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A Separate Space Force

An 80-Year-Old Argument

Michael C. Whittington
Chaplain, Colonel, USAF

Air War College
Maxwell Paper No. 20

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Please send inquiries or comments to:
Editor
The Maxwell Papers
Air War College
325 Chennault Circle Bldg 1401
Maxwell AFB AL 36112-6427
Tel: (334) 953-7074
Fax: (334) 953-1988
Internet: lawrence.grinter@maxwell.af.mil

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Foreword

Since the end of the Gulf War, the debate over whether there should be a separate space service, equal with the Air Force, Army, and Navy, has grown in proportion to the indispensable value of space operations to our nation's defense. Increasing dependency on space-systems is a fact of military life. In this well-documented essay, Col Michael C. Whittington compares the leading arguments for a separate space force to the cogent arguments for an independent air force made by airpower advocates during the interwar years of 1920–1940. The airpower issues in 1920 and the space power issues of today are strikingly similar, revolving around four key issues: leadership, doctrine, technology, and funding. The irony, of course, is that these arguments, which helped create an independent air force in 1947, are challenged by many within today's Air Force leadership, which leads Colonel Whittington to ask, "If they were cogent in 1920, would they not be relevant today?"

Interestingly, the author, though a professional Air Force officer, is neither a space operator nor a pilot. Colonel Whittington's purpose is not to propose a separate space force but rather to provide the reader with an unbiased perspective of the arguments for and against.

Though all agree that aerospace power is at a critical juncture, senior leaders are divided as to which direction the Air Force should pursue regarding space. Space separatists want space warfare freed from control of "air" commanders, argue that space power doctrine cannot be built upon airpower doctrine, contend that space is a wholly different technological medium, and want to free space funding from competition with Air Force fighter and bomber programs.

Whichever road is taken—whether a separate space force or an Air Force with a greater emphasis in space—the shift from an airpower to a space power culture is inevitable. And, when this shift occurs, the author argues, the Air Force "would do well to remember its own history."

As with all Maxwell Papers, this study is provided in the spirit of academic freedom, open debate and serious consideration of the issues. We encourage your responses.

DAVID F. MacGHEE, JR.
Major General, USAF
Commandant, Air War College

About the Author

Col Michael C. Whittington is an Air Force chaplain who has served in every chaplain leadership position at the wing level and as chief of the Education Division at the Chaplain Service Institute. His academic degrees include a bachelor of arts from Oklahoma Christian University of Science and Arts, a master of science and a master of divinity from Abilene Christian University, and an earned doctorate from Saint Paul School of Theology. He graduated with honors from both the Air Command and Staff College (residence) in 1990 and the Air War College (seminar) in 1993, and is currently a resident student at the Air War College.

A Separate Space Force

An 80-Year-Old Argument

At the close of World War I, the Army General Staff viewed military aviation as a servant of ground forces. . . . As a result, advocates of new roles and missions for aviation, such as Billy Mitchell, sought organizational independence to implement their ideas.

—Sen Bob Smith (R-N.H.)

In 1972 Dr. Werner von Braun predicted, "One hundred years from now, people will look back and wonder how man could ever have managed his affairs on this planet without the tools provided by the space program. That there ever could have been a world without spacecraft will be just as difficult for them to perceive as for us to imagine living in a world without telephones or airliners."[1] Considering the dependency of the United States military on America's space program, Pentagon officials would differ with Dr. Von Braun: It took less than two decades.

In the 18 years following Von Braun's prediction, the US military gradually became dependent on space assets for operational wartime support, a fact that few senior military leaders seemed to grasp. Their level of awareness would change dramatically on 17 January 1991, when, during the first 14 hours of Operation Desert Storm, more than 1,200 combat sorties were flown and 106 cruise missiles were launched.[2] The Gulf War "represented the first major trial by fire for space forces, whereby military space systems could fulfill their promise as crucial 'force multipliers.'"[3] As Gen Thomas S. Moorman said, "Desert Storm . . . opened the eyes of senior military leaders. Now, space is like air-conditioning—everyone who needs and wants information from space wonders how we ever got along without it."[4] Since the end of the war on 28 February 1991, the debate over whether space should become a separate service, equal with the Air Force, Army, and Navy, has grown in proportion to its indispensable value to our nation's defense.

