce decisive results.”⁸⁴ Conceptual derivatives of Mass can be found in Army and Marine publications that guide the execution of their service missions. In this case, the concept is not unique necessarily to the Air Force, but due to technological development, the Air Force envisions important aspects of Concentration in ways distinct from other services. Between the land and air components, there is a slight difference in how concentration is achieved. In Marine Corps doctrine, concentration is a desired condition in the conduct of maneuver warfare, bringing together combined arms action at the decisive point to support flanking or envelopment operations.⁸⁵ Army doctrine emphasizes mass and concentration under similar maneuver conditions.⁸⁶

The Air Force takes a more nuanced approach to this tenet, understanding Concentration as both an element of firepower and of purpose.⁸⁷ The 1992 edition concerns itself primarily with the former, highlighting air-minded perspectives of the objective. Because airpower is flexible, it argues, without a clear objective, it is likely to be implemented in a disorganized manner, servicing many requests, but achieving little.⁸⁸ Airpower is best used when it can be concentrated and consistently

⁸⁴ Joint Publication (JP) 3, *Joint Operations*, 11 August, 2011, A-2

⁸⁵ Marine Corps Doctrine Publication (MCDP) 1, *Warfighting*, 20 June, 1997, 10

⁸⁶ Army Doctrine Publication (ADP) 1, *The Army*, September 2012, 3-4

⁸⁷ AFDD 1, *Air Force Basic Doctrine*, 2011, 41; the 2011 edition discusses concentration of effect while the 1992 edition emphasizes concentration of purpose.

⁸⁸ AFM 1-1 *Basic Aerospace Doctrine*, 1992, 8.

applied against the priority objective, which may exist at the strategic, operational and tactical level of battle.

Airpower history offers examples of air component commanders paying a price for violating this tenet at all levels. At the strategic level, Richard Overy suggests the presence of airpower in North Africa in 1943 split the Luftwaffe concentration of effort between offensive operations in Russia and defending territory in Africa. The Germans diverted air resources from the eastern front to bolster the southern front. In the process, the Luftwaffe was left with a force structure incapable of achieving decisive results in either theater.⁸⁹

In the context of Germany's strategic deficiency, the Allied air forces in Africa cultivated an opposing doctrine of concentration at the tactical level. After the coalition air forces in Africa centralized their command structure and began conducting independent operations, they focused their efforts not on counter land targets, as the land component insisted, but on air dominance. CAS and point defense of land forces continues but was enhanced by a greater allocation of sorties toward Offensive Counter Air. Bombers and fighters were concentrated against Luftwaffe bases and air supply routes. The concentration of airpower toward theater air dominance denied the Afrika Korps a critical element in its combined arms doctrine, creating decisive asymmetries for the land component in two distinct ways; allied commanders could employ tactical airpower without having to worry about it in return, and Allied air power severely dislocated German air-centric logistic lines, reducing shipment of supplies to 50% below required levels of sustainment.⁹⁰

The Germans' strategic choice sets the stage for a discussion of Concentration and airpower. There are a number of imponderables at the strategic level of war that shape the quality and character of

⁸⁹ Overy, *The Air War*, 66

⁹⁰ Phillip S. Meilinger, *Airwar: Theory and Practice* (Portland, OR: Cass Publishing), 138-139

Concentration of purpose. Overy's interpretation of strategic dilution and its impact is no doubt dependent on a number of other variables (Allied relationship with Russia, the state of force readiness in Western Europe, the Italian dependence on German assistance etc...) beyond this essay's scope. As a starting point, however, the impact of the Luftwaffe's strategic decision to dilute broadly define the importance of concentration of purpose.

The Allied experience in the South Pacific is perhaps more instructive because the outcome of the Japanese and American campaigns rests in part to decisions they both made at the operational level of war with respect to concentration of purpose. Initially, Japanese naval aviation doctrine centered on operational concentration.⁹¹ The decisive sequence of successes during the offensive phase of the Japanese eastward expansion, to include the attack on Pearl Harbor, were made possible by this doctrine.⁹² Opting to defend the entire perimeter of the Co-prosperity sphere, the Japanese relied on naval carrier aviation to move along interior lines, enabling a mobile defense intended to converge on the Allied point of attack. The plan rested on reliable lines of communication, superior intelligence, and unrealistic estimates about American operational mobility and objectives. The Japanese overestimation of maneuver combined with an under-appreciation for the distances they tried to defend denied Yamamoto the ability to execute his flexible, concentrated defensive plans.⁹³

Alternatively, the Americans employed an opposing "island hopping" operational campaign concentrating airpower toward less defended parts of the Japanese perimeter.⁹⁴ The concentration of combat

⁹¹ Mark R. Peattie, Sunburst, *The Rise of Japanese Naval Air Power, 1909-1941* (Annapolis, MD: Naval Institute Press, 2001), 148

⁹² Peattie, *Sunburst*, 152

⁹³ Peattie, *Sunburst*, 191

⁹⁴ Thomas E. Griffith Jr, *MacArthur's Airman, General George C. Kenney and the War in the Southwest Pacific* (Lawrence, KS: University of Kansas Press. 1998),

airpower on lesser defended objectives denied the Japanese the benefit of interior lines, negating their mobile defense. Additionally, the concentration of purpose was essential to aligning aerial supply operations toward a purposeful set of objectives, maximizing operational maneuver across the Pacific.

As evidenced by the relative successes and failures of Allied and

Axis air forces, Concentration of airpower's purpose is a critical component to success or failure.⁹⁵ This is true for land forces as much as airpower, however. Discussions of airpower, interior lines and maneuver toward an objective does not distinguish between airminded perspectives on concentration from the land component's doctrinal definitions. Admittedly, the Air Force's understanding of concentration of purpose is not fundamentally different from the Army or Marine Corps understanding with regard to maneuver.

Where airpower distinguishes itself is in its understanding of the concentration

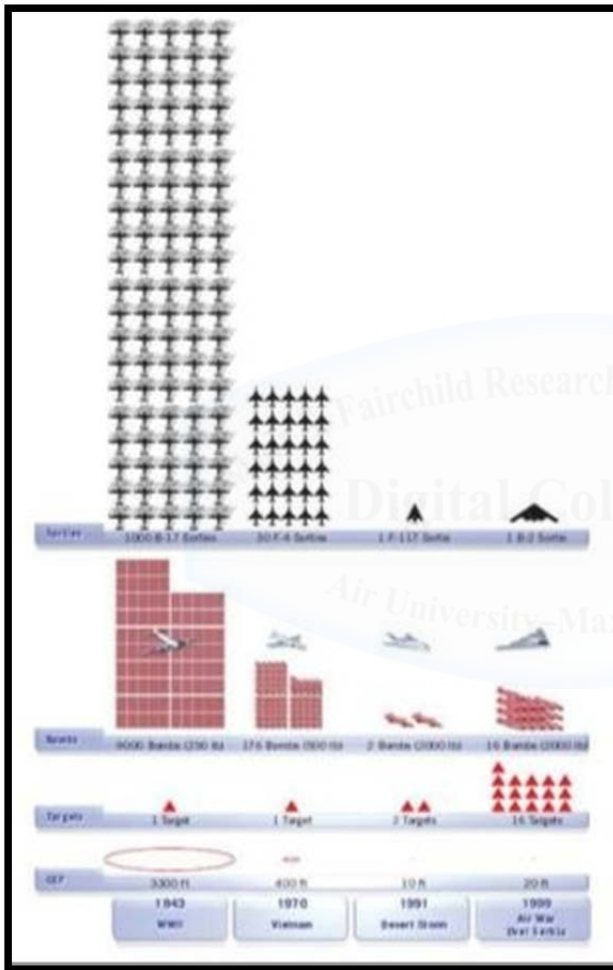


FIGURE 4 - TECHNOLOGY AND CONCENTRATION OF EFFECT. SOURCE: DEPTULA, "EFFECTS BASED OPERATIONS"

⁹⁵ Looking at the same tenet within the same air force within the same campaign is illustrative. The Japanese dilution of effort in the defensive phase of their campaign is held in sharp relief by the successes of the offensive phase. At the start of the Japanese offensive campaign in 1940, concentration of purpose and forces were a critical component to their success.

of effects.⁹⁶ Unlike the other tenets discussed, it is technological advancement that has allowed the Air Force to develop a unique understanding of concentration. Early application of airpower in WW I and WWII required concentrating hundreds of aircraft under a single commander to meet objectives. As depicted in figure 2, however, the relationship between target to aircraft inverted from aircraft per target to target per aircraft with the rise of stealth and precision munitions.⁹⁷ Leveraging this technology, the Air Force sees concentration of firepower not as the result of combined arms maneuver, but as embodied by the weapon system itself.

Between purpose and firepower, the Air Force understands concentration of force is required at both the tactical and operational levels and is greatly enhanced by technology. Combined with flexibility and versatility, concentration provides a force that can come together from highly dispersed positions, mass effects for the exact amount of time it is needed (measured in minutes), and dispersed once the desired effects are achieved.

Flexibility and Versatility

Flexibility allows airpower to shift from one campaign objective to another, quickly and decisively; to “go downtown” on one sortie, then hit fielded enemy forces the next ... Versatility is the ability to employ airpower effectively at the strategic, operational, and tactical levels of warfare and provide a wide variety of tasks in concert with other joint force elements.

- AFDD-1

If Airmen know one thing, it is flexibility is the key to airpower. Interestingly enough, few know Douhet coined the phrase and flexibility

⁹⁶ Fredrick L. Bier, *50 Questions*, 20

⁹⁷ David A. Deptula, *Effect Based Operations: Change in the Nature of Warfare*. Aerospace Education Foundation Defense and Airpower Series (Arlington, VA: Aerospace Education Foundation, 2001), 8

has been a central tenet since airpower's inception. The ability to move freely and rapidly apply effects across the battlespace is not necessarily unique to airpower. The ability to make dramatic shifts in focus, location, intent and objective from day to day, however, is unique to airpower. The ability to wield this flexibility and versatility over and above the other services is a central element to Air Force doctrine and indeed what makes airpower a national treasure.⁹⁸

Operation DESERT STORM provides an excellent example of flexibility. After the strategic impact of the Iraqi Scud operations was understood, coalition airpower was rapidly reapportioned and F-15E Strike Eagle and the E-8 JSTARS were re-assigned missions from pre-planned interdiction on one day to Time Sensitive Targeting "Scud Hunt" missions the next.⁹⁹ As Scud operations slowed, air assets were again re-assigned tactical "tank plinking" missions to reduce Iraqi land forces to achieve desired military objectives.¹⁰⁰ The flexible nature of Air Force operations allowed the JFACC to swing his most capable assets from targets in urban Baghdad to the vast open terrain of the western desert.

Versatility depicts airpower as a Swiss army knife, able to conduct a wide variety of missions at the Strategic, Operational, and Tactical levels in either a supporting or supported role.¹⁰¹ Because the literature regarding airpower and versatility tends to focus on weapons systems, it is perhaps the easiest to understand of all the tenets.¹⁰² October 2001 images of a B-52 providing Close Air Support to horse-mounted Special Forces was a culturally defining moment for the Air Force as a service, as

⁹⁸ Mann, *Thunder and Lightning*, 191

⁹⁹ Fredrick L. Bier, *50 Questions Every Airman Can Answer* (Maxwell Air Force Base: Air University Press, 2000), 20

¹⁰⁰ John Andreas Olsen, *A History of Air Warfare*. 1st ed (Washington D.C: Potomac Books, 2010), 250

¹⁰¹ Fredrick L. Bier, *50 Questions*, 20

¹⁰² AFDD 1, *Air Force Basic Doctrine*, 2011, 38

well as a critical battlefield capability.¹⁰³ Airpower's most strategic assets, designed to deliver decisive nuclear capability in true apocalyptic fashion to our military and political rivals, were now rapidly delivering conventional munitions half way around the world to defeat a transnational organization and have become a model for versatile weapon system employment.

It is important to distinguish between the contributions of technology when considering flexibility and versatility and the actual idea behind flexibility and versatility. The tenet is not simply the consequence of advancements in precision and range. Rather, it is the result of air minded leaders leveraging the technology to fulfill the diverse mission sets laid out by Mitchell in 1925.¹⁰⁴ General Quesada's innovative employment of bombers and escort fighters in WWII struck a remarkable balance between the mission sets that IX Tactical Command assets were designed for versus the battlefield requirements of the land component. Eight Air Force's B-17 and B-24 bombers were routinely tasked against both long range interdiction targets and Close Air Support (CAS) while Quesada's fighters provided both Defensive Counter Air, Reconnaissance and CAS missions.¹⁰⁵ Furthermore, the versatility of airpower, established by Mitchell and demonstrated by Quesada, is relied upon by theater commanders to this day. Citing the previous example of B-52s in Afghanistan, the requirements for airpower at the beginning of Operation ENDURING FREEDOM demanded flexible thinking regarding weaponeering, tactical command and control, distance and speed to overcome "the tyranny of distance."¹⁰⁶

The line between flexibility and versatility is clear, but the concepts are easily confused. The body of literature on the subject does not help

¹⁰³ Olsen, *A History of Air Warfare*, 263

¹⁰⁴ Mitchell, *Winged Defense*, 127

¹⁰⁵ Thomas Alexander Hughes, *OVERLORD* (New York, NY, 1995), 212

¹⁰⁶ Olsen, *History of Air Warfare*, 280

matters much as the thinking that goes to flexibility seems to assimilate versatility as part of the discussion. To distinguish the two, it is helpful to frame the conversation this way: The Air Force is flexible; the B-52 (or space, or cyber) is versatile.

Combined, flexibility and versatility describe airpower as a force able to take full advantage of its speed to concentrate on a myriad of objectives throughout the range of military operations. As concepts, versatility and flexibility are perhaps dependent variables to CCDE. The extent to which a subordinate commander has Flexibility/Versatility is a direct result of the delegation of authority afforded him or her by higher guidance. With regard to airpower, this is essential to note as the wings of efficient/progressive airpower provided by flexibility and versatility may unnecessarily be clipped by restrictive and unbalanced CCDE authorities.

Conclusion

The inherent flexibility of air power is its greatest asset. This flexibility makes it possible to employ the whole weight of the available air power against selected areas in turn; such concentrated use of the air striking force is a battle winning factor of the first importance. Control of the available air power must be centralized and command must be exercised through the Air Force commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited.

- FM 100-20 Command and Employment of Air Power

This thesis narrows its focus to CCDE, Concentration, and flexibility because of their central importance to airpower and their ability to translate well into another form of combat. Moreover, as FM 100-20 indicates, Flexibility, CCDE and Concentration have enjoyed an elastic, yet inseparable relationship established during airpower's

formative experiences.¹⁰⁷ Consequently, from this baseline of understanding of doctrine, application, and the relationships between them, we can begin to derive meaningful comparisons as we prepare to size up airmindedness in vastly dissimilar contexts.

As FM 100-20 suggests, there is a strong connection between flexibility, CCDE and concentration. In that sense, looking at all three tenets broadly offers some useful observations. First, while there is a clear connection between the three tenets discussed, it does not imply that connection is realized as an automatic chain reaction. As has been argued, CCDE is the irreducible element from which all the other tenets develop, but it does not mean that concentration and flexibility/versatility follow without continued effort. As the Japanese soon realized in WWII, their centralized naval air command did little to achieve concentration of purpose.

Second, even in cases where all senior leaders attempt to adhere to all three tenets, the proper application of airpower does not result from mechanistic execution. AFDD 1 (2011) suggests the proper application of airpower results when practitioners correctly orchestrate and balance the simultaneous implementation of all tenets. Operation DESERT STORM is perhaps the truest positive and negative expression of this assertion. Edward Mann's examination of airpower theory in the Gulf War suggests a critical difference between the coalition and Iraqi air forces was a more sophisticated understanding and orchestration of doctrinal tenets. Iraqi doctrine, such as it was, employed airpower in small bursts of tactical and strategic missions envisioned in isolation of each other.¹⁰⁸ The Iraqis' simple conception and execution of airpower could not, and did not, withstand the full weight of an air force executing all facets of its doctrine simultaneously.