Though some senior military and political leaders have expressed opposing views, everyone agrees that the era of space-system dependency has arrived. Some Air Force leaders, such as Gen Charles A. "Chuck" Horner, the air commander of the Gulf War and former commander of the United States Space Command (USSPACECOM), considers the process a healthy one. He advised senior leadership to "talk about it, debate it."[5]

Interestingly, the debate itself sounds very similar to the cogent arguments for an independent Air Force made by senior airmen in the interwar years of 1920–1940. The irony, of course, is that the same arguments that helped create an independent Air Force in 1947 are challenged by many within today's Air Force leadership. Space separatists would argue that these senior airmen are still dominated by the culture of the "manned strategic bomber," and any new missions, to include space, would have to serve that culture.[6] If the accusation is accurate, the Air Force's view of military space is strikingly reminiscent of General of the Army John J. Pershing's perception that the primary mission of airpower was to support the Army commander. "[If] success is to be expected," he argued, "the military air force must be controlled in the same way, understand the same discipline, and act in accordance with the Army commander under precisely the same conditions as the other combat arms."[7]

Though there have been many arguments postulated as to why Congress and the Department of Defense (DOD) ought to consider an independent space force, the debate seems to focus on four issues: leadership, doctrine, technology, and funding. The issue of leadership is central and is corroborated by the tangential issues of doctrine, technology, and funding.

Space separatists firmly believe that in order for military space to reach its potential, those who command Air Force space organizations must be experienced space operators who have risen within the rank and file of the space community and, therefore, clearly understand this new dimension of warfare. In the absence of experienced space leaders, space power theory and doctrine will continue to be built on airpower theory and doctrine, space systems will

be limited to an information-support role, and innovative weapon technology will not be funded.

The purpose of this paper is not to propose that the United States establish a separate space force, however inevitable that may be, but to compare the arguments articulated during the interwar years for an independent air force with the reasons offered today for a separate space force. Even a cursory review reveals that the arguments are strikingly similar, which leads to the logical question: "If they were cogent in 1920, would they not be relevant today?"

Leadership

To leave aviation essentially under the dominance and direction of another department is to absolutely strangle its development, because it will be looked on by them merely as an auxiliary and not as a principal thing.

—Gen William "Billy" Mitchell, 1919

Long before aviation was proven to be a substantial military power, airmen believed that the key to obtaining victory through airpower lay in establishing an independent air force "free of control by surface commanders and led by airmen possessing special expertise."[8] All notable airpower enthusiasts agreed. British Air Marshall Sir Hugh Trenchard, the first chief of the Royal Air Force and its commander from 1919 to 1930, believed the airplane to be an inherently strategic weapon that must be employed to "break the morale of factory workers by targeting enemy industry."[9] As early as 1914, Giulio Douhet of Italy was arguing that the airplane could become a dominant weapon only if "freed from the fetters of ground commanders who did not understand [the] new invention."[10] Consequently, only an airman could understand and employ its use.

Only Airmen Can Understand Airpower

America's most vocal advocate of airpower and one who bitterly complained that Army officers "did not know what airpower meant"[11] was Brig Gen William "Billy"

Mitchell. Agreeing with Trenchard that the airplane was, at its core, a strategic weapon, Mitchell proposed dividing the air contingent of the American Expeditionary Force (AEF) into tactical and strategic arms. When General Pershing authorized only 59 tactical squadrons in 1917 (excluding the strategic arm altogether), Mitchell bitterly complained. His adamant belief that airpower's primary mission was strategic bombardment, not tactical close air support to the ground forces, soon became the basis for his argument for an independent air force, separate from Army control.

Many of these airmen, not the least of whom was Mitchell, were considered radical by the War Department. Pershing's chief of staff, Maj Gen James W. McAndrew, was unmistakably clear in a War Department memo admonishing air officers who stressed independent air operations. The memo read: "It is therefore directed that these officers be warned against any idea of independence and that they be taught from the beginning that their efforts must be closely coordinated with those of the remainder of the Air Service and those of the ground army."[12] When Mitchell was pointedly asked by Congressman C. Bauscom Slemp, on 4 January 1921, why he was unable to convince the Army senior staff of the necessity of an independent air force, Congressman Louis C. Cramton interrupted and exclaimed that Mitchell "simply could not get their ear."[13] Mitchell agreed. Airpower advocates never doubted that tactical airpower enabled success on the battlefield. They simply argued that nonflyers had little appreciation or understanding for the airplane's unique capabilities (e.g., its strategic application) and therefore would limit its potential.[14]

Space Leadership Demands Operational Experience

Just as the early flyers had a difficult time persuading senior Army officers to allow airmen to lead the air forces, so the struggle to get space experts into positions of leadership at the USSPACECOM and Air Staff has been a long and mostly unsuccessful journey. Gen Howell M. Estes III, former commander of USSPACECOM, complained that even when space experts actually were assigned to Air

Staff, they were a "lone voice in the wind."[15] Unfortunately, potential space leaders will never be realized until the Air Force undergoes a "painful 'cultural change' in which space flight operations are as important to the rank and file as aeronautics and aviation."[16]

Limited promotion beyond colonel within the space community has fueled the controversy and sent an unmistakable message that space officers are not competitive with their rated colleagues for promotion to general officer. Henry Cooper, former chief of the Strategic Defense Initiative Organization, alluded to the transfer of Maj Gen William R. Looney III from Langley's First Fighter Wing to become director of operations for the Air Force Space Command (AFSPACECOM), as symptomatic of the problem.[17] Sen Bob Smith (R-N.H.) expressed his concern that the Air Force's practice of sending nonspace officers to lead space organizations would undermine the development of a true space power culture. The numbers substantiate his apprehension. Of the 11 general officers at AFSPACECOM, none are career space officers, which prompted Smith to quip, "How many general officers at Air Combat Command are not command pilots?"[18]

The Air Force, however, is initiating changes that should, one day, help to remedy the situation. Although AFSPACECOM is a full operational command, the Air Force continues to launch programs to get space experts into war-fighting positions. As Secretary of the Air Force F. Whitten Peters explained, "One of the lessons learned from Kosovo is that we didn't have people trained to work at the Air Operations Center (AOC) at the levels we needed. We need to standardize the AOC and turn it into a weapons system."[19] With the AOC as the heart of the combat air force, opening up opportunities for career officers to gain operational experience as space leaders is a step in the right direction, though critics argue that it is too little, too late. Col Vic Budura, former Space Chair at the Air War College, lamented: "It is probable that the first commander of the [Space] Force (circa 2025) will be a young lieutenant in the first class of the Air and Space Basics Course in 1999."[20]

Where Is Space's Billy Mitchell?

Part of the problem is the absence of a space leader with the charisma of a Billy Mitchell or a Hap Arnold. Mitchell addressed the War Department, Congress, special aircraft boards, and the public in an all-out effort to educate and persuade the nation of the value of airpower and the need for an independent air force. Even the White House was aware of his fervor. Mitchell's headlines in the press tended to "swell the mailbags of members of Congress, thus producing indirectly flurries of what President Calvin Coolidge contemptuously called 'Mitchell Resolutions.'"[21] But at least Mitchell, as assistant chief of the Air Service in 1921, held a rank commensurate to his position.

When the Second World War began, Arnold, just promoted to lieutenant general, was appointed to the United States Joint Chiefs of Staff and the Anglo-American Combined Chiefs of Staff, an "unprecedented recognition that the air force was equal to and independent of sea and land power."[22] Moreover, General Arnold was to play a critical role in gaining independence for the air force, rising through the ranks to become the Chief of the Air Corps. Conversely, there has never been a commanding general at AFSPACECOM who has a heritage in space.

Without space advocates in key leadership positions (and wearing the commensurate rank), military space may never be fully exploited. Regardless of charisma, a colonel just doesn't have the clout to contend with the Air Staff. Fortunately for the future of the Air Force, the Army did promote a few airmen to a rank where their voice could be heard in the War Department, albeit grudgingly. The Air Force, however, has not taken the initiative to groom its space leaders in the 17-year history of Space Command. As Budura explained, "Even though we've had a space command since 1 September 1982, a whole generation of potential leaders in space operations has been lost or at least not mentored to assume the mantle of future responsibility."[23] Granted, a viable space presence within the ranks of the senior leadership would not be a cure-all, but it would at least be the beginning of a legitimate effort to exploit this new dimension of warfare.

The Fourth Dimension of Warfare

Perhaps the mistaken notion that space is merely an extension of the atmosphere has lulled the Air Force into believing that an airman can lead space forces as well as an experienced space operator. Air and space, of course, are not an indivisible whole. Space has introduced a fourth dimension into warfare just as air introduced a third.