¹⁰⁷ United States War Department Field Manual (FM) 100-20, *Command and Employment of Airpower*, 21 July, 1942, 1

¹⁰⁸ Mann, *Thunder and Lightning*, 20

As Mann asserts, concepts (and perspectives), “do matter.”¹⁰⁹ The sophisticated balance and implementation of tenets can only be achieved by an air-minded individual. As previously argued, air-mindedness as a unique and foundational perspective on war, surrounds the space in and between the tenets establishing an intellectual coherency. In that way, air-mindedness is what makes the Air Force unique. The other services enjoy some level of airpower, but only the Air Force has air-mindedness. It is the doctrinal lens through which the service looks at the world and how it differentiates its contributions from other services and other forms of air power.

Thus, the full examination of air-mindedness and its development is essential to understanding the service. Born in the aftermath of WWI, air-mindedness quickly entered the existing social and cultural slipstream, offering change where change was demanded. Today doctrine expressed air-mindedness as a perspective on warfare. This modern usage does not agree with its original meaning, but to assert doctrinal air-mindedness was hijacked from its original meaning misses the point. At its core, air-mindedness is a mechanism for alignment. Aviation pioneers, industry leaders, and even Hap Arnold used it to describe complementing air-centric developments in culture, society and industry. Although relegated to military discussions, modern usage of air-mindedness offers similar utility as an alignment mechanism, placing the multitude of airpower tenets under a coherent flow of thought.

¹⁰⁹ Mann, *Thunder and Lightning*, 23

Chapter 2: Major General James H. Wilson: America's First Airman

General James H. Wilson enjoyed a distinguished career during the Civil War. His meteoric rise — he climbed from second lieutenant to major general in under four years — puts him in exclusive company. Civil War cavalry leaders such as Custer, Forrest and Sheridan were men of similar accomplishment and are well known, yet there is comparatively little written about Wilson. He mostly appears in historical literature in a supporting role, as a divisional and regimental commander under more prominent generals. Within the subset of literature examining Civil War cavalry, he is singled out by authors mostly because Wilson's Alabama raid was at the time, and continues to be, the largest cavalry raid in the history of western civilization.¹ Other areas of Wilson's service, including his notable tenure as Chief of the Cavalry Bureau, also get some attention because of his early adoption of the Spencer repeating carbine rifle. While these examinations are critical, there are few discussions of Wilson's accomplishments in total.²

To be sure, as individual feats, Wilson's accomplishments are impressive. The fullness of these contributions, however, comes into view when examined within the strategic context of the Civil War. The position of the North at the outset of the war shaped its military options on a grand level, but also shaped the scope and purpose of operational campaigns. This chapter examines key historical moments and decisions that shaped the contours of the war so Wilson's innovations can be viewed in proper perspective. Only then can his campaign in Alabama be defined not simply as a tactical success, but as a manifestation of

¹ Gregory J. W. Urwin, *The United States Cavalry: An Illustrated History* (New York, N.Y: Blandford Press ; Distributed in the U.S. by Sterling Pub. Co, 1983), 107

² Edward G. Longacre's biography of Wilson, *From Union Stars to Top Hat*, is a notable exception. He documents Wilson's life and military leadership in its entirety but is more useful for understanding Wilson as a man driven by an insatiable ego. Wilson military accomplishments are detailed, but not necessarily examined in aggregate.

General Winfield Scott's strategic Anaconda Plan. This chapter also examines Wilson's contributions inside the institutional army and cavalry force. Wilson had to contend with a number of institutional issues that governed the use and efficacy of cavalry in April, 1861. To realize his eventual successes in his signature Alabama raid at the end of the war, Wilson addressed political hurdles, bureaucratic inertia, special interest groups, and conservative leadership. These early obstacles are separated from his raid by months or years but are essential to shaping the force Wilson took into battle. This bottom-up perspective is essential to understanding the evolution of his ideas and how these ideas matter to the tactical and organizational level of warfare.

These two perspectives and patterns of thought converge at the moment Wilson crossed the Tennessee River to embark on his raid into Alabama. Because of the need to conduct a strategic offensive through indirect ways, Wilson developed a force, as a means capable of delivering these strategic effects. In doing so, Wilson articulated a new perspective of battle and organization familiar to today's Airman.

Strategic estimate and state of Union Cavalry 1861 - 1863

Immediately following the Confederacy's attack on Fort Sumter, the strategic position between the North and the South was clear. Confederate leadership reasoned international support and trade was of vital national interest to the lost cause, but support was only likely to come if the Confederacy maintained a passive stance toward its independence. It thus adopted a strategic defense to realize global support. Consequently, this forced the North to assume an aggressive strategic offensive to secure the Union in accordance with Constitutional

imperatives.³ In practice, restoring the Union was a daunting task for Federal strategists.

Geography was highly influential to strategic formulations, as the scope of the operation was unprecedented for

American generals. The distances involved in conquering the American

Southeast were vast.⁴ This placed strategic value on lines of communication providing paths into and through the South. Given the North's offensive stance, the relative lack of transportation networks in the South exacerbated the issue further. Measured in terms of miles of rails and roads, the comparative dearth of southern infrastructure is often cited as a strategic advantage for the industrial north.⁵ This advantage was decisive in the long run, but in the immediate aftermath of Fort Sumter, a lack of transportation infrastructure made invasion difficult to contemplate.⁶

The state of the Union's Army did not improve matters. Both Scott and McClellan observed the size of the Army was insufficient to match

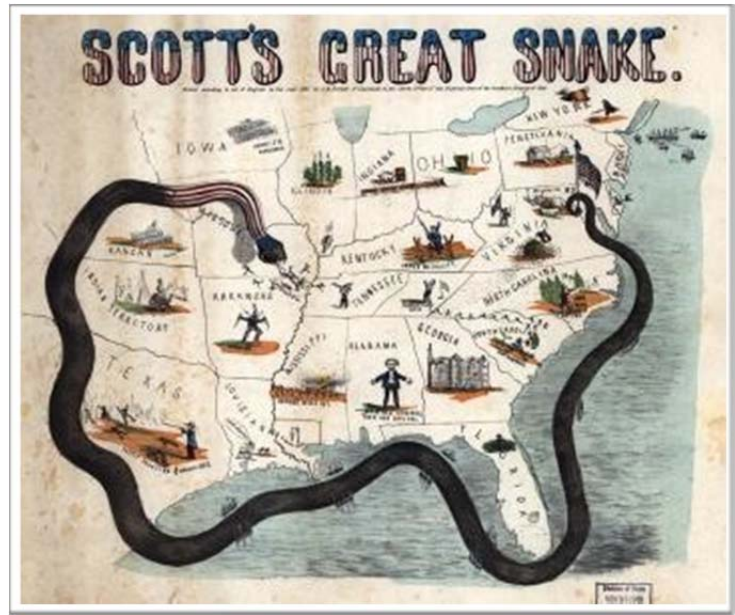


FIGURE 5 - J.B. ELLIOT'S "SCOTT'S GREAT SNAKE".
SOURCE: LIBRARY OF CONGRESS;
WWW.LOC.GOV/EXHIBITS/CIVIL-WAR-IN-AMERICA/APRIL-1861-APRIL-1862.HTML#OBJ9

³ Barron Deadrick, *Strategy in the Civil War* (Harrisburg, PA: The Military Services Publishing Co., 1946), 2, 5

⁴ Deadrick, *Strategy in the Civil War*, 4

⁵ Deadrick, *Strategy in the Civil War*, 4

⁶ Murray Williamson, *The Making of Strategy: Rulers, States, and War* (London: Cambridge University Press, 1994), 235

the Union's strategic goals.⁷ Moreover, the quantity issue was made worse by an immediate reduction in quality. At the start of the war 26% of West Point graduates then serving as officers joined the Confederacy as their home states seceded.⁸ The issues surrounding the quantity and quality of the Union's Army was obvious to both sides. Lee's own assessment of the Union at the outset of the war relative to its strategic objectives reflected an Army "not ready for prompt invasion."⁹

In formulating the Union's strategy of attrition, what would later be called the Anaconda Plan, correspondence between Generals McClellan and Scott indicated they were cognizant the Union was not prepared to immediately take offensive action.¹⁰ The Union's strategy turned to an indirect plan to blockade economic outlets and divide the Confederacy by contesting the Mississippi River.¹¹ The Northern strategy's "bloodless" intent was to avoid early battle in order to buy time and grow the Union's regular army from a pre-war strength of 16,000 to over 250,000.¹² The indirect plan was approved, but Winfield Scott's execution was hampered by political pressure. In the aftermath of Sumter, Scott was ordered to display some initiative and go on the attack early.¹³ Relenting, the North prematurely offered battle at Manassas and the results were disastrous. The Union's eastern campaign continued to struggle against Lee's Army through 1863.¹⁴

On the Western front and on the sea, however, Anaconda went more or less according to plan. By 1862, the North slowly stripped away

⁷ Official Records of the Union and Confederate Armies. series 1, vol. 51 part 1 (Washington D.C.: Government Printing Office, 1894 - 1917), 338. Hereafter formatted as O.R. series 1, vol. 51 part 1, 338

⁸ Dick Crews, "West Point in the Civil War." The Cleveland Civil War Round Table. http://clevelandcivilwarroundtable.com/articles/military/west_point.htm

⁹ Deadrick, *Strategy in the Civil War*, 5

¹⁰ O. R. series 1, vol 51 part 1, 368

¹¹ Deadrick, *Strategy in the Civil War*, 10

¹² O. R. series 1, vol 51 part 1, 368

¹³ O. R. series 1, vol 51 part 1, 368

¹⁴ Eric J. Wittenberg, *The Union Cavalry Comes of Age: Hartwood Church to Brandy Station, 1863* (Washington, D.C: Brassey's, 2003), xi

the South's ability to generate force and stifled its economy, reducing cotton exports by almost 90%.¹⁵ Lincoln's political maneuvering was effective at isolating the South from Europe and denied the Confederacy access to the world market, preventing a valuable means of trade and supply of materiel.¹⁶ The navy, in conjunction with the Army, was systematically denying ports of entry or economic lines of communication. With these conditions, Grant, then commanding units in the West, strongly believed the wind was at the Union's back, the South was teetering on the edge of collapse, and the Civil War could be won with a Napoleonic battlefield victory.¹⁷ This was a common perspective among Union military leaders in 1862.¹⁸ The battle of Shiloh disabused Grant of this notion.

After emerging victorious at Shiloh following a two-day struggle where both sides suffered over 23,000 casualties in under 48 hours, Grant gained a new appreciation for the Confederacy's resolve in the face of Union aggression.¹⁹ With the full understanding that a single, grand battle was not going to bring decision, Grant quickly adopted two ideas that guided his actions for the rest of the war. First, he should "give up all idea of saving the Union except by complete conquest."²⁰ Second, the destruction of strategic supplies and the destruction of forces offered a similarly decisive effect on the war, offering the same result, "without much bloodshed."²¹ From these perspectives, the strategic importance of long range strike capability comes into view.

¹⁵ Timothy H. Donovan, *The American Civil War. The West Point Military History Series* (Chicago, IL: Avery, 1986), 11

¹⁶ Timothy Donovan, *American Civil War*, 11

¹⁷ David J. Eicher, *The Longest Night: A Military History of the Civil War* (New York: Simon & Schuster, 2001), 739

¹⁸ Russell F. Weigley, *The American Way of War* (Bloomington, IN: Indiana University Press, 1973), 120

¹⁹ Brian John Murphy, *Ulysses S Grant* (Washington D.C.: Brassey's, 2004), 218

²⁰ Murphy, *Grant*, 218

²¹ Murphy, *Grant*, 218

To Scott and McClellan, the indirect nature of the Anaconda Plan was a requirement in the face of a near term mismatch between means and ends. The plan's economic impact on the South was necessary to win. To Grant, however, it was insufficient in the face of a determined enemy. Grant's version of success was still a long way off and the road to victory lay in attacking the interior of the South. Contemporaneous innovations in the organization and employment of cavalry forces went a long way toward helping him align his ends, ways and means.

Union Cavalry 1861 - 1863

In the opening months of the Civil War, the fortunes of the Union's cavalry reflected the generally poor condition of the Union Army.²² This was due in part to bias against the cavalry force as a second class unit.²³ Cavalry at best was seen as a supporting maneuver element to the infantry. At worst, cavalry was often assigned menial tasks such as couriership and policing.²⁴ Further complicating matters was a lack of direction and doctrinal confusion about what cavalry should be.²⁵ Moreover, the secession of Southern states led to a brain drain among military elites decimating the quality and quantity of the Union cavalry force.²⁶ Of 174 cavalry officers in the US Army prior to the war, 104 resigned the commissions and joined the Confederacy, and of the 6 cavalry colonels in the regular army, four joined the confederacy.²⁷ The rudderless Union cavalry was then often subject to the whims of non-

²² *Battles and Leaders*, vol. 4, 188

²³ Albert G. Brackett, *History of the United States Cavalry: From the Formation of the Federal Government to the 1st of June, 1863* (New York, NY: Harper & Brothers Publishers, 1865), 212.

²⁴ Major General John K. Herr, and Edward S. Wallace. *The Story of the U.S. Cavalry 1775 – 1942* (Boston, MA: Little Brown and Company, 1953), 118

²⁵ James H. Wilson, *Under the Old Flag*. Vol. 2 (New York, NY: D. Appleton and Company, 1912), 9

²⁶ Urwin, *Cavalry: Illustrated History*, 106

²⁷ Brackett, *History of United States Cavalry*, 211

cavalry officers. This paper will revisit this point, but the consequence of poor direction and poor stewardship of the cavalry was poor organization at the institutional army level, resulting in poor organization and execution at the operational and tactical levels.

Examples of this dynamic abound. General McClellan's relationship with his cavalry division offers a compelling case, and his relationship with his cavalry division is a prime example of how command relationships and organization in the early stages of the war were problematic. McClellan's early campaigns against Lee's Army yielded mixed results. In some cases, the organization and misunderstanding of cavalry forces is cited as causal factors in defeat. The organization in part was due to a misunderstanding of the battlefield geography, but it was made worse by McClellan's bias against the cavalry force. Virginia was considered unsuitable terrain for large concentrations of cavalry units.²⁸ Narrow avenues of attack and battlefields prohibited large scale cavalry maneuvers and kept formations at or below the regimental level. McClellan, acting as the Commander of the Army of the Potomac and already predisposed to discount cavalry effectiveness, decided cavalry units were too expensive to operate in large formations, and therefore attached them to infantry units.²⁹ In this dispersed manner of organization, much of the cavalry's tactical and operational advantages in speed and range were subordinated by the inferior speed and range of Union infantry commands and objectives.³⁰

²⁸ Urwin, *Cavalry: Illustrated History*, 109

²⁹ Urwin, *Cavalry: Illustrated History*, 114. The author points out that there was consternation from the outset of the war concerning the organization of Cavalry forces. The distributed character of Cavalry at the time was understood as a missed opportunity in some circles. These sentiments mostly lingered in the background until Stuart's man-handling of McClellan's forces in the summer of 1863 highlighted the effectiveness of larger concentrations, even in the supposedly inhospitable geography of Virginia.