The early air theorists exerted enormous energy persuading the military leaders of their day that enemy governments, industry, and people, previously shielded by their armies, were now vulnerable to attack by air. "A nation's nerve system," B. H. Liddell Hart wrote, is "no longer covered by the flesh of its troops."[24] Mitchell corroborated Liddell Hart's assessment when he wrote, "We have launched ourselves into what we call the air, a fluid that covers the whole earth like a deep blanket. Wherever this blanket extends, there we can go. As it covers the whole world, all places are accessible to the flyer."[25] And again, "[It] is a common medium all over the world. It is bounded by no oceans, mountains, rivers or deserts."[26] True, space vastly extends Mitchell's metaphorical "blanket," but the analogy ends there.

Access to the air is as simple as "throwing a rock or a glider,"[27] but we have no immediate access to space. The air realm, which varies with altitude, is a medium of dense substance, screened from cosmic radiation, and finite, whereas space is void of substance, immersed in radiation, and infinite.[28] These variances demand significant differences in technology in order to navigate in these mediums. Correspondingly, they require an altogether different expertise and training. With similar leadership skills, a soldier trained in heavy artillery could lead USSPACECOM as well as a pilot trained in aeronautics. An experienced space operator, however, with commensurate rank and comparable leadership skills, would have a clear advantage over both.

The history of airpower is a history of the airman having the freedom to capitalize on the airplane's unique capabilities. Mitchell bemoaned the Army's efforts to restrict aviation to battlefield support because he understood the strategic power of the airplane. Military airpower advo-

cates, from Mitchell to Arnold to the present day, have tendered sound arguments defending the fact that an "airman" is clearly the best choice to lead an "air force." Dr. Douglas Freeman, a renowned military historian who twice won the Pulitzer Prize, delivered a lecture at the Naval War College in 1949 in which he succinctly said the most important quality of a leader was, "know your stuff."[29] Eight decades of military aviation history have corroborated this simple truth. Likewise, to fully exploit space, the leader must know his stuff.

Doctrine

At the heart of warfare lies doctrine. It represents the central beliefs for waging war in order to achieve victory. Doctrine . . . is the building material for strategy. It is fundamental to sound judgment.

—Gen Curtis Emerson LeMay, 1968

By the mid-1920s, airmen believed that airpower had altered the nature of war and that the time had come for an independent service led by airmen. After eight years of arduous work, the Army Air Corps issued its first doctrine publication in 1926 describing in precise terms how military aviation could decisively win the next war. But the War Department, dominated by ground combat officers, changed the doctrine entirely. Training Regulation (TR) 440-15, *Fundamental Principles for the Employment of the Air Service*, relegated the role of aviation to "aid the ground forces to gain decisive success."[30] What ensued were two decades of debate.

Inordinate Focus on Service Survival

Dr. James Mowbray believes that this "long, drawn-out, often bitter struggle between airmen and nonairmen . . . produced a paranoid state of mind in airmen that has been transmitted from one generation of airmen to the next. It has been this paranoia that has been largely responsible for keeping modern airmen focused on 'survival of the service' [and] it persists to this day."[31] Fifty years after the Air Force became a separate service, its doctrine continued

to reflect this distrust. "The US Air Force's assigned mission is to 'organize, train, equip, and provide forces for the conduct of prompt and sustained combat operations in the air' . . . *not in support of other tasks as with air arms of the other services but* **as its sole reason for being."** (Emphasis in original)[32]

One could argue that this inordinate focus on service survival has subconsciously prevented today's Air Force from an objective discussion on the future of space. All military senior staffs understand that the "era of space-system dependency has arrived."[33] But the Air Force, by virtue of its predominant role in space, is the only service culture that could legitimately be threatened. The USAF publication, *Global Engagement* may have contributed to this anxiety when it wrote that the *air and space* force was on an evolutionary path to a *space and air* force.[34] Soon after, the terminology changed. Some would argue that the regressive change in wording from "air and space" back to "aerospace" is symptomatic of this paranoia.

Need For Intellectual Debate

A further symptom may be the absence of an academic environment, similar to the Air Corps Tactical School (ACTS),[35] where space operators could engage in intellectual debate and begin to articulate a true space doctrine.[36] The Air Force Space Warfare Center and the Space Battlelab could evolve into a viable space warfare school, but they are presently focused on "putting information into the cockpit," not exploiting the promise of space power.[37] Though space courses are included in the Air Command and Staff College and the Air War College curricula, the predominant foci, and understandably so, are the theory, strategy, and doctrine of airpower.

Space Power Doctrine Cannot Be Built On Airpower Doctrine

The Air Force has taken traditional airpower terms and freely applied them to space. Offensive counterair becomes offensive counterspace; air superiority becomes space superiority; and, airlift becomes spacelift.[38] Just as air-

power independence was hampered by the prevailing Army culture, which lacked the expertise to articulate a "well-reasoned, universal set of principles about the proper use of air power,"[39] so space power theory and doctrine cannot be built on an aviation foundation.[40] Space operations are as fundamentally different from air operations as air is from ground operations. If space power is to be fully exploited, it must not be squeezed into an air mold.[41]

In December 1919, Mitchell protested to Congress, "To leave aviation essentially under the dominance and direction of another department is to absolutely strangle its development, because it will be looked on by them merely as an auxiliary and not as a principal thing."[42] Doctrine drives technology, and until there is a cadre of space experts similar to those who developed airpower doctrine between 1920 and 1940 at the ACTS, space technology will continue to focus on supporting the ground, sea, and air warrior.

Technology

With India, China, Russia, and many private companies rapidly crowding into space, keeping the U.S. edge will require more than technological superiority. That's why the Pentagon is tiptoeing down the path toward space warfare.

— Richard J. Newman

In calling for an offensive use of space, Senator Smith exclaimed, "With a credible offensive and defensive space control, we will deter and dissuade our adversaries, reassure our allies, and guard our nation's growing reliance on global commerce. . . . Without it, we will become vulnerable beyond our worst fears."[43] Mitchell would have agreed. In one of his many testimonies before Congress, he explained that a strong offensive and defensive air force were absolutely essential to the security of the United States for two reasons: first, to combat any would-be enemy, and second, to protect American commerce.[44]

The Emergence of Space Power

In rebuttal, critics of an independent air force claimed airpower was merely a new weapon of warfare and as such

did not warrant a separate service, but the faculty at the ACTS believed otherwise. Capt Robert Webster of the ACTS faculty candidly wrote, "Airpower is not a new weapon of warfare. It cannot be likened to the rifle, the machine gun, or the cannon. . . . It constitutes a new force, as separate from land power and sea power as each is separated from the other."[45] Mitchell added, "The air is a common medium all over the world. It is bounded by no oceans, mountains, rivers or deserts."[46] Reminiscent of Mitchell's critics, some senior leaders today consider space solely as an "enabler" that supports all warriors,[47] while others understand it to be a wholly other medium of warfare, inevitably bound for force application.[48] Just as sea power and airpower emerged as uniquely separate forms of military power, so "space power is on the threshold of something much more prominent."[49]

The Threat To Space

Former Air Force chief of staff Gen Ronald Fogleman reminded the Air Force, "When you think about protecting this nation's global interests, you have to remember it starts with space."[50] Dependence on space is growing exponentially and with it, the need to protect United States national interests. Political and military leaders agree that space weapons will probably be needed in the future to protect American interests, but there is little reason to defend satellites now.[51] However, those who believe an adversary would have a difficult time taking down the NAVSTAR (navigation satellite timing and ranging) Global Positioning System (GPS) satellite constellation should study the history of warfare and the innovative response to every revolution of military affairs (RMA). The 24-satellite GPS constellation does pose a formidable challenge to those who would seek to degrade it, but "GPS has become so critically important to U.S. military performance that U.S. enemies must be extraordinarily strongly motivated to try to meet the challenge."[52] Dr. Colin Gray and John B. Sheldon remind us that "physics textbooks have a way of dating rapidly; both heavier-than-air flight and the atomic bomb were proclaimed by distinguished experts to be impossible."[53]

Technology proliferation, asymmetric strategy, increased commercialization of space, and terrorism in the hands of rogue states and substates are considerable challenges to the United States. Barry R. Schneider describes the most dangerous group of these rogue states as "NASTIs"—Nuclear, Biological, and Chemical (NBC) Arming Sponsors of Terrorism and Intervention.[54] There are 195 states presently on the planet, seven of which have declared nuclear capabilities. Terrorism still remains the "weapon of the weak," but when combined with nuclear and ballistic missile technologies, it becomes a serious matter of national security. Any one of these NASTIs could attach a crude nuclear device to a rocket and "fry every satellite in low Earth orbit."[55]

Defending Military and Commercial Space

General Estes asserted, "It is not the future of military space that is critical to the United States—it is the continued commercial development of space that will provide continued strength critical for our great country in the decades ahead."[56] The context of the general's remarks did not imply an abdication of the military from space, but rather a bona fide cooperation with commercial space in order to work within the present economic constraints. The nation's military will be called upon to protect the DOD space assets but also commercial systems, which are essential to economic stability. US companies are projected to invest $500 billion in space by 2010,[57] and the US military must be prepared to defend these space assets just as the American Navy protected sea commerce in the eighteenth and nineteenth centuries.