³⁰ Wilson, *Under the Old Flag* vol. 2, 9

McClellan's organization of cavalry forces proved problematic for the next two years and had tangible results on the battlefield. Stephen Sears' treatment of the Battle of Antietam suggests McClellan's losses were made far more severe by his absurd positioning of cavalry and his poor coordination of action between mounted and unmounted forces.³¹ During the battle, McClellan's grip on cavalry tactics was questionable from the start. McClellan's orders for his cavalry forces, under the command of General Pleasanton, were often refused outright due to their apparent absurdity.³² In subsequent campaigns and skirmishes in Virginia, Union cavalry losses at the hands of Confederate cavalry were attributed to poor organization.³³ The Confederate cavalry's dominance of the Union's mounted force continued through the summer of 1862 when J.E.B. Stuart's ride through Union ranks sparked a movement inside the Union Army to reconsider and revitalize its cavalry.³⁴ Stuart literally rode a circle around Union forces, capturing 163 Union soldiers for a loss of only one of his own.³⁵ It was an embarrassing display for Union forces and the ride around Union forces was a public relations nightmare.³⁶ Seeking answers, Union generals attributed the success of the Confederate raid to superior organization of forces.³⁷ From this conclusion, a solution emerged as Stuart's operation essentially provided the Union a free lesson on the potential of an operational independent cavalry force.³⁸ The lessons learned sparked a series of institutional, operational and tactical innovations that shaped Union cavalry through the end of the war.

³¹ Stephen Sears, *Landscape Turned Red The Battle of Antietam* (New York, NY: Ticknor and Fields, 1983), 271, 276

³² Sears, *Antietam*, 271

³³ Urwin, *Cavalry: Illustrated History*, 114

³⁴ Urwin, *Cavalry: Illustrated History*, 116

³⁵ Jeffry D. Wert, *Cavalryman of the Lost Cause: A Biography of J.E.B. Stuart* (New York, NY: Simon & Schuster, 2008), 93 - 101

³⁶ Wert, *Cavalryman of the Lost Cause*, 93 - 101

³⁷ Wert, *Cavalryman of the Lost Cause*, 93 - 101

³⁸ Urwin, *Cavalry: Illustrated History*, 117

McClellan's experience in Virginia in general and Antietam specifically highlight failures in the tactical and operational organization and employment of cavalry. By failing to organize cavalry at the institutional level, the Union Army did not improve the cavalry's chances of success. Prior to 1863, requisition of mounts was handled primarily through the Army's Quartermaster Department (QD) whose time was also committed toward procuring and equipping a rapidly growing infantry force. Following the battle of Gettysburg, remounts were in high demand.³⁹ With the additional burden of handling procurement for mounts and munitions, the QD also assumed responsibility for the unique logistic requirements for cavalry operations. The aggregate demand for stirrups, feed, mounts, and veterinary supplies exceeded the QD's expertise in procurement, leading a declination of both quality and quantity of materiel. Cavalry operations were often cut short due to infirm mounts, mounts not fit for military duty to begin with, or because of inadequate feed supplies out of garrison. Whether it was due to ignorance, poor contract management or outright corruption, it became clear to the War Department the logistics apparatus used to support a growing infantry was not adequate to support the unique demands of a growing cavalry and some of the losses on the battlefield could be placed at the feet of the Quartermaster Bureau.⁴⁰

By the summer of 1863 a sea change was taking place in the war, both in terms of the Union's overall position and the effectiveness of the cavalry. The Union was starting to realize the strategic effects of the Anaconda Plan as the South suffered increasing levels of pain from economic dislocation.⁴¹ The Union naval blockade was tightening around the South and the Mississippi River was now dominated by the Union. In Virginia, the North was beginning to see tactical success against Lee.

³⁹ Wittenberg, *Union Cavalry Comes of Age*, 330

⁴⁰ Wittenberg, *Union Cavalry Comes of Age*, 330

⁴¹ Deadrick, *Strategy in the Civil War*, 10

That is not to say leaders on both sides believed the end was near, but the Union could perhaps now see a path to victory.

Coincident with the Union's improved strategic position in 1863, Union cavalry took a turn for the better largely due to fixes in operational and institutional organization. J.E.B. Stuart's ride around Union lines the year prior still influenced Northern cavalry, awakening senior leaders like General Sheridan to the advantages of a better organization. By 1863, through careful study of Stewart, Sheridan achieved similar tactical successes, mimicking the centralized character of Confederate cavalry organization. In doing so, Sheridan avoided the pitfalls associated with dispersed cavalry units and was able to apply the full weight of the mounted force under his command. The full measure of cavalry's advantages could be applied against the enemy.

Institutionally, the Army created the Cavalry Bureau in summer 1863 to oversee procurement of cavalry-specific equipment and maintenance of logistical supply chains.⁴² The Army recognized the Quartermaster Department lacked not only the requisite expertise to anticipate the needs of the cavalry force, but also the expertise to inspect the quality of the mounts and equipment.⁴³ Additionally, the new bureau was responsible for measures of contract performance and conducting analytical studies regarding the techniques for operational use and management of cavalry equipment and personnel.⁴⁴ The early days of the Bureau were often rife with corruption, but it remained a sanctuary for true institutional change in the organization. Key decisions made by the Bureau in the fall of 1863 had decisive impacts on the lethality of Union cavalry, transforming it from a group led by inexperienced subalterns to

⁴² Brackett, *History of the United States Cavalry*, 319

⁴³ Brackett, *History of United States Cavalry*, 318

⁴⁴ Brackett, *History of United States Cavalry*, 319

the best arm of the service and arguably “the most efficient body of soldiers on earth.”⁴⁵

It is essential to understand the general trends in the early war years and within the Union cavalry because these early days served as a learning laboratory for Union generals and their subordinates. The brain drain from Southern defection is certainly a root cause to having to re-learn how to organize and conduct war, but the Civil War was also an entirely new endeavor for North and South alike in terms of the technology used and the scale of operations. The summer of 1863 marks a tipping point where the Union applied the harsh lessons of defeat toward victory, harvesting advantage from their bloody battlefield experience. It also marks a turning point for James H. Wilson. Instead of being an observer of history in Grant’s staff, his newly appointed command started to make it. What follows is a selective biography and history uniting Wilson’s experiences as a subordinate to Sheridan, Grant and Sherman with his decisions as a leader of cavalry.

Wilson’s Early Career: Slowly For a Moment, Then All At Once

James H. Wilson was born September 2, 1837 in rural Illinois to a middle-class family of farmers.⁴⁶ The early death of his father placed a great deal of responsibility on his young shoulders. His young adult life is characterized as “mature,” “energetic,” and “independent.”⁴⁷ His responsibilities were complemented by an abiding confidence and disposition toward self-discipline. This high regard for handiwork and responsibility led him to West Point where he graduated sixth out of 41 graduates in the class of 1860.

⁴⁵ Brackett, *History of United States Cavalry*, 118

⁴⁶ Edward G. Longacre, *From Union Stars to Top Hat; a Biography of the Extraordinary General James Harrison Wilson* (Harrisburg, Pa.: Stackpole Books, 1972), 25

⁴⁷ Longacre, *Union Stars*, 28

While a cadet he displayed tendencies that shaped the tenure of his command later in his career. He was often dogmatic concerning military matters and refused to acknowledge alternative perspectives. This often led to needless fights with peers and accusations of insubordination from his superior officers and left him with a reputation for tenacity in the face of opposition. Internally, Wilson developed a general love-hate relationship with authority, acknowledging the need for discipline and accountability inherent in it, but reluctant to recognize authority in others.⁴⁸ Nevertheless, Wilson excelled in military studies, and cavalry in particular, but his early career took another path.⁴⁹

Wilson received a commission with the topographical engineers, which at the time offered the most promise for promotion and advancement. After an uneventful assignment mapping the Pacific Northwest, Wilson put in for reassignment to the Eastern Theater after war broke out in Virginia.⁵⁰ Wilson bounced around Washington DC for a few months until landing a job in 1862 as a staff officer for General Grant's Army of Tennessee. Wilson provided mostly surveys (which might be better understood as intelligence mapping today) and administrative support. What little battlefield action he saw came mostly through harassing action while out on reconnaissance missions. Wilson's surveys were of a superior quality and informative to Grant's battle plans, enabling the Army of the Tennessee's campaign against Lieutenant General John C. Pemberton at Vicksburg. By the end of 1862, the quality of Wilson's staff work created a demand for his services. Feeling competition to retain Wilson, Grant soon promoted Wilson from

⁴⁸ James H. Wilson, *Under the Old Flag*. vol. 1 (New York, NY: D. Appleton and Company, 1912), 15

⁴⁹ Longacre, *Union Stars*, 95

⁵⁰ Wilson, *Under the Old Flag*, vol. 1, 56

Lieutenant to Lieutenant Colonel in January 1863, rather than risk losing him to another command.⁵¹

The decision to retain Wilson was fortunate for both men. As a Lieutenant Colonel, Wilson continued to excel under Grant's command, enabling the planning and execution of Grant's Vicksburg campaign. By the end of 1863, Grant rewarded Wilson's hard work and recommended him for re-assignment to assume command of the Cavalry Bureau in Washington DC, accompanied by a promotion to Brigadier General.⁵² The Army created the Bureau just five months prior to Wilson's nomination, but it was already suffering from mismanagement and corruption.⁵³ Grant chose Wilson because he had been impressed with his staff performance in general, but also because Wilson showed an aptitude for reforming cavalry organizations while he served as Grant's inspector general.⁵⁴ At the time of this appointment, Wilson had never formally served as a cavalry officer, much less led anyone into battle. After the appointment, Wilson's future was tied to his continued success as a commander of mounted forces.

Cavalry Bureau Chief: Fixing What Others Could Not

Serving under Grant as a staff officer, Wilson rose from Junior Lieutenant to Brigadier General in under twelve months. As a flag rank officer at the age of 26, commanding the Cavalry Bureau was his first formal command assignment. Energetic and undaunted, Wilson sat down at his desk as head of the Cavalry Bureau (CB) and immediately began to tackle existing roadblocks to cavalry innovation: inadequate contractor performance, inappropriate political influence, and stagnant

⁵¹ Longacre, *Union Stars*, xx

⁵² O. R. series 1, vol 58 part 1, 131

⁵³ Wilson, *Under the Old Flag*, vol. 1, 327; Wittenberg, *Union Cavalry Comes of Age*, 330.

⁵⁴ Longacre, *Union Stars*, 95

weapons modernization programs.⁵⁵ Weapons modernization was due in large part to legacy influences imposed by infantry regulations regarding weapons procurement. The Cavalry Bureau was stood up specifically to address residual obstacles stemming from internal policy issues. In terms of contract management and political influence, however, the Bureau was less effective at resolving tensions between the two, and procurements problems were often created by the very organization designed to fix them. Turning the Bureau around to eliminate corruption, influence and inefficiencies tested Wilson's resiliency and discipline, but it laid the institutional foundation for cavalry victories through the end of the war.

One issue when the Cavalry Bureau was established was poor contractor performance.⁵⁶ Specifically, the infantry-oriented QD was as unable to evaluate contract performance as they were unable to distinguish between varying qualities of horseflesh. The issue had been exploited by suppliers for years under the QD, and the exploitation continued under the weak leadership of the CB. The result was endemic shortfalls in quality mounts in the field.

Wilson cleaned up contract performance issues by eliminating contract loopholes and establishing control mechanisms for violators and poor performers. Those who violated the terms of their contracts through unethical practice, purposeful deception, or failure to deliver had payments withheld or assets seized.⁵⁷ Wilson's aggressive approach to managing contracts met with stiff resistance from the vendor community, and his career was threatened more than once. Wilson's reforms were complemented by efforts to maintain significant personal and professional distance from vendors with whom the Bureau engaged in business. Nevertheless Wilson operated under political and military

⁵⁵ Longacre, *Union Stars*, 96

⁵⁶ Brackett, *History of United States Cavalry*, 318

⁵⁷ Longacre, *Union Stars*, 98

protection and was successful in increasing the rate of delivery of battlefield quality mounts.⁵⁸

In addition to improving the quality of the horses, Wilson also resolved issues regarding the quality of the units within his Bureau. Many of the early defeats suffered by Union cavalry could be attributed to lack of experience. Two years into the war, Wilson assumed command of the Bureau at the same time Union cavalry was turning a corner with respect to experience. Cavalry commanders such as General Grierson planned and conducted ever-larger raids deep into Confederate territory, exhibiting a more aggressive spirit in the field. Wilson found cavalry procurement policy, however, did not enable this growing experience and aggressive attitude due to inappropriate political influence. State leaders found it politically advantageous as a form of patronage to stand up new regiments and commissions rather than maintain older ones.⁵⁹ As a result, the Cavalry Bureau was in the habit of pushing the lion's share of resources to new units rather than to veteran units. Wilson managed to reverse the flow of supplies to veteran units, capitalizing on the Union's growing expertise in cavalry operations. Political impediments proved harder to correct. Unlike with the contractor issues, Wilson burned bridges with state-level politicians. It was his standing in the military and with Grant, however, that provided him the necessary top cover, allowing him to match his best equipment with the Union's best troops.

Wilson's weapons modernization program was his last major contribution as Bureau Chief. This reform was much easier to make and was arguably his most influential. The Spencer Repeating Carbine Rifle dominated the battlefield for the Union in the later stages of the war, but in the summer of 1863, it was only in the hands of a few regiments. The Infantry turned its back on the weapon when it was introduced in 1861.

⁵⁸ Wilson, *Under the Old Flag*, vol. 1, 329

⁵⁹ Wilson's struggle with vendors, local politicians and state representatives is recounted in Longacre's *From Union Stars to Top Hat*, 99 – 110.

As a result of this early decision, cavalry units also had to do without, but once Wilson was purchasing weapons, he saw an opportunity to address a significant weakness inherent to the cavalry formation. Wilson correctly understood cavalry units were hampered in their effectiveness because of their low density of fire. Mounted cavalry troops, each armed with a standard rifle, stood line abreast at a density 1/7th of an infantry line. Thus, for a given line of distance, cavalry were putting far fewer bullets into the enemy's formation than an infantry unit could return. Wilson saw an opportunity to correct for this deficiency by changing technology. By acquiring the breach loaded, magazine fed repeating carbine, each mounted cavalry troop represented 7 - 10 shots in the same time it took an infantryman to fire one shot. With the proper distribution of these weapons across the cavalry, the mounted force could now bring to battle the same density of firepower as an infantry unit. In the QD system, the development and procurement of the repeating Carbine could not and did not happen.⁶⁰ With Wilson's advocacy from the Cavalry Bureau, he was able to place the decision to purchase before the President, leveraging the Executive's influence to push through Wilson's single greatest contribution to the war effort.

Wilson's tenure as the chief of the Cavalry Bureau was brief but effective. In roughly ten weeks, he managed to install significant reforms to the administration of the Bureau the QD could not or would not, as in the case of the Spencer rifle. The changes in procurement put the best veteran units into battle with the best gear. Higher quality mounts and reliable sourcing ensured battlefield commanders on maneuver could expect regular re-supply of consistent quality. Acquiring the repeating rifle breathed new life into the lethality of mounted troops as an infantry-like density of firepower was now mated to the speed of mounted troops.

⁶⁰ Wilson's assessment of the repeating carbine rifle and the conservative rejection of it by the Quarter Master Department can be found in his diary, *Under the Old Flag*, vol 1., 328 - 333.

In short, better troops could reach deeper with more firepower at their disposal once they got there. Under Wilson's command, the Cavalry Bureau established the long needed institutional reform the cavalry required. More than ever, the mounted force was postured to grow into a mature force capable of achieving strategic effect through independent operations. Later in the war, Wilson went into battle with the very force he created, realizing the promises made through his reforms.

On Campaign at Last

After ten weeks as chief of the Cavalry Bureau, Grant reassigned Wilson to Meade's Army of the Potomac and appointed him to his first command, the Third Cavalry Division serving under Sheridan's Cavalry Corps. This was an informative and influential arrangement for Wilson, as Sheridan had spent the previous months preparing a new approach to commanding cavalry operations. Meade was in the final stages of preparing a spring campaign against Lee in southern Virginia, and Sheridan was eager to explore centralized corps-level operations.

Since Stuart had embarrassed the Union in 1862, Union cavalry had been searching for a way to emulate their adversary. Grierson's campaign in the Western theater in 1863 involved 2000 cavalry troops and was the first iteration of Union cavalry experiments in central organization and independent operations. The popular media was so impressed with the exploits of Grierson's raid they heralded the deep cavalry strike as a new form of warfare.⁶¹ Grant and Sheridan understood Grierson realized his successes primarily through the size and centralization of his command.⁶² Emboldened by Grierson's

⁶¹ "Col. Grierson's Cavalry Raid,; Official Dispatch from Gen. Grant." New York Times, May 10, 1863, <http://www.nytimes.com/1863/05/10/news/col-grierson-s-cavalry-raid-official-dispatch-from-gen-grant.html>, accessed 10 March, 2014

⁶² Brown, *Grierson's Raid*, 6

experience, Sheridan envisioned a cavalry force similarly organized for independent action at the Corps level.

Sheridan's command of the Cavalry Corps was not an accident. Exploiting Grant's doubts about Meade's ability to handle Cavalry, Sheridan leveraged his good standing with Grant to wrestle control of all cavalry forces, centralizing them under a Corps.⁶³ In other words, Sheridan's organization and operational philosophy were not of Meade's making, and the two generals were often in violent disagreement about how and when cavalry should be used. The generals eventually reached an impasse, stalling operations. Grant was forced to step in and settle the issue and did so by granting Sheridan the authority to conduct independent operations. General Grant did so under the proviso that these operations were aimed at locating and defeating Lee's cavalry forces, then under the control of J.E.B. Stuart.

In light of Wilson's development as a cavalry officer, the details of Sheridan's campaign against J.E.B. Stuart are less important than the results. Using the organizational model Stuart himself inspired in Union troops, Sheridan defeated Stuart, employing a centrally commanded cavalry corps operating independently of infantry maneuver.⁶⁴ The advantages of this command relationship were limited in part by the tactical, attritional character of Sheridan's ascribed objectives. Sheridan's orders were to seek out a force-on-force battle with Stuart and shape Lee's forces for further offensive operations.⁶⁵ Tactically, Sheridan delivered the intended results, critically wounding Confederate cavalry operations in Virginia for the rest of the war. Strategically, the immediate impact of Sheridan's campaign was the death of Stuart. The quality of Confederate cavalry now rested with General Nathan Bedford Forrest.

⁶³ *Battles and Leaders* vol. 4, 188

⁶⁴ *Battles and Leaders* vol. 4, 189

⁶⁵ *Battles and Leaders* vol. 4, 190

As might be expected from any rookie commander, Wilson's command of the Third Cavalry Division was far from perfect.⁶⁶ The experience under Sheridan, however, was key in many respects. Most notably, Wilson gained priceless experience in the effective command and control of Corps-level cavalry operations. Sheridan's objectives were relegated to force-on-force attritional effects, but the operation was independent of infantry. Sheridan's cavalry corps of over 10,000 soldiers opened up the range of effects that could be applied with such a force. Sheridan continued commanding Meade's cavalry corps through the remainder of the war in the Eastern Theater. Wilson's performance earned him an appointment as Sherman's cavalry commander in preparation for his infamous march to the sea.

When Wilson arrived at Sherman's headquarters to report for duty, two things were clear. Sherman thought little of cavalry, and as a consequence, his mounted force was penny packeted across Sherman's Military Division of the Mississippi.⁶⁷ Wilson immediately grasped the consequences of this arrangement when he hastily instituted a recall of his cavalry forces and only 600 personnel reported. Because Wilson could not adequately control his forces from a central position, the command of Sherman's cavalry defaulted to the local infantry commanders they were supporting.⁶⁸ Sheridan's organization and battlefield victories against Stuart exposed Wilson to a new level of organizing and commanding cavalry forces, from which he could not turn away. The advantages of an independently commanded and controlled force were too obvious to Wilson to tolerate this regression in organization.

Wilson requested an audience with Sherman and the two commanders discussed a new command arrangement. Citing the

⁶⁶ Longacre, *Union Stars to Top Hat*, 117

⁶⁷ Wilson, *Under the Old Flag* vol. 2, 26-28

⁶⁸ Wilson, *Under the Old Flag* vol. 2, 20-24

advantages Sheridan's cavalry force offered Meade in his campaign in Virginia, Wilson convinced Sherman to reorganize the cavalry under one commander, mostly to realize the benefits of mass.⁶⁹ Wilson wasted no time preparing his corps, but just before Sherman embarked, he re-assigned Wilson's cavalry to cover General Thomas's supporting operation in Tennessee against General Hood to secure Sherman's supply lines.⁷⁰

As with the Sheridan campaign, the experience working for General Sherman and then General Thomas in Tennessee was less important than the results in terms of Wilson's development. Wilson's advocacy for a centrally organized cavalry was successful, but more importantly, it gave him the opportunity to examine and evaluate the advantages of independent operations. In doing so, Wilson identified unique contributions only an independent cavalry could offer.⁷¹

The Raid

The Tennessee campaign was hard fought, and Wilson's troops garrisoned just north of Huntsville to ride out the winter and recoup their strength.⁷² Energized and emboldened by his recent experiences with Corps-level cavalry, Wilson started theorizing about the effectiveness of a 25,000-strong cavalry Army.⁷³ In a letter to a colleague written during the winter lull in operations, Wilson argued such a force was unstoppable and the enemy lay vulnerable before him to an attack "beyond endurance."⁷⁴ To that end, Wilson actively fought to realize this force structure. He made arrangements with the Cavalry Bureau to supply him with tens of thousands of mounts and drilled his men to near

⁶⁹ Wilson, *Under the Old Flag* vol. 2, 7

⁷⁰ *Battles and Leaders*, vol. 4., 468

⁷¹ *Battles and Leaders*, vol. 4., 471

⁷² *Battles and Leaders*, vol. 4., 759

⁷³ Longacre, *Union Stars*, 195; Wilson, *Under the Old Flag*, vol. 2, 179

⁷⁴ Longacre, *Union Stars*, 196

perfection.⁷⁵ He complemented his tactical and technical preparations by recruiting the brightest battle-tested division commanders in the Union.⁷⁶

Wilson's troop strength suffered from high-level inattention. Grant, in charge of all Union overland movements, focused primarily on Sherman's operations into the Carolinas and had given little thought as to Wilson's emerging capacity.⁷⁷ The growing size of his command did not, however, escape the notice of regional commanders. Requests were made (and approved) to siphon off one or two of Wilson's cavalry regiments in support of other campaigns in the West. Sensing the erosion of his forces, Wilson fought these requests as best he could, but he also realized without a clear mission, his command and his theory of a centralized cavalry army were at risk of death by a thousand cuts. Wilson long held a vision that cavalry could and should be a decisive factor in war, but a lack of a specific mission was denying him the chance to highlight what his troops could do.⁷⁸ Seizing on the capabilities of his cavalry corps and its relative proximity to the economic centers deep inside Alabama, he developed a plan to conduct a long range strike on industrial, financial, and morale centers still remaining in the Confederacy.

The plan had obvious impacts on the Southern economy and war fighting capacity. When finally approved, the plan called for Wilson to lead a corps of five divisions consisting of nearly 17,000 men. Wilson's campaign included a quick strike deep into Alabama's remaining industrial center at Selma, followed by a campaign of denial and

⁷⁵ James Pickett Jones, *Yankee Blitzkrieg: Wilson's Raid through Alabama and Georgia* (Athens, GA; London: University of Georgia Press, 1987), 18.

⁷⁶ Jones, *Yankee Blitzkrieg*, 12

⁷⁷ Mounted Roads of the Civil War, 306

⁷⁸ Wilson, *Under the Old Flag*, vol. 2, 180

punishment stretching from Montgomery to Columbus.⁷⁹ Then his plan was to ride to Atlanta and rejoin on Sherman's forces, then make his way up the Carolinas. In addition to cutting off Texas from any retreating Confederate forces, the main objective for Wilson was to deny the South the industrial capacity in Selma.⁸⁰

Alabama was a major source of both iron ore and iron refining for Confederate war materiel.⁸¹ Although the Union targeted Alabama's industry, throughout the war Selma remained a vital center responsible for finished iron products and producing naval armaments.⁸² Montgomery and Columbus were also significant nodes in the Confederate industrial web late into the war. As major population centers, they also served as moral centers of gravity for the Confederate cause.⁸³ The dual character of these cities suggested two operational approaches. Wilson intended to defeat the South through direct action, destroying the South's remaining capacity for military resistance as well as bringing the war home to the doorsteps of the Southern people. Grant envisioned a slightly different campaign, suggesting an indirect show of force through population centers maneuvering to join General Canby's forces who were conducting parallel operations from Mobile.⁸⁴ However disagreeable the suggestion might have been to Wilson at the time, it laid the foundation for a self-sustaining independent cavalry operation.⁸⁵

⁷⁹ Wilson, *Under the Old Flag*, vol. 2, 180; Denial and Punishment are modern classifications used to delineate missions by objective and intended effect. For more detailed analysis, see Robert Anthony Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y: Cornell University Press, 1996), 57

⁸⁰ Wilson, *Under the Old Flag*, vol. 2, 180

⁸¹ Stockham, Richard J. "Alabama Iron for the Confederacy: The Selma Works." *Alabama Review* 21 (July 1968): 63-72.

⁸² O. R. series 1, vol 49 part 1, 29

⁸³ Jones, *Yankee Blitzkrieg*, 107

⁸⁴ O. R. series 1, vol 49 part 1, 92

⁸⁵ Longacre, *Union Stars*, 198; Longacre, *Mounted Raids*, 309

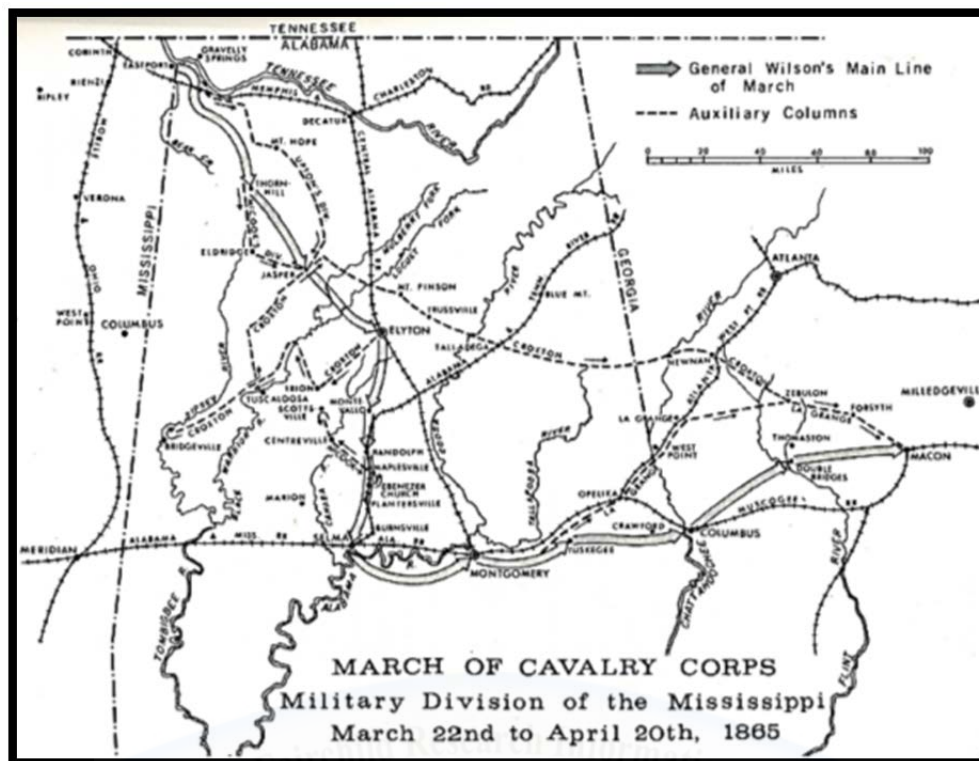


FIGURE 6 – WILSON'S LINE OF ADVANCE THROUGH ALABAMA AND GEORGIA. SOURCE: REPRINTED FROM *YANKEE BLITZKRIEG*

Wilson's plan outlined a deep strike, leapfrogging most of Alabama and landing in Selma. The success of this operation depended in part on secrecy, but more so on speed and discipline. To that end, Wilson relentlessly drilled his command over the winter and early spring of 1865, sharpening his troops and garnering morale.⁸⁶ Wilson was also aided by the careful selection of his division commanders. Wilson considered his division commanders, Long, Upton, Hatch, Knipe, and McCook, to be energetic leaders and superior cavalymen, accomplished in battle and possessed of the unique traits cavalry operations demand of their leaders.⁸⁷ Their relentless preparation focused on precision maneuvers and the proper care of weapons, enabled by Wilson's previous insistence on quality while head of the Cavalry Bureau. The Corps' horses were vastly superior and the men's weapons consisted almost

⁸⁶ Longacre, *Mounted Raids*, 309

⁸⁷ Wilson, *Under the Old Flag*, vol. 2, 170

exclusively of seven shot Spencer Breech loading repeating carbines, the same weapons Wilson had ordered into production in 1863.⁸⁸

The in-garrison leadership of Wilson and his division commanders was instrumental in keeping the mission and the unit alive. After Wilson's superiors considered his plan over the winter, Grant and Thomas opted for the indirect approach and pushed back with a recommendation for a 5,000-man "show of force."⁸⁹ Disappointed with that result, Wilson brought General Thomas out to Gravelly Springs so Thomas might get a chance to see Wilson's troops drill. After witnessing all five divisions maneuvering about the drill field in near perfect harmony, Thomas was sufficiently impressed to ask Grant to reconsider the scale of the mission.⁹⁰ Not long after Wilson's display, Grant revised the mission from show of force to a full-scale raid. To accompany the approval, Grant bestowed on Wilson the "latitude of an independent commander" to achieve his objectives.⁹¹

Unfortunately, two of Wilson's key subordinates were forced to sit out the campaign. Thomas chopped Knipe's division to support Canby's operation in southern Alabama.⁹² Hatch's division was unable to secure enough remounts after the Tennessee campaign from the previous fall and remained combat ineffective at the start of Wilson's Alabama campaign. Wilson lost Knipe's forces altogether, and the remainder of Hatch's capability was absorbed in the remaining divisions. Despite Grant's approval of Wilson's ambitious plans, Wilson was still forced to launch his mission from Gravelly Spring with three divisions, two less than he wanted. On March 22, Wilson and his Corps crossed the

⁸⁸ Jones, *Yankee Blitzkrieg*, 18

⁸⁹ Wilson, *Under the Old Flag*, vol. 2, 180

⁹⁰ Johnson, Robert Underwood and Clarence C. Buel, eds. *Battles and Leaders of the Civil War*. vol. 4(New York, NY: Castle Books, 1956), 759 Hereafter referred to as *Battles and Leaders*, vol. 4, 759.