As early as 1993, General Horner told the Senate Armed Services Committee, "Tomorrow's national military strategy must fundamentally accept that potential adversaries with the capabilities to do so will conduct military hostilities beyond the terrestrial arena, and into the limits of space."[58] It is naive to oppose a vigorous space force based upon the faulty premise that our space assets will never be challenged.

Funding

You [Congress] have two considerations to think about. One is the amount of money you should put into something, and, the other, how much you can get out of it.

—Gen William "Billy" Mitchell, 1921

Whether developing air or space power, there is one immutable fact—it takes money. On 4 January 1921, Billy Mitchell appeared before Congress asking for an increase to the $33 million already allocated to the Air Service. Mitchell reasoned, "In order to apportion the money for national defense properly, we should make an accurate estimate of all of the capabilities of each branch of the service, that is, what the Army can do, what the Navy can do, and what the Air Force can do. If we do not make an accurate estimate and a possible enemy does make one, we will be under a great disadvantage in case of a great emergency."[59] Mitchell's conviction that a strong air force was absolutely critical to national defense led him to believe that if Congress would only ask itself "how much will we get for the money?" they would increase funding for the fledgling Air Service. Space advocates contend that the same question is valid today. Like Mitchell, they argue that "all we want is to have you put the money where it will do the greatest good."[60]

Both Air and Space Programs Adversely Affected

Five years ago the secretary of the Air Force and the chief of staff challenged the Air Force Scientific Advisory Board to "search the world for the most advanced aerospace ideas and project them into the future."[61] The board concluded that in order for the United States to retain its superpower status in space it must develop the capability of space-based kinetic or direct energy weapons,[62] but information technology and access to space have taken priority over space weapons. Both are critical to America's national defense and commercial interests, and they have been the cornerstone of US space and technology investment for over a decade[63] but

only a viable offensive space capability can secure this nation into the next century.

General Horner was right when he admitted that the Air Force is finding itself where the Army was in the 1920s, when the value of military airpower was outpacing the Army's ability to realize it.[64] The Air Force is doing its best to keep pace, but budget constraints, compounded by the temptation to continually fund the latest technologically superior aircraft, is hurting the space mission. While all services buy and operate space systems, the Air Force has the lion's share—80 percent of the total military space budget and 90 percent of the personnel who operate the systems.[65]

When Congress cut Discover II (joint space-based radar demonstration) and delayed the Space-Based Infrared System (SBIRS), the Air Force voiced little protest.[66] However, when the embattled Lockheed Martin F-22 fighter was challenged, senior leadership responded vigorously.[67] General Estes lamented, "They've [AF] shown their true colors in the F-22."[68] This, however, is the base argument of the space separatist; it is, after all, the "Air" Force, not a space force. When choices have to be made, it is difficult to rise above embedded culture. Just as the War Department insisted that the airplane's primary mission was to support the ground troops and should be funded accordingly, so it is not surprising to determine which resources the Air Staff will choose to fight for.

The Air Force has been accused of wanting the space mission solely because of its lucrative funding,[69] but both air and space programs are adversely affected. If the Air Force insists on leading military space, then budget tradeoffs will have to be made between the two missions. While the $60 billion F-22 is soaking up funds that could be used for cutting-edge space programs, space expenditures are also costing the Air Force billions of dollars that could be used in traditional airpower missions. The projected loss of both airpower and space power systems prompted General Horner to conclude, "A separate space force would benefit the taxpayer, it would benefit the military, and it would benefit the Air Force."[70]

Conclusion

Someday the US will recognize the need for a separate space force, and it behooves us to think through the implications and the promise of an almost certain future event.

—Col Vic Budura

Early military aviators legitimately argued that the airplane would become a dominant weapon only when "freed from the fetters of the ground commander." The Army disagreed, and the debate continued for three decades. When the War Department authorized the establishment of the Air Service School in 1920,[71] aviation had its cadre of champions. Airpower theory and doctrine would drive technology, eventually leading to the development of the B-17 and B-29—airframes built upon the premise of strategic bombing. Aviators understood that the future of airpower depended upon appropriate-level funding, and they continually appealed to the War Department and Congress for additional monies.