⁹¹ Wilson, *Under the Old Flag*, vol. 2, 181

⁹² O. R. series 1, vol 49 part 1, 342

Tennessee River and into Alabama; with him on the mission to Selma were Upton, McCook, and Long.⁹³

At the start of the campaign Forrest was closer to Selma than Wilson by almost 70 miles.⁹⁴ Wilson relied heavily on speed to take the city.⁹⁵ To that end he would need to both increase his rate of advance and slow down Forrest's. To increase his own rate of advance, Wilson cut off the slow moving logistical tail of his command, insisting his troops carry only what could not be foraged in the Alabama countryside. As far as how to slow Forrest down, Wilson found his answer in obfuscation.⁹⁶ Wilson ordered his three divisions to set out on alternate paths toward a rejoin in Jasper, Upton took an eastern route while McCook and Long took separate southern routes.⁹⁷ With no further direction other than to ride fast, all three divisions spread out from Gravelly Springs, appearing to hold multiple objectives at risk.⁹⁸ Wilson's decision to choose multiple roads to Selma was not without risk, but it served its intended purpose. Wilson's feint and concealment enabled his command to win the race to Selma. Forrest's camp observed the departure from Gravelly Springs, but was divided about the true nature of the Union's objective; one faction, responsive to Canby's imminent maneuvers in the south, was convinced Tuscaloosa was at risk, while others were concerned about Selma.⁹⁹ Some even felt Wilson's objective was Memphis.¹⁰⁰ A dearth of intelligence framed a hazy picture about the true nature of Union forces operating in Alabama. This confusion first delayed action by Forrest; then it forced him to split his forces and cover both Tuscaloosa and

⁹³ O. R. series 1, vol 51 part 1, 342

⁹⁴ A comparison of distance derived from the difference in Wilson's and Forrest's position at West Point, Mississippi and detailed in Wilson, *Under the Old Flag*, vol. 2, 175

⁹⁵ Wilson, *Under the Old Flag*, vol. 2, 191

⁹⁶ Wilson, *Under the Old Flag*, vol. 2, 192

⁹⁷ Jones, *Yankee Blitzkrieg*, 33

⁹⁸ Jones, *Yankee Blitzkrieg*, 33

⁹⁹ Jones, *Yankee Blitzkrieg*, 51

¹⁰⁰ Wilson, *Under the Old Flag*, vol. 2, 200

Selma. Wilson exploited this confusion to maintain mass and initiative relative to Forrest, mitigating much of the risk associated with splitting his forces. On March 26th, Wilson's divisions rejoined in Jasper in full force. It was only then Forrest determined Wilson's objective was Selma and rode out from West Point to meet him on the battlefield.¹⁰¹

After a successful rejoin and recoupment, Wilson's corps pushed out two days later to Selma by way of Montevallo, an important source of coal and iron resources.¹⁰² Before arriving at this intermediate objective, Wilson ordered McCook to send a brigade, led by Colonel Croxton, to Tuscaloosa to destroy lines of communications and burn the military college.¹⁰³ In doing so, Wilson sought to further exploit his advantage in concentration by breaking up major lines of communication essential to Forrest's defensive efforts to consolidate his command and throttle Wilson.¹⁰⁴ Wilson believed this would further confuse Forrest, who still had not contested Wilson's raid six days into the campaign.

Eight days into the campaign, Wilson arrived at Montevallo on the 30th and met the first line of resistance led by Confederate General Phillip Roddy.¹⁰⁵ Wilson's command, fully formed after the rejoin in Jasper, easily outmatched Roddy.¹⁰⁶ In the course of battle, the Confederacy learned Selma was Wilson's objective. In response, Roddy initiated a retrograde followed by a series of delaying tactics to buy time for Forrest to consolidate a defense. By the 31st, Roddy was run off after having failed to slow Wilson's advance. By now, both Wilson and Forrest understood concentration and operational maneuver would be deciding factors. Consequently, Wilson picked up the pace from Montevallo so

¹⁰¹ Jones, *Yankee Blitzkrieg*, 52

¹⁰² O. R. series 1, vol 49 part 1, 343

¹⁰³ O. R. series 1, vol 49 part 1, 342. *War Eagle*.

¹⁰⁴ O. R. series 2, vol 49, 1160

¹⁰⁵ O. R. series 1, vol 49 part 1, 356

¹⁰⁶ Longacre, *Mounted Raids*, 314

that he might arrive in Selma before Forrest could consolidate his disparate forces around the state.

Forrest, however, was still suffering from his earlier decision to disperse his troops and continued to do so as Wilson approached Selma.¹⁰⁷ Croxton's operations in Tuscaloosa further complicated Forrest's plans to consolidate his forces by drawing away a Confederate brigade to defend the city. Wilson further exacerbated Forrest's dilemma by sending forces from McCook's division into Centerville to destroy lines of communication, thereby isolating Selma from Confederate troops maneuvering south and covering Wilson's rear flank.¹⁰⁸ Wilson effectively shut down a vital route that Forrest's dispersed divisions needed in order to rejoin Forrest in defense of Selma. Wilson's actions, from maneuver to dispatching forces against secondary targets, ensured Forrest paid the maximum penalty for his indecision at the start of the campaign.

In spite of this, Forrest managed to put up an intermediary defense at Ebenezer Church, a small clearing located on the march to Selma.¹⁰⁹ After a short skirmish, Forrest's defenses were summarily overcome, and he himself was wounded in hand to hand combat.¹¹⁰ Given the successive drubbings Forrest received at the hands of Wilson, what little resistance Forrest offered can only be made intelligible in light of Forrest's position relative to Wilson with respect to force concentration. Ebenezer Church and Montevallo were doomed efforts Forrest surely understood as hopeless in themselves, but they were intended primarily as delays. It seemed Forrest was hoping to hold Wilson long enough for the Confederates to concentrate their defenses. After a resounding defeat at the hands of Wilson's forces at Ebenezer Church, Forrest ceded the

¹⁰⁷ Wilson, *Under the Old Flag*, vol. 2, 186

¹⁰⁸ Longacre, *Mounted Raids*, 315

¹⁰⁹ O. R. series 1, vol 49 part 1, 359

¹¹⁰ O. R. series 1, vol 49 part 1, 384

remaining distance to Selma, having considered the delay no longer worth the losses in open battle.¹¹¹

On the morning of April 2, Wilson approached the outskirts of Selma, his primary objective. The tyranny of distance protected Selma from Union attack for the first two years of the war, and the town and its industry went largely untouched.¹¹² The city, however, did not enjoy complete isolation from battle. Operating from Union-controlled waterways, Union naval forces harassed central Alabama with bombardments. These modest efforts were enough for the state to consider investing in civil defenses.¹¹³ By 1863, Grant's western army was strategically positioned for a possible attack on central Alabama, and the Confederacy recognized Selma and its resources were at strategic risk.¹¹⁴ As a result, Selma commissioned the preparation of perimeter defenses and parapet fortifications. By 1865, the defensive structures were sufficiently mature, emerging from the banks of the Alabama River that defined the southern edge of the city and expanding around the city forming a semi-circle over the north of Selma.¹¹⁵ Coming from the north, Wilson did not have to cross the Alabama River, but there were only two marginally serviceable avenues of approach available to him: the nearly impassable eastern approach through Range Line Road (Range Line Road/Mary Foster Road today) led by Upton, and the marginally adequate Western approach over Summerfield Road (Summerfield Road/Lapsley Street/Union Street today) led by Long.¹¹⁶ Wilson's Third Division, led by McCook, was half a day in trail of the other two divisions, having been diverted to Centerville to cut off rear avenues of attack.

¹¹¹ O. R. series 1, vol 49 part 1, 388

¹¹² <http://www.encyclopediaofalabama.org/face/Article.jsp?id=h-2331>, accessed March 15, 2014

¹¹³ <http://www.encyclopediaofalabama.org/face/Article.jsp?id=h-2331>, accessed March 15, 2014

¹¹⁴ Jones, *Yankee Blitzkrieg*, 79

¹¹⁵ Jones, *Yankee Blitzkrieg*, 77

¹¹⁶ Jones, *Yankee Blitzkrieg*, 77

Due to the unsuitability of the roads for a mounted assault, Wilson's plan called for an dismounted raid on Forrest's defensive positions.¹¹⁷ Long led the main charge of 1,500 men from the West while Upton led two echelons consisting of 300 men from the east.¹¹⁸ The unmounted, two-pronged approach was designed to catch the defenders by surprise as the terrain surrounding Range Line Road was considered almost impassable by mounted cavalry forces. Furthermore, the two echelon push from the east was designed to



FIGURE 7 - TACTICAL MANUEVER AT SELMA. SOURCE: REPRINTED FROM *YANKEE BLITZKRIEG*.

make Upton's advance "look big" to Forrest, but Upton's role was to draw defenders away from Long's main attack in the west.¹¹⁹ By forcing Forrest onto the horns of a dilemma, Wilson sought to divide Forrest's split defenses, punch a hole through the defenses in the west, and then defeat the remaining defense in sequence.¹²⁰

As Wilson's forces approached the city's perimeter, Forrest's options for defending the city narrowed. With only 5,000 trained troops to defend Selma, Forrest was reduced to conscripting local civilians to

¹¹⁷ O. R. series 1, vol 49 part 1, 388

¹¹⁸ O. R. series 1, vol 49 part 1, 344

¹¹⁹ Wilson, *Under the Old Flag*, vol. 2, 226

¹²⁰ Wilson, *Under the Old Flag*, vol. 2, 222

man the parapets.¹²¹ The two main avenues of attack available to Wilson further complicated Forrest's defenses, preventing him from concentrating in any one area.¹²² To counter, Forrest devised a preemptive strike on Long's western division in an attempt to confuse and tie up Long's forces just enough to disrupt the synchronicity of Wilson's corps. In doing so, Forrest hoped to receive the Union divisions one at a time, concentrating and repelling each Union division in sequence, rather than in parallel.

The attack lasted only a few hours, but it was Forrest, not Wilson, who attacked first. At Forrest's direction, an element of Chalmer's Confederate division launched an attack into the rear of Long's division.¹²³ Fearing a loss of control in the confusion, Long readied a hastily-coordinated attack to regain the initiative. Unsure of Upton's preparedness and without further guidance, Long gave the order to attack, his dismounted troops accelerating into a full run at the Confederate positions.¹²⁴ Long's hastily prepared and executed assault was by Forrest's design intended to dislocate Long's action from Upton's, but the plan backfired. With repeating carbines, Wilson's soldiers put more firepower into Forrest's defenses than they could reasonably return. Confederate outer defenses quickly eroded under the withering rate of fire.

¹²¹ Jones, *Yankee Blitzkrieg*, 80. The exact number of Confederate forces defending Selma is in dispute. Wilson marks the number of 5,000 while Forrest's biographer puts it as low as 1500. The variance is perhaps problematic, but even at the extreme ends of this range, much is implied. Under Wilson's interpretation, he charged headlong into standing defenses numbering almost three times as large as his assaulting force. Under the more conservative numbers, Wilson attempted to take a fortified position with like numbers, itself a violation of the unwritten rule regarding the 3:1 ratio of offensive and defensive forces required for a successful assault. Under classical doctrine, Wilson should have thrown more of his weight into Selma, perhaps waiting for McCook and Croxton to return before attacking.

¹²² Jones, *Yankee Blitzkrieg*, 80

¹²³ O. R. series 1, vol 49 part 1, 388

¹²⁴ O. R. series 1, vol 49 part 1, 360

Upton, also without orders and seeing Long had initiated the offensive, leapt into the fray at full speed, closing in from the eastern flank.¹²⁵ Embracing the aggressive spirit of Upton's and Long's improvised execution, Wilson himself rode forward to the front lines with his staff and artillery units.¹²⁶ His presence rallied his troops enmeshed in melee combat between Selma's outer and inner lines of defense, and further boosted their already soaring morale. Wilson matched their motivation, ordering a second push from Upton and Long to breach the inner perimeter. In a hail of bullets, Upton's men punched a hole and the rest of the Union forces poured through. The remaining Confederate forces fled their positions and abandoned the city to the east through Burnsville Road (now Water Avenue).¹²⁷ After thoroughly routing one of the most storied Confederate commanders, Wilson penned a letter to his troops:

... like an avalanche the intrepid soldiers of the second division swept over the defenses on the Summerfield road, while the fourth division carried those on the Plantersville road. The enemy, astonished and disheartened, broke from their strong works, and Selma was fairly won... Soldiers, you have been called upon to perform long marches and endure privations, but your general relied upon and believed in your capacity and courage to undergo every task imposed upon you ... Your achievements will always be considered among the most remarkable in the annals of cavalry.¹²⁸

After J.E.B. Stuart fell to Sheridan in 1863, Forrest remained as the sole testament to the South's superior horsemanship. At Selma, Wilson knocked Forrest out of the war for good, and with him went the last vestige of the South's prewar Cavalry dominance. Forrest evaded capture and continued to command Confederate cavalry, but he was

¹²⁵ O. R. series 1, vol 49 part 1, 360

¹²⁶ Wilson, *Under the Old Flag*, vol. 2, 228

¹²⁷ *Battles and Leaders*, vol. 4, 760

¹²⁸ O. R. series 1, vol 49 part 1, 393

never again able to recoup his forces to offer a credible defense of the state. The remainder of Wilson's campaign met with little meaningful resistance.

Wilson's men stayed in Selma for another 8 days resting, gathering intelligence on Forrest's movements, planning their next move, and destroying the city's industrial and economic capacity.¹²⁹ With lines of communication broken all throughout the South, news of Grant's impending victory over Lee was slow to reach Wilson.¹³⁰ Absent orders to stand down, Wilson continued to dismantle Selma's war potential and prepare for the next phase of his campaign. Grant's standing suggestion to Wilson indicated Wilson should turn south and assist Canby's march north from Mobile Bay. This left Wilson at a crossroads: he could either support Canby or extend the operational and strategic gains by advancing into Georgia. In Wilson's assessment, Canby was handling the mission successfully. Adding 12,000 cavalry troops to Canby's limited operations was of little value compared to the strategic potential of sacking Montgomery and Columbus. Thus, Wilson eschewed his earlier guidance from Grant, opting to use his troops to apply his forces against the last remaining population and industrial centers in the Confederate southeast.¹³¹

Late in the war, Montgomery and Columbus were strategically important targets. As the first capital of the Confederacy, Montgomery had a significant emotional and moral role for the Southern public. Columbus served as a financial hub for Confederate economic activity. Furthermore, sacking Columbus effectively cleaved the Confederate's

¹²⁹ O. R. series 1, vol 49 part 1, 343; In this time, the Civil War ended. Lee surrendered to Grant the day after the Battle of Selma, but it would be some time before Wilson was notified. Some authors characterize the damage done at the hands of Wilson needless and detrimental to post-war reconstruction.

¹³⁰ Wilson, *Under the Old Flag*, vol. 2, 238

¹³¹ O. R. series 1, vol 49 part 1, 362

eastern and western forces, fragmenting the remaining resistance.¹³² Wilson, still unaware the war was essentially over, departed Selma for Montgomery, encountering token resistance along the way.

The news of Selma's fall arrived in Montgomery before Wilson. Once Forrest's defeat was made public, the citizenry of Montgomery fell into a state of despair.¹³³ Until the eve of Wilson's arrival in Montgomery, the local media portrayed Wilson's campaign as one on the edge of collapse at the hands of Forrest. Now that invasion was near, the reality of defeat set in. Largely untouched by the war, the general population panicked at the uncertainty surrounding Wilson's brand of occupation. After exploring options for its defense, however, the city leadership recognized battle was hopeless. City leaders opted to preserve the city and laid down arms, submitting to Wilson's advance guard.¹³⁴ With one eye on the post-war reconstruction effort, Wilson took the opportunity to put the legitimacy of the Union on display. He enforced strict discipline of his occupation force and put on a parade displaying the prowess of Union cavalry. The public was suitably impressed by its skill, its restraint, and Wilson's even-handed treatment of the population.¹³⁵ Wilson's show of force did much to pacify the city and mitigate the risk of retaliation and post-war insurgency.¹³⁶ Negotiations with Confederate authorities further legitimized the occupation, and Wilson's troops set about destroying war materiel.¹³⁷ While in Montgomery, he received unsubstantiated reports that Lee had surrendered to Grant.¹³⁸ Without confirmation or contradicting orders, however, Wilson secured Montgomery and began planning for his next objective, Columbus.

¹³² O. R. series 1, vol 49 part 1, 344

¹³³ Yankee Blitzkrieg, 107

¹³⁴ Longacre, *Union Stars*, 210

¹³⁵ Jones, *Yankee Blitzkrieg*, 112-116

¹³⁶ Jones, *Yankee Blitzkrieg*, 112-116

¹³⁷ O. R. series 1, vol 49 part 1, 363

¹³⁸ Longacre, *Union Stars*, 211

After two days' rest in Montgomery, Wilson pushed east toward Columbus, "breaking things" as he went. Meeting little resistance through Tuskegee, Auburn and Opelika, Wilson approached Columbus four days later fully rested. It took less than an hour and only one brigade to sack the city. (Wilson could hardly contain himself in the report on file with the Official Records. In what is either unabashed self-aggrandizement or zealous advocacy for his vision for cavalry operations, he took a moment to note Columbus was taken at a location 400 miles from the corps' point of departure in Gravelly Springs with a well-trained force of only 300 men.¹³⁹) As with Selma, the city fell into chaos in the aftermath of battle. After restoring order, his troops destroyed the city's industrial and rail capacity, by then the second most important source of war materiel after Richmond. In the days after entering the city, Croxton's Brigade, dispatched to Tuscaloosa three weeks prior, finally made its way back to Wilson after ripping through over 600 miles of middle Alabama and Georgia, destroying war materiel along the way.

Columbus was another success in a streak of unqualified successes placing Wilson on a short list of the greatest Civil War cavalry commanders. Columbus, however, was Wilson's last battle of any tactical significance even if he did not know it. Shortly after Croxton's arrival, Wilson led a final march to Macon, the state's provisional capital. In the time it took him to get there, Lincoln was dead and Sherman received notice of surrender from General Johnston in the Carolinas.¹⁴⁰ Although major combat operations were essentially over for Wilson, public fame seems to have eluded him. For all the success he enjoyed in battle throughout the war, it was the non-battle of Macon making Wilson a public name.¹⁴¹

¹³⁹ O. R. series 1, vol 49 part 1, 365

¹⁴⁰ Wilson, *Under the Old Flag*, vol. 2, 281

¹⁴¹ Longacre, *Union Stars*, 224

On the road to Macon, Wilson enjoyed complete freedom of maneuver and battlespace dominance. With the Confederacy practically dead, Wilson's approach and entry into Macon met little resistance.¹⁴² Despite calls from the local media to rally a popular defense of the city, Macon stood down without a fight.¹⁴³ Once inside, Wilson's troops learned of the armistice east of the Chattahoochee River, and Wilson acknowledged the end of his campaign, but not his mission.¹⁴⁴ Wilson anticipated that former Confederate leadership were likely to flee their capital in Richmond through western Georgia on their way to Texas.¹⁴⁵ In preparation, Wilson posted a number of small units throughout the lines of communication between Richmond and Macon, establishing an intelligence network.¹⁴⁶ It paid off handsomely. He quickly learned Jefferson Davis fled Virginia and was headed in Wilson's direction. Wilson stoked the pursuit by offering a reward for capture. After picking up the former president's escorts in Georgia and a short pursuit, Wilson's troops captured Davis in the middle of the night.¹⁴⁷

News of the capture spread quickly and was a welcome story in the aftermath of Lincoln's assassination. Not one to shy away from the limelight, Wilson worked with the media to bring attention to his

¹⁴² Wilson, *Under the Old Flag*, vol. 2, 278

¹⁴³ Jones, *Yankee Blitzkrieg*, 163

¹⁴⁴ Wilson, *Under the Old Flag*, vol. 2, 283

¹⁴⁵ Jones, *Yankee Blitzkrieg*, 170

¹⁴⁶ O. R. series 1, vol 49 part 1, 515

¹⁴⁷ While *Yankee Blitzkrieg* suggests that Davis had plans to flee to Texas and continue the Lost Cause, there is some speculation that Jefferson Davis, in fact, wanted to get caught. In the closing days of his Presidency, Davis was advised by his generals to formally surrender the Confederacy so that he might end the suffering of his beleaguered troops. *Battles and Leaders of Civil War* suggests that Davis might have found himself stuck between the desire to end the suffering of his army and the desire to avoid disgracing their service through surrender. It further suggests that Davis attempted to resolve this dilemma by executing only a half-hearted escape plan with minimal military support, hoping to get caught in the process. This is presumed to help him maintain the dignity of the cause by not willfully surrendering, but also providing a compelling context to end it nevertheless.

command.¹⁴⁸ Wilson was later accused of exaggerating certain details for purposes of embarrassing the Confederacy, specifically misrepresenting events to suggest Jefferson Davis was dressed in his wife's clothes to evade capture. Nevertheless, the capture of Davis was Wilson's most famous exploit in the war, overshadowing his singularly dominant campaign across the enemy's heartland.¹⁴⁹

His performance was substantial. From March 21 to April 22 his troops covered 525 miles through the heart of the enemy. The march from Montgomery to Macon alone, a 215 mile strike, took his troops a mere 16 days.¹⁵⁰ They captured 6,820 Confederate troops (including 5 general officers) and 288 guns and shut down the South's remaining materiel capacity to resist.¹⁵¹ Furthermore, the occupation of key population centers in Alabama and Georgia, coupled with the disciplined conduct of his occupation force, precluded a protracted post-war guerrilla campaign. His corps embodied the legitimacy of the Union and pacified a war-weary population, paving the way for a more peaceful reconstruction period. It is very rare in military history that an innovator is granted the opportunity to put the tactics and techniques he pioneered into practice, and in such a dramatic fashion, succeeding brilliantly in operational command.

A foundational truth regarding Wilson's raid is that half of the success was due to the sheer magnitude of his command. He himself acknowledges the deciding factor in his campaign in Alabama was the sheer size of his operations.¹⁵² With 12,000 men at his disposal, his emphasis on decentralized maneuver was instrumental in confusing Forrest, conducting multiple lines of operation, and covering his flanks

¹⁴⁸ Longacre, *Union Stars*, 224

¹⁴⁹ Longacre, *Union Stars*, 224

¹⁵⁰ Wilson, *Under the Old Flag*, vol. 2, 294

¹⁵¹ Wilson, *Under the Old Flag*, vol. 2, 293

¹⁵² Wilson, *Under the Old Flag*, vol. 2, 225

while retaining enough force to mount offensive action against his primary objectives.

Conclusion

This chapter opened by examining Scott's Anaconda plan and its focus on indirect strategic effect. Among academics there is some disagreement about the centrality of Anaconda, but even if viewed as a loose concept of operations, its utility as a strategic framework is undeniable. It defined the North's strategy as an all-encompassing effort that held the entire strategic strength of the Confederacy at risk, not just its military forces. In doing so, it denied the Confederacy the ability to conduct its own strategy of annihilation through decisive battlefield victory. In that light, it is a reasonable extrapolation of Anaconda to suggest independent cavalry operations against targets deep in enemy territory were a key to its implementation and eventual success.

Yet, at the outset of the Civil War, it is reasonable to suggest Union cavalry was not organized to support Anaconda's objectives. In the classic examination of ends, ways, and means, there was a disconnect in the cavalry as a "way". The Army's institutional roles for cavalry relegated it to various supporting roles, leaving cavalry organizationally incapable of achieving strategically important effects on the Confederacy. Moreover, early defeats at the hands of more experienced Confederate cavalry leaders highlighted the institutional Army's need for change.

Union cavalry eventually emerged from relative ignominy to battlefield dominance, but not by accident. Leadership and advocacy were essential to securing sustained innovation. This chapter focused on Wilson, but he was hardly a lone voice in the woods. In many ways he reaped the benefits of the work of many cavalry officers that came before him. Grierson's successful raid in 1863 established the independent cavalry raid as a legitimate tactic. Sheridan's centralized command of Meade's cavalry forces in Richmond showcased the benefits of large-force

cavalry employment. The Institutional Army itself realized mid-way through the war that the procurement and administration of cavalry forces required a specialized set of expertise in the form of the Cavalry Bureau.

But one cannot turn away from the fact that throughout most of the successful campaigns and innovations, Wilson is standing not far from the spotlight. He was central to the Cavalry Bureau's advances in technology procurement and contract management. He was a division commander in Sheridan's illustrative cavalry operations in Virginia. His own command experiences in Atlanta and Tennessee were key iterations of centralized command structures. The contributions of more well-known cavalry leaders notwithstanding, it is from this perspective Wilson stands out as the embodiment of cavalry innovation writ large, and analysis of his tenure is therefore important to the comparison of airpower and cavalry.

This chapter examined Wilson from both a top-down and a bottom-up perspective, mirroring in some ways Wilson's own approach to cavalry. The top-down perspective comes from placing Wilson in the larger context of the war and the evolution of Union cavalry. The examination of ends, ways, and means is essential to understanding why cavalry and the institutional Army evolved the way it did. It establishes a credible framework to explain the vertical alignment that took place and is needed in any attempt at building and sustaining organizational innovation. Wilson's own analysis of cavalry compelled him to seize the opportunity from an institutional level as chief of the Cavalry Bureau to set the foundation for a stronger mounted force.

The bottom-up approach comes from examining the iterative developments of cavalry in battle. Grierson's formative campaign lent legitimacy to raids, previously characterized as a waste of time and

resources.¹⁵³ Sheridan highlighted the value of concentrated command structures over distributed arrangements, of which Wilson was a contributor. Wilson's own successes in support of General Thomas in the fight against Hood in Tennessee are also informative moments from a bottom-up perspective.

In this chapter, the top-down and bottom-up perspectives used to examine the Civil War and Wilson come together at the moment of Wilson's raid. The North's parallel approaches to attriting the South's fielded forces and reducing its capacity for war created a strategic requirement for deep strike capability. Although it was two years in the making and required a slow, iterative approach to developing technology, a force structure, and a clear mission demonstrating the advantages of Wilson's fleet of horseman, the battlefield decisions and strategic impact of Union cavalry in Alabama exemplify the timeless alignment between ends, ways, and means.

¹⁵³ Urwin, *The United States Cavalry*, 118

Chapter 3: Analysis

Introduction

The first chapter examined the origins of air-mindedness as a concept. Doctrinally defined tenets of airpower make air-mindedness tangible. Chapter 1 examines issues that at first appear air-centric, but resting on this air-centric interpretation is to look through the wrong end of the telescope. A more useful way to understand the previous discussion of air-mindedness and the tenets of airpower is to study how the advantages of air-mindedness inform timeless aspects of military organization, leadership, and decision making. In that light, the discussion of air-mindedness and its influence on the tenets of airpower helps disassociate specific technologies from the analysis and pull the discussion into more inclusive forms.

Framing the previous discussion this way serves two purposes. The first lens provides an analytical framework for comparing cavalry and air-mindedness in terms that go beyond technical artifact. Indeed, there are a number of important cultural influences cavalry had on early Airmen. Hap Arnold was initially commissioned into the cavalry before earning his wings and spent the interwar years recruiting officers from Cavalry into the aviation branch.¹ Manfred von Richthofen, himself a cavalryman as a young officer, spoke of airpower in cavalry terms.² At the Air Corps Tactical School, the heart of Air Force intellectual development in the interwar years, some of the curriculum and much of the social life revolved around polo and horsemanship.³ William C. Sherman's own 1919 manual on the employment of the Air Service summarizes in Sherman's general principles of air combat that aircraft

¹ Henry H. Arnold, *American Airpower Comes of Age: General Henry H. "Hap" Arnold's World War II Diaries* (Maxwell Air Force Base: Air University Press, 2002) 2, 21

² Manfred von Richthofen, *The Red Air Fighter* (Greenhill Military Paperbacks. London ; Mechanicsburg, Pa: Greenhill Books ; Stackpole Books, 1999), 42, 157

³ Maurer Maurer, ed., *The US Air Service in World War I The Office of Air Force History*, vol. 2 (Headquarters Air Force, Washington DC, 1978), 355

will “perform what was once the chief function of cavalry.”⁴ C.S. Forester’s fictional protagonist in his novel *The General* was infuriated by an impertinent subordinate who told him aviation was about to usurp the sole remaining functions of cavalry.

Clearly, in the worldview of early Airmen, the cavalry was not far from their minds and often served as a useful analogy. This discussion hints at a greater connection between Airman and cavalryman, but without a stronger mechanism to bring these two forms of warfare closer together, the observation stops short of drawing any useful lessons; the discussion risks stagnating in the realm of historical novelty. By diving more deeply in the intellectual pretensions of the respective forms of warfare, more meaningful conclusions can be drawn from this analysis.

The second purpose of viewing the discussion under a more inclusive lens is to allow the analysis of air-mindedness, air operations, and cavalry operations to take place using like terms. This chapter builds on the first chapter’s discussion of air-mindedness as clarified by the tenets of airpower as well as the historical case study of Union cavalry and General Wilson in chapter 2. Specifically, this chapter will revisit the tenets of concentration, centralized command/decentralized execution, and flexibility as observed by General Wilson. By examining them together, this chapter articulates the timelessness of airpower’s intellectual constructs.

While the conclusions drawn from the examination should stand on their own, significant air theorists and air campaigns discussed in the previous discussion of air-mindedness are re-introduced in this discussion to assist in the translation of air-mindedness and cavalry operations. In doing so, this chapter more clearly triangulates the intellectual kinship Wilson shared with airpower and air-mindedness.

⁴ Maurer, *Air Service in World War I*, vol. 2, 355

Centralized Command and Decentralized Execution

Centralized control is commanding airpower and should be accomplished by an Airman at the component commander level who maintains a broad focus on the [Joint Force Commander's] objectives to direct, integrate, prioritize, plan, coordinate, and assess ...

... Decentralized execution is the delegation of authority to designated lower-level commanders and other tactical-level decision makers to achieve effective span of control and to foster disciplined initiative and tactical flexibility.

— AFDD-1

I was to have a free hand with the largest latitude of an independent commander, while through Sherman's authority, I was permitted to call in all outlying details and detachments and to organize a separate army corps which should include all the mounted troops of the four departments, constituting his military division.

— General Wilson

Centralized command and decentralized execution can safely be regarded as the primary tenet of airpower. The history surrounding the emancipation of the Air Force from the Army is rooted largely in the desire to realize centralization. Airmen need to command Airmen in air combat. The successful application of all other tenets, and thus the effectiveness of the air component, extends from this central point. The success of air operations in Operations TORCH and DESERT STORM owe a great debt to centralized command/decentralized execution structures, and these conflicts are a common reference point for the tenet. Hinote's analysis of CCDE moves beyond historical examination and explores the tensions it creates among the tenet's ideals, institutional understanding of the tenet, and the operational exigencies that required compromise. Hinote perhaps takes a more flexible, nuanced position over official doctrine as to what centralization looks like, but there is little doubt it is important to maintain as an umbrella

condition, despite whatever distributed arrangement the air component devises afterward. Without CCDE established first, the air component is unlikely to realize the advantages of the other tenets.

The primary importance of centralization was certainly not lost on Wilson, or Union Cavalry forces in general. At the start of the war, cavalry squadrons were typically dispatched at the Brigade level, serving to bolster the prestige of infantry commanders.⁵ Early attempts at innovation in the cavalry were challenged by longstanding indifference on the part of the Union's senior leaders.⁶ As the commanding general of Federal forces, General Winfield Scott did not place much emphasis on cavalry operations, mostly due to overly optimistic assumptions about the probability of a quick victory. General Sherman did not have much use for cavalry in his Atlanta campaign, and he did not attribute much to his distributed cavalry forces.⁷ Grant himself was more or less agnostic on the subject of cavalry, and McClellan was dismissive.⁸ The general trend of ambivalence at the highest levels of command did little to create change. Stuart's raid, however, sparked the emotional reaction necessary to foster innovation.