These issues, persuasively argued from 1920–1940, are strikingly similar to the concerns of the space community in today's Air Force. With leadership skills equal, space operators argue that space, as the fourth dimension of warfare, will never reach its full potential until freed from the fetters of the "air" commander. Some space advocates contend that this freedom can only exist within the autonomy of a separate service—a space force flexing the same bureaucratic and political muscle that the Army, Navy, and Air Force flex today.[72] Others argue for an organizational change within USSPACECOM, vesting the commander with authority similar to that held by the United States Special Operations Command—control over development, acquisitions, promotions, and assignments within the space community.[73] Still others opt to create a Space Corps, similar to the Army Air Corps of 1926.[74] Though few recommend that the space mission remain organizationally unchanged, even they admit "the time may well come when [a Space Force] is going to be the right answer."[75]

The solutions differ, but all agree that there must be a significant shift from an airpower to a space power culture

or a completely separate space force. Whichever direction the Air Force chooses, it would do well to remember its own history.

Notes

1. Col Vic Budura, "The Next Force," *Future Conflict Studies Reader* (Maxwell AFB, Ala.: Air War College, August 1998), 405. Colonel Budura was a former Space Chair at the Air War College.

2. Walter J. Boyne, *Beyond the Wild Blue* (New York: St. Martin's Press, 1997), 416.

3. David N. Spires, *Beyond Horizons* (Peterson Air Force Base, Colorado: Air Force Space Command, n.d.), 244.

4. Thomas S. Moorman Jr., "The Explosion of Commercial Space and the Implications for National Security," *Airpower Journal*, no. 1 (Spring 1999): 6–7. A speech delivered by retired Gen Thomas S. Moorman Jr., to the National Convention of the American Institute of Aeronautics at Reno, Nevada, on 13 January 1998.

5. Steven Watkins, "Is the Space Mission too Big to Handle?" *Defense Trends*, 7 October 1996, 33. Quoting General Horner from a previous interview.

6. Joan Johnson-Freese, "Transitioning To a Space & Air Force: Moving Beyond Rhetoric?" Report for Asia Pacific Center for Security Studies (Honolulu, n.d.), 1.

7. Lt Col Peter R. Faber, "Interwar US Army Aviation and the Air Corps Tactical School: Incubators of American Airpower," in *The Paths of Heaven*, ed. Col Phillip S. Meilinger (Maxwell AFB, Ala.: Air University Press, 1997), 184.

8. Lt Col Mark A. Clodfelter, "Molding Airpower Convictions: Development and Legacy of William Mitchell's Strategic Thought," in *The Paths of Heaven*, ed. Col Phillip S. Meilinger (Maxwell AFB, Ala.: Air University Press, 1997), 79. Quoting from the Mitchell Papers, 21 December 1919.

9. Col Phillip S. Meilinger, "Trenchard, Slessor, and Royal Air Doctrine before World War II," in *The Paths of Heaven*, ed. Col Phillip S. Meilinger (Maxwell AFB, Ala.: Air University Press, 1997), 41.

10. Col Phillip S. Meilinger, "Giulio Douhet and the Origins of Airpower Theory," in *The Paths of Heaven*, ed. Col Phillip S. Meilinger (Maxwell AFB, Ala.: Air University Press, 1997), 2.

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17. *Legislative Update*, 16.

18. Sen Bob Smith, "The Challenge of Space Power," *Airpower Journal*, Spring 1999, 35.

19. *Legislative Update*, 5.

20. Budura, 406.

21. R. Earl McClendon, *Autonomy of the Air Arm* (Maxwell AFB, Ala.: Air Force History and Museums Program, 1996), 48.

22. Boyne, 22.

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24. Capt Basil H. Liddell Hart, *Paris, or the Future of War* (New York: Global Publishers, 1972 [c1925]), 36–37.

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29. Douglas Freeman, "Leadership," *Concepts for Air Force Leadership*, ed. Richard I. Lester (Maxwell AFB, Ala.: College of Aerospace Doctrine, Research, and Education, 1996), 390.

30. James A. Mowbray, "Air Force Doctrine Problems: 1926-Present," *Airpower Journal*, Winter 1995, 23.

31. Ibid., 24.

32. Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, September 1997, 43–44.