After J.E.B. Stuart's embarrassing ride through Federal lines, Union cavalry commanders sought answers. Stuart's ride was but one example of an uninterrupted streak of Confederate dominance over Union adversaries. In his success against the Union, Stuart's organization forced Federal leaders to take notice of the advantages of centralization.⁹ These early defeats were attributed in large part to the superior, centralized organization of Confederate mounted troops.¹⁰

⁵ Wittenberg, *Union Cavalry Comes of Age*, 6

⁶ Wilson, *Under the Old Flag*, vol. 2, 9

⁷ Wilson, *Under the Old Flag*, vol. 2, 27

⁸ Wittenberg, *Union Cavalry Comes of Age*, 4

⁹ Wittenberg, *Union Cavalry Comes of Age*, 3

¹⁰ Urwin, Gregory J. W. *The United States Cavalry: An Illustrated History*. Poole, Dorset : New York, N.Y: Blandford Press ; Distributed in the U.S. by Sterling Pub. Co, 1983, 114

Opinions began to take shape, and emulation of the Confederate structure was seen as a vital step toward achieving parity. Wilson theorized centralization could only be realized if cavalry commanders were placed in charge of their own affairs. He rightly observed other branches of the Army were free to educate and develop their leaders in accordance with their own priorities.¹¹ Complementing the education of leaders within each branch was their experience commanding in battle. Their ability to assess objectives and priorities and then organize and employ forces in response to their assessment was a key element of each branch's success. The seniority-based selection system in effect at the start of the war precluded cavalry from enjoying the same autonomy.¹²

The cavalry, Wilson believed, deserved no less of an opportunity to develop its expertise and leadership in cavalry operations. Moreover, because of the unique capabilities of cavalry and the rapid tempo of operations, it was essential only experienced cavalymen be placed in command of cavalry troops.¹³ In Wilson's view, the repeated failures of General Scott and the War Department to identify and place seasoned cavalymen at the head of cavalry units led to an unsatisfactory state of mission readiness.¹⁴ The results of this abuse at the hands of indifference were reflected on the battlefield through the end of 1862.

Wilson may have been most articulate about the need to centralize cavalry forces, but the movement to centralize the cavalry certainly did not begin with him. Grierson's independent campaign was highly praised by Grant as a vital contribution to his strategic success at Vicksburg, proved the value of independently led raids, and established a template for the cavalry force writ large.¹⁵ The War Department established a

¹¹ Wilson, *Under the Old Flag*, vol. 2, 8

¹² Wilson, *Under the Old Flag*, vol. 2, 9

¹³ George T. Denison, *Modern Cavalry* (London: MacMillan and Co., 1877), 13

¹⁴ Wilson, *Under the Old Flag*, vol. 2, 10

¹⁵ D. Alexander Brown, *Grierson's Raid: A Cavalry Adventure in the Civil War* (Urbana, IL: University of Illinois Press, 1954), 20

separate Cavalry Bureau because of institutional concerns over the Quartermaster Department ability to service divergent requirements between cavalry and infantry forces. Sheridan's success at the battle of Richmond, at which Wilson was a division commander, highlighted the promise of large force cavalry operations. Clearly, a number of high visibility successes set the table for Wilson as he transitioned from Grant's star staff officer to battlefield cavalry commander.

Wilson deserves credit for maximizing the opportunities and artifacts created by these innovators. As chief of the Cavalry Bureau, he reinvigorated the organization, correcting abuses and indifference to vital technological and operational requirements. The operational effectiveness of cavalry was enhanced by the Bureau's procurement of regional supply depots. The quality of mounts and contract management was greatly improved on his watch. The development and proliferation of the repeating carbine was perhaps the greatest contribution Wilson made as cavalry chief, as it fundamentally expanded the capability and quality of mounted troops through the expansion of mobility and operational firepower. Furthermore, it was made possible only because the Cavalry Bureau took an interest in it and advocated for it. Given the rifle was invented in 1861 and the War Department had been more or less ambivalent about it, it is questionable whether the Quartermaster Department would have made similar budget decisions under the command of an infantry officer. These examples speak more directly to other tenets of airpower, particularly concentration, but they are decidedly the result of the proper utilization of centralization as reflected in the general principle that Airmen (or cavalrymen) must lead other Airmen (or cavalrymen).

In the battle of Richmond, Wilson served under Sheridan's cavalry corps as a division commander, experiencing the advantages of centralization firsthand. Although the character of Sheridan's operations were focused on attritional force-on-force objectives, the sheer weight of

his command ensured a string of decisive victories in support of Grant's campaign and was recognized as a central element in Grant's strategic success in Virginia. Upon reassignment to command Sherman's cavalry for the Military Division of Mississippi, Wilson brought with him Sheridan's preference for centralization.

As it happened, centralization was the reason Grant reassigned Wilson to Sherman in the first place. Arriving with a promise from Grant that he would increase Sherman's combat capacity by 50%, Wilson set about consolidating his command under his central control and removing unneeded layers of bureaucracy. Upon completion of his reorganization, Wilson observed centralization offered cavalry forces the opportunity to provide decisive force at all levels of command. Wilson's force of 10,000 mounted men could respond to any and all objectives with the full weight of a corps. Previous Brigade-level distributions of mounted forces precluded this.

On the battlefield, Wilson himself attributed the lion's share of his success to both the independence of his command and the size of his forces.¹⁶ As a truly independent cavalry force free from less mobile units, Wilson's entire command could operate at the same increased rate of advance. In combined marches, traditional corps were limited to 10 miles a day, whereas Wilson's campaign averaged 30 miles a day from Gravelly Springs, Alabama to Macon, Georgia to include the days he stopped to assault Selma and Montgomery.

Centralization of the Mississippi Division's cavalry forces may have been what saved the Alabama mission to begin with. Wilson's intense focus on cavalry operations produced a force far more capable than the mere "show of force" Grant originally envisioned. Instead, upon General Thomas's inspections of Wilson's troops in the winter of 1865, it became apparent Wilson had produced a corps capable of a raid, not merely a

¹⁶ Wilson, *Under the Old Flag*, vol. 2, 310

show of force. Consequently, Grant and Thomas amended their guidance and defined Wilson's objectives in more strategic terms, directing him to destroy industrial capacity in Selma, Montgomery, and Columbus. The new guidance bestowed autonomy upon Wilson, with Grant allowing him the "latitude of an independent commander" to conduct the raid.¹⁷

As humbling as Grant's faith in Wilson was, the elevation of Wilson's mission from "demonstration" to "raid" was still an understatement.¹⁸ When Wilson's corps stepped off from the point of departure, it was a qualitatively unique cavalry force. Wilson's order of battle was certainly unprecedented, and concentration of force was a critical factor to his innovation. Through economies of scale and technological integration, Wilson produced a force far more capable than the order of battle would indicate. As such, Wilson was quite right in believing his armada was conducting more than a hit and run strike on a few factories. His forces were nothing short of an invasion.¹⁹

The quantity and quality of Wilson's command gave him key operational advantages over Forrest. Wilson effectively leveraged his corps' speed, maneuver, and range over the map to gain and maintain the initiative over Forrest. Perhaps more importantly, centralization under Wilson increased the cavalry corps' capacity to incorporate more divisions and conduct more intricate maneuvers. Centralization was vital to maximizing the capabilities gained through concentration.

Concentration of effort was a primary element in Wilson's campaign in Alabama, as will be discussed, but a significant factor to his operational success was the implementation of parallel lines of operation through decentralized execution. His initial campaign of obfuscation and misdirection through maneuver was a key element in gaining and maintaining the initiative against Forrest. It was attributable in large

¹⁷ Wilson, *Under the Old Flag*, vol. 2, 181

¹⁸ Wilson, *Under the Old Flag*, vol. 2, 181

¹⁹ Wilson, *Under the Old Flag*, vol. 2, 308

part to Wilson's delegation of authority, coupled with a loose set of guidelines about when and how to rejoin in Jasper, 100 miles deep into the state. Each of his three division commanders was given little direction other than to take separate routes, go to Jasper, and get there quickly. The dispersion of forces and delegation of authority under this guidance was essential to maximizing the speed and range of Wilson's forces. As a result, Wilson rode for eight days and 150 miles into Alabama before meeting resistance from Forrest, giving Wilson "the bulge" on Forrest, and putting the Confederacy on its back heel for the remainder of the invasion.

The battle of Selma offers similar examples at the tactical level. When Long's rearguard came under attack from Chalmers' forces, Long took it upon himself to break free and initiate the attack. Without prior knowledge of Upton's preparedness, Long's division assaulted the city in accordance with Wilson's central guidance, but without specific direction. Long observed Upton's advance. Having only general guidance to support Long from the east, Upton launched his own advance, dividing Selma's defenses and ensuring victory. Acting under the authority of Wilson's plan, each commander acted independently without further coordination with Wilson or each other.

Forrest could not have predicted this response. In fact, he was planning on just the opposite. He hoped a preemptive strike would create confusion within Wilson's command, and that Wilson might be forced to delay the offensive until the next day when more confederate troops could arrive.²⁰ Wilson's subordinates, hand-selected by Wilson and groomed to command cavalry in such an independent manner, elected to speed up the tempo of operations, negating the effect of Forrest's

²⁰ Brian Steel Wills. *The Confederacy's Greatest Cavalryman: Nathan Bedford Forrest* (Lawrence, KS: University Press of Kansas, 1992) 306

tactics.²¹ The battle of Selma was over in less than an hour and effectively destroyed Forrest's remaining capacity to resist Wilson.

The previously discussed vignettes of Operations TORCH and DESERT STORM offer parallel examples of centralization. Centralized control ensured appropriately sized and tailored forces were made available to act decisively against objectives. Hinote's examination of centralization in ENDURING/IRAQI FREEDOM also offers an important articulation of this tenet in a different context. All three point to the power and advantages of centralized command and decentralized execution of airpower. The emphasis Horner, Spaatz, and Hinote place on this tenet in the conduct of the wars they were fighting was not misplaced. From this primary tenet of airpower, all other tenets are enabled. Conversely, without establishing centralization of air forces in the conduct of operations, it is likely the other tenets will not be realized.

Similarly, without decentralized execution, airpower's speed and violence are unnecessarily held in check. Hinote's analysis of CCDE highlights the tension that exists between centralized command and decentralized execution, noting in dynamic combat scenarios the required timely action can be hamstrung by an overly centralized structure. Thus, the tenet assumes a yin-yang character, requiring both centralization and decentralization and arranged in the right balance in response to battlefield conditions.

These are arguments Union cavalry officers and Wilson would readily understand. Wilson's line of reasoning, as he explained to Sherman, followed similar lines. As a distributed force, Wilson observed Sherman's dismissive attitude toward his cavalry was warranted. Unless executing the most basic of tactical functions, Sherman could not expect his cavalry to act decisively. Under centralized command, where cavalry is needed, the mounted force is ready to respond decisively with the

²¹ Wilson, *Under the Old Flag*, vol. 2, 290

appropriate amount of force. Where centralized command is coupled with decentralized execution, cavalry forces are enabled, authorized, and prepared to act quickly and independently, servicing of all manner of objectives even in various states of fog and friction. When the balance between the two is correct, CCDE allows the commander's influence to extend far into the execution of battle, as Wilson experienced at the gates of Selma, and ensures both concentration and flexibility to the supported commander.

Concentration

Airmen should guard against the inadvertent dilution of airpower effects resulting from high demand.

— AFDD-1

I always make it a rule to get there first with the most men.

— Nathan Bedford Forrest

The previous discussion of concentration in chapter 1 highlighted the land component's understanding of this tenet as a point of comparison to the USAF's grasp of the concept. The Army and Marine Corps doctrinal treatments of concentration were more closely aligned with the concept of mass, focusing on the maneuver of combined arms at the decisive point.²² The Air Force's approach to concentration differs slightly from the land component. As a service, the Air Force breaks down the elements of concentration more discretely into two complementary parts: purpose and firepower.²³ In doing so, it highlights an air-minded perspective on concentration and mass, intimating a dual understanding of concentration. The first interpretation is concentration of effort and objective is a requirement for the effective use of airpower.

²² MCDP 1; ADP 1

²³ AFDD 1, 42

The second interpretation is concentration is a function of effects, not mass. Airpower, through the character of its technology, provides concentration in a unique way. Together, these interpretations articulate the Airmen's perspective that concentration of effort is required, but this does not mean it requires a concentration of assets, only effects. Forrest's quote regarding the maneuver and men and space was uttered to General Wilson's aide shortly before the raid began during a routine negotiation of prisoner exchange.²⁴

Forrest's goal to get there with the most reveals differences between his views and Wilson's air-mindedness. Forrest's conclusions appear intuitive, but his understanding appears to be too firmly tied to mass: arranging force at a decisive point. This interpretation of concentration-as-mass is similar to the land component's modern definition of the tenet, and it did not serve Forrest well against Wilson. Forrest's interpretation of concentration and maneuver exaggerated the advantages of his ability to move along interior lines. Concentration, Forrest believed, could be achieved because force could be maneuvered from various points throughout the state and massed defensively faster than Wilson could advance his lumbering mass of cavalry toward Union objectives.

Forrest's perspective is not without merit, but rests on questionable assumptions. The first is one can predict where battle will take place. The second is one is able to maintain control of interior lines. In the case of Forrest's defense of Alabama, neither of these assumptions held true. Wilson's careful misdirection denied Forrest meaningful intelligence, causing him to guess at Wilson's objective. Forrest's uncertainty required Forrest to cover multiple points, which should have been sufficient if his forces could move between objectives quickly.

²⁴ Brian Steel Wills, *The Confederacy's Greatest Cavalryman: Nathan Bedford Forrest* (Lawrence, KS: University Press of Kansas, 1992), 302

Anticipating this, Wilson launched a corresponding campaign against Forrest's lines of communication, isolating Confederate forces. In essence, Wilson conducted a campaign that prevented his adversary from concentrating not only force, but purpose. In doing so, Wilson extended his operational and tactical advantages relative to Forrest as a result of concentration.

Much is made in chapter 2 of Forrest's dispersed posture at the start of Wilson's campaign, but some of this was the result of operational exigencies. After the battle for Tennessee, Forrest had little choice but to disperse his cavalry regiments across Alabama to alleviate food shortages. Nevertheless, Wilson observed how Forrest dispersed his troops over the winter of 1864/1865 and devised lines of operation to exploit the differences in concentration. Wilson skillfully divided Forrest's troops through obfuscation, but Wilson also took active measures to keep Forrest's forces from joining.

Wilson commanded an army of 12,000 men as they rejoined on Jasper. Taking the opportunity to exploit this mass, he sent Croxton's Brigade, part of McCook's Division, on a sortie into Tuscaloosa. Croxton's mission was designed to destroy key economic and morale targets but held a secondary objective as well. The mission also divided Chalmers's Confederate division, splitting Chalmers's attention between Croxton's minor operation in Tuscaloosa and the major line of attack in Selma. Through Croxton's raid and Wilson's own obfuscation, Wilson gained a decisive advantage through concentration of purpose.

Wilson extended his advantage further by limiting Forrest's ability to concentrate force. During the running flight from Ebenezer Church to Selma, Wilson ordered McCook's division on a sortie into Centerville, turning his division around, away from Selma. This might appear to have violated the airpower tenet of concentration, but it was a play against Forrest's own reliance on his central principle of "getting there first with the most men." At Centerville, McCook broke key lines of communication,

protecting Wilson's rear flank at Selma, but more importantly preventing reinforcements from northern Alabama or Tennessee from reaching Selma.

Wilson's main line of attack exploited the situation, pressing the offensive at a high rate of advance from Ebenezer Church to the perimeter of Selma. Forrest's men were caught in a running battle on the march to Selma, simultaneously fighting off the Union while planning for the defense of the city. Upon arrival at Selma, Union forces did not allow the confederates any breathing room, immediately holding the city at risk.

The differences between the two sides could not be more stark. Wilson held his objective firmly in place, directed the bulk of his forces toward it, and conducted secondary efforts to support the main line of advance. Forrest, on the other hand, scrambled forces from all over the state trying to predict when and where to defend while in the midst of a running retreat from Wilson. Wilson, having earlier put the blindfold on Forrest through his misdirection, now kept the Confederates spinning around, forcing the Confederacy to quick turn from a retrograde to a static defense. The exhausted, confused, and dizzy defense was no match for Wilson. The city fell in under an hour.