33. Colin S. Gray and John B. Sheldon, "Space Power and the Revolution in Military Affairs," *Airpower Journal*, Fall 1999, 32.

34. *Global Engagement: A Vision for the 21st Century Air Force* (Washington, D.C.: Department of the Air Force, 1997), 7.

35. Robert T. Finney, *History of the Air Corps Tactical School, 1920–1940* (Maxwell AFB, Ala.: Research Studies Institute, USAF Historical Division, March 1955), 5–7. The school was first called the Air Service School and was established on 25 February 1920. Its name was changed in November 1922 to the Air Service Tactical School (ASTS) and in 1926, when the Air Service became the Air Corps, to the Air Corps Tactical School (ACTS).

36. In 1998, the RAND National Defense Research Institute agreed that the operational, doctrinal, and organizational issues are far more dif-

ficult than the technological problems and proposed three broad strategic options for the emerging US space program: the *minimalist*, the *enhanced*, and the *aerospace force*. But no serious effort has been attempted to articulate the more basic "space doctrine." See Dana J. Johnson, Scott Pace, and C. Bryan Gabbard, *Space Emerging Options for National Power* (Washington, D.C.: RAND National Defense Research Institute, 1998), 48.

37. David Atkinson, "Smith Calls For New Space Force, 'Offensive' Use of Space," *Defense Daily*, 23 November 1998, 5.

38. AFDD 1, 43–48.

39. Faber, 185.

40. DeBlois, 547.

41. Maj Lloyd F. Hubbard, "Full Spectrum Security: The Role of a Separate Force," Research Report no. 127/1998-04 (Maxwell AFB, Ala.: Air Command and Staff College, 1998), 20.

42. Clodfelter, 79—quoting from The Mitchell Papers, 21 December 1919.

43. Atkinson.

44. Mitchell, 1–2.

45. Faber, 183. Quoting Robert Webster, Air Corps Tactical School, "Orientation (Lecture 1) to Air Force Course," 5 September 1935, pt. 2, 11, AFHRA, file no. 248.2017A.

46. William "Billy" Mitchell, *Our Air Force: The Keystone of National Defense* (New York: E. P. Dutton & Co., 1921), xix.

47. DeBlois, 567. See RAdm Richard Macke's opening statement in publication JDTTP 3-14, *Joint Doctrine, Tactics, Techniques and Procedures for Space Operations*, 1. "Space cannot be considered a separate warfare arena. It crosses all warfare areas and all warfare services. Just as space surrounds and encompasses the entire globe, it surrounds, encompasses, and supports all warriors."

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50. Air Force Doctrine Document 2-2 draft, "*Space Operations*," February 1997, 5.

51. Richard J. Newman, "The New Space Race," *U.S. News & World Report*, 8 November 1999, n.p. On-line internet.

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53. Ibid., 30.

54. Barry R. Schneider, *Future War and Counterproliferation* (Westport, Conn.: Praeger, 1999), 3.

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56. Howell M. Estes, "The Promise of Space Potential for the Future," Speech delivered to the US Space Foundation's 1997 National Space Symposium, Colorado Springs, Colorado, 3 April 1997.

57. Newman.

58. Gen Charles A. Horner, "Space Seen as Challenge, Military's Final Frontier," *Defense Issues* 8, no. 34, 7.

59. Mitchell, statement, 4 January 1921, 1.

60. Ibid., 16.

61. Smith, 34

62. Estes.

63. Ibid.

64. Watkins, 33. Quoting General Horner from a previous interview.

65. Ibid.

66. Gen Richard B. Myers, USSPACECOM commander, wrote a 30 November 1999 letter to Deputy Defense Secretary John Hamre voicing his "strong support for Discoverer II." See *Legislative Update*, 7 December 1999, USSPACECOM/AFSPC CX, 7.

67. *Legislative Update*, 10 September 1999, 15.

68. Ibid.

69. $11 billion in 1998. See Watkins, 32.

70. Watkins, 32. Quoting General Horner from a previous interview.

71. Finney, 5–7.

72. Smith, 38.

73. Quoting General Estes in *Legislative Update*, 10 September 1999, 5. See also Smith, 37–38.

74. Col Gordon Middleton, "Space Organization and Management: Time For An Air Force Space Corps?" Report from SAF/SX, 25 January 1994, 6.

75. Watkins, 33. Quoting Maj Gen Robert Dickman, Defense Department's space-acquisition program manager.