The conditions surrounding the Union offense and Confederate defense of Alabama is reminiscent of MacArthur and Kenney's campaign in the Southwest Pacific theater of WWII. The Japanese, forced to defend the perimeter of the co-prosperity sphere, relied on dispersed basing coupled with carrier maneuver and interior lines to provide a mobile defense. Kenney negated this strategy through rapid operational mobility enhanced by an explicit concentration of objective through the "island hopping" campaign. Surface maneuvers were also instrumental in preventing Japanese carriers from achieving a decisive mass of airpower at critical times and places.

Clearly Wilson's concentration of purpose relative to Forrest's dilution of effort was a key to Wilson's success. Wilson also acknowledged the critical role technology played in his concentration of force.²⁵ The repeating carbine rifle redefined the character of cavalry's operational punch, matching the firepower of infantry to the mobility of mounted troops. Wilson's arrangement of speed and firepower on his objectives introduced another layer of qualitative advantage over Forrest. Each cavalryman equaled the firepower of seven Confederate troops equipped with single shot rifles. At the Battle of Selma, Wilson attacked the city primarily using Long's division, of which only 1,500 men were engaged against Forrest's 1,550 defenders.²⁶ The respective orders of battle should have suggested Wilson forego an assault and perhaps lay siege to the city instead. The key difference between otherwise similarly concentrated forces was Wilson's concentration of effects—especially weapons effects. Every Union cavalryman in Long's assault equaled seven of Forrest's defenders. Under this new understanding of concentration of effect, Wilson outnumbered Forrest seven to one. The outcome of the battle was never in doubt.

Wilson understood the advantages of his repeating carbine technology because he was primarily responsible for procuring it and proliferating it among cavalry forces in 1863. Forrest, however, did not observe the operational implications inherent in the technology. Reflected in his famous quote about "firstest with the mostest," Forrest's response to Wilson's offensive was an effort to mass men at the decisive point. In doing so, he attempted to pull his troops from all over the state to Selma, barely managing to assemble a defense only equal in headcount. As it happened, Forrest needed three to seven times as many men to match Wilson's technology.

²⁵ Wilson, *Under the Old Flag*, vol. 2, 308

²⁶ O. R. series 1, vol 49 part 1, 361

Modern air operations articulate similar attitudes about concentration of effects. First, air planners often consider aircraft in terms of their sortie equivalency ratio. The B-2 offers both precision and survivability effects contained in one platform. Thus, *ceteris paribus*, the B-2 is regarded by air planners as offering the same effects as a four-plus-four flight of self-escorting F-16CMs; the “headcount” is different, but the effects are the same and concentrated in one platform.²⁷ In a similar vein, the impact of the F-22A’s concentration of lethality, speed and survivability in aerial combat forces planners to reconsider the balance of operational force ratios.

Wilson’s exploitation of cavalry’s concentrated mobility and firepower expresses similar understandings of concentration and its implications. In his two major battles, Selma and Columbus, Wilson never employed more than 1,500 men in the main line of attack, and he never enjoyed a decisive advantage in the order of battle. Concentration of effect tipped the scales in Wilson’s favor. In this light, the connection between concentration, airpower, and Union cavalry is perhaps more intelligible.

Forrest developed a plan to defend Alabama everywhere, and in doing so, he defended nothing. The Japanese Naval Air Forces suffered from taking a similar position in the southwest Pacific. In both cases their concept of operations envisioned mobile defenses that could defend in all places, with mass converging on interior lines. When assumptions surrounding the availability of interior lines proved false and concentration of mass could not be achieved, both Forrest and the Japanese were left with forces centrally commanded, but never concentrated. Kenney and Wilson’s “island hopping” maintained focus on the operational objectives, aligning air logistics, and resisting tactical attrition.

²⁷ JP 3-30, III-10

Flexibility and Versatility

Flexibility allows airpower to shift from one campaign objective to another, quickly and decisively; to “go downtown” on one sortie, then hit fielded enemy forces the next ... Versatility is the ability to employ airpower effectively at the strategic, operational, and tactical levels of warfare and provides a wide variety of tasks in concert with other joint force elements.

— AFDD-1

Flexibility and versatility of combat forces is a valued commodity for any commander. As a tenet, it provides intellectual freedom to maneuver, expanding both the range of the battlefield and the range of military effects available to the commander. The value of this tenet is timeless, and little more is needed here to emphasize it. What follows, rather, is a discussion revealing Wilson’s air-minded perspectives of flexibility and versatility in two ways. First, it reviews how flexibility and versatility create both problems and solutions for airpower leadership and how Wilson addressed this tension by examining the relationship between flexibility, centralized command, and concentration. Second, it examines how Wilson maximized the effectiveness of his forces and his mission through the proper application of flexibility and versatility relative to Forrest’s tactically-oriented perspective.

Flexibility and versatility are utilitarian and readily understood as tenets of airpower because they directly impact how aircraft are matched to targets. All things being equal, delivering a GBU-58 on a fuel depot and delivering one on a command and control facility, generally speaking, entail a similar set of planning assumptions, actions, flight profiles, and areas of competency. In this context, tactical, operational, and strategic targets share a large degree of transferability in a zero sum game. A bomb dropped on a tactical target is a bomb not dropped on a

strategic target, and an air superiority fighter used for an OCA sweep is an aircraft not being used for DCA point defense. As a consequence of this near-perfect transferability, there is no inherent law mandating which targets should be serviced in what order, an observation Douhet made when he suggested there are no “hard and fast rules” regarding the use of airpower in combat.²⁸ Thus, airpower’s flexibility opens the air component up to any number of intellectual constructs.²⁹

Similarly, there is a long-standing tradition of flexibility and versatility in the cavalry corps as well. Conventional thinking prior to the Civil War was that cavalry was best suited for various supporting missions to include shock troops, reconnaissance, and flanking maneuvers, all in support of the infantry’s tactical objectives. Similar to airpower, the speed and range of mounted troops in these various roles expanded the commander’s map and battlefield options. Subordinated to infantry commanders and penny packeted at the brigade level or below, the flexibility and versatility of cavalry forces were generally relegated to the tactical level.

As evidenced in Operation TORCH, in the absence of strong centralized command structures and concentration of effort, airpower’s flexibility and versatility create incentives for misuse by the hand of ill-informed senior leaders. So it goes (or went) with cavalry. Cavalry’s flexibility in the absence of strong, centralized cavalry leadership created incentives for senior infantry leaders to delegate cavalry to brigade level commands. The tactical exigencies of battle, aided by cavalry’s inherent flexibility, further relegated cavalry’s role to tactical support. As in the case of airpower, cavalry’s flexibility and versatility cut both ways, promising a wide array of effects, but limited to only the most tangible ones in the crucible of pitched battle.

²⁸ Douhet, *Command of the Air*, 59

²⁹ Colin S. Gray, “Understanding Airpower, Bonfire of the Fallacies,” *Strategic Studies Quarterly* (Winter 2008), 54

Wilson ruminated on the tensions created by cavalry's flexible capabilities and suggested the solution lay with appropriate command and organization.³⁰ The necessity to seize flexible opportunities created by the increased tempo of cavalry forces has always demanded cavalry leaders that are uniquely flexible in mind and in practice.³¹ In this respect, Wilson is joined by like-minded scholars of cavalry in both a contemporary and modern setting. Lieutenant Colonel George T. Denison's 1877 award winning treatment of modern cavalry identifies how cavalry capabilities and leaders are key to exploiting the potential of cavalry's flexibility.³² Similarly, Edward Longacre's contemporary analysis of American cavalry draws similar conclusions, identifying flexibility in operations as a key component to success at all levels of command.³³

After the fall of Montgomery, Wilson faced a critical decision point. Grant authorized Wilson's operation with the suggestion he rejoin with General Canby to support Canby's northward movement from Mobile. Wilson, however, recognized his forces outpaced Forrest's ability to keep tempo. Having broken away from Forrest, Wilson created an unimpeded path to Columbus, Georgia. Weighing the options of supporting Canby's advances to Wilson's rear, and tearing into Columbus, Wilson decided the opportunity at Columbus – created by outpacing Forrest's defense – outweighed the benefits of supporting Canby, who in Wilson's estimation was handling his campaign well enough.

The decision to turn away from Canby and continue to Montgomery rested on Wilson's nuanced understanding of how versatility creates a tension. He in effect made a command decision to exploit operational and

³⁰ Wilson, *Under the Old Flag*, vol. 2, 20

³¹ George T. Denison, *A History of Cavalry From the Earliest Times With Lessons for the Future* (London: MacMillan and Co., 1877), 537

³² Denison, *Modern Cavalry*, 3

³³ Longacre, *Mounted Raids*, 12

strategic gains rather than throw his weight behind Canby's campaign.³⁴ Within that decision, Wilson's granular understanding of cavalry's flexibility and versatility served him well at two key points in the campaign and highlights the effects a well-trained and organized mounted force has at the strategic, operational, and tactical levels of war in the service of objectives.

Wilson's raid exemplified a similar attitude about the flexibility and versatility of cavalry and employed his troops against tactical and operational targets in support of his campaign. His engagements at Montevallo, Ebenezer Church, Selma, and Columbus are clear examples of cavalry's tactical effects, and their contributions to his campaign are self-evident. Other aspects of Wilson's raid, however, share characteristics similar to airpower in that the operational effects achieved are a function of intent, not action.

Croxtton's mission in Tuscaloosa and McCook's operations in Centerville were conducted as a series of tactical actions. Tactical maneuver, skirmishes, and destruction were all hallmarks of their missions, but the operational intent places those missions in the appropriate context. In both cases, Croxtton and McCook conducted their missions to deny Forrest the use of his interior lines, negating the required means for his fluid defense. In the race to Selma, increasing his relative mobility was a key operational advantage Wilson pursued while simultaneously engaging Long and Upton in tactical engagements in the running fight through central Alabama. Croxtton's and McCook's operational effects greatly enhanced Upton's and Long's tactical effects even though both sets of commanders employed similarly disposed and equipped forces using similar techniques. In this moment, the intent of the action matters. Through the versatility of cavalry, the intent was realized.

³⁴ O. R. series 1, vol 49 part 1, 362

Conclusion

This analysis of Wilson and air-mindedness runs the risk of seeing parallels between cavalry and air operations that are not there. This risk is acknowledged. By observing Yuen Foong Khong's admonition of simplification due to overextended analogical frameworks, however, this chapter treads lightly so as not to draw unwarranted conclusions.³⁵ Khong's review of wrongly applied analogies cautions against this. The translation of air-mindedness to cavalry operations and back to air-mindedness is imperfect. Perfect translation is simply not possible. It is far too easy a task to pick at the margins of technological and contextual differences between General Wilson's operations and modern air-mindedness to make a point about the relevancy of this comparison. Instead, this paper suggests Wilson's vision for cavalry and modern air-mindedness exist in the same intellectual space and in like terms. In doing so, this paper seeks to establish historical antecedents for air-mindedness, not retroactively establish air-mindedness in history.

The difference is perhaps subtle, but important. Insisting air-mindedness possess perfect transitive properties through history encourages one to seek, and therefore find, things that were never there in the first place. It creates perverse incentives to rationalize away important differences, leaving the analysis vulnerable to criticism on the margins. Thus, this analysis acknowledges a problematic implication of its argumentation in order to preserve a key point for modern airpower practitioners seeking historical precedent.

The sequential presentation of tenets in this chapter perhaps suggests there is an automatically cascading relationship from centralization to concentration and flexibility. This is a fallacious

³⁵ Yuen Foong Khong, *Analogies at War* (Princeton, NJ: University of Princeton Press, 1992), 32

assumption, and the experience of Forrest demonstrates this is not the case. His Confederate forces were clearly centralized under his command, but that arrangement did little to secure operational concentration. This is due in part to the fact Forrest engaged Wilson almost entirely at the tactical level of attrition.

Forrest demonstrates exercising one tenet of airpower, even if it is the most irreducible principle of centralization, does not an air-minded leader make. In that light, the analysis of Wilson's command of each tenet stands on its own, but to borrow a phrase from statistical analysis, identifying Wilson's command of individual air-minded tenets specifies the points, but not the entire curve. Valid as the individual examinations are, Wilson's air-mindedness does not lie with one or all three of the tenets. The truest expression of Wilson's air-mindedness, rather, comes from the effective integration of all three simultaneously. Wilson may have never seen an airplane. Nevertheless, he surely grasped what airplanes meant to the practice of warfare.

Conclusion: Horses.... So What?

In the course of researching airmindedness and cavalry operations for this project, a common refrain from friends and colleagues was, “so what?” I had to admit this was a fair question and I almost called the project off because I could not shake off the doubt I was having a very long conversation with myself over nothing more than a convenient confluence of events, a mere circumstance. Fortunately General Wilson himself saved the project. A review of his autobiography provided a deeper insight as to not only how he employed cavalry, but why he did it and why it was important. In doing so, he sounded remarkably similar to exhortations of Mitchell and Douhet, opening up a rich vein of intellectual kinsmanship between himself and modern practitioners of airpower.

From this, this essay arrives at two points. First, the intellectual foundations of the Air Force have roots much deeper than AWPD-1, ACTS or even Billy Mitchell. The air service’s initial rejection of precedent is perhaps understandable given the social and cultural currents of the interwar years, but a new appreciation for the past is in order. If nothing else, looking backward broadens the service’s perspective allowing it to turn away from chauvinistic, ahistorical foundations of its culture. If Air Force doctrine is the result of experience, then opening the service’s aperture and incorporating a larger intellectual history is important. The service does have something to learn from the past, and the Air Force is better served by turning toward history, rather than away from it.

More importantly, looking at airmindedness in a pre-1903 context highlights the timeless quality of the concept. Exploiting advantages in speed, range and tempo are desired regardless of context and technology. Indeed, much of Wilson’s autobiography examines points made by Douhet and Mitchell to the point where they are almost indistinguishable. The cross pollenization of ideas to different technological contexts has implications for today. Recent doctrine has

converged a multitude of technologies and capabilities under the umbrella term airpower. This has led to some confusion on the part of practitioners and can be made intelligible by the timeless quality of air-mindedness.

AFDD 1 describes air-mindedness as a “unique” perspective on war. Doctrine unapologetically asserts the Air Force’s vision is enabled by technology and extends beyond the immediate exigencies of battle. By implication, Air-mindedness is fundamental to the service and underwrites how the service presents itself and its contributions to joint services. In doing so, doctrine suggests air-mindedness is an irreducible element, a primary color, of Airmanship.

In that light, the second point emerges: there is little literature devoted to the subject of air-mindedness. Its sporadic inclusion in doctrine is met with an equally sporadic discussion in academic circles. Dennis Drew’s work in the 80’s and 90’s serves an important foundational role, highlighting how perspectives matter to the institution. Similarly, Dr. Hayden’s 2008 article is a great leap forward in defining air-mindedness in descriptive terms. Finally, General Dunlap’s article on air-mindedness in counter-insurgency doctrine is a crucial first step to operationalizing this perspective in contemporaneous conflict. These works notwithstanding, more work is needed to build a stronger case for air-mindedness.

If air-mindedness did not appear in doctrine until 1992, it is fair to ask why it is suddenly so urgent to build a stronger case for it now. The answer lies in the shifting character of Air Force and its mission. Strategic bombing and nuclear deterrence framed most of the Air Force’s perspective on war and a more flexible framework for airpower was not really needed. Conflicts short of nuclear exchange have a decidedly different quality surrounding it and the Air Force has drifted into our nation’s limited conflicts under various levels of intellectual preparedness. Air-mindedness offers a methodology to mitigate this.

Formed in academic circles and blessed by doctrine, air-mindedness has given the intellectual foundations of the Air Force a name. This is an important step because naming a concept gives it a tangible quality. It can be expressed through action. In turn, it serves as an intellectual rallying point. A place to return to or depart from as needed. As the service transitions from one strategic context where it served in a supporting role, to a new context as a supported role, a strong rallying point is essential to ensure strong joint leadership in an uncertain future.



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