Lightning Strikes and Thunder Claps

The Strategic Bomber and Air Superiority

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> *The lesson from the last war that stands out clearly above all others is that if you want to go anywhere in modern war, in the air, on the sea, on the land, you must have command of the air.*
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> —Adm William F. "Bull" Halsey

The bomber has occupied the center of Air Force doctrine since the advent of airpower redefined power projection. In 1926 the US Army's Training Regulation no. 440-15, *Fundamental Principles for the Employment of the Air Service*, stated that airpower "should be used offensively, primarily to secure the control of the air, and, secondarily, to disrupt and delay enemy communications and ground establishments."[1] The primary function became known as air superiority. Even during the early days of aviation, the importance of aerial bombardment in establishing air superiority became readily apparent. As the bomber's attributes of range, payload, and precision matured over a number of major conflicts, the establishment of air superiority over enemy territory—together with the efficiencies associated with this process—developed as well. Today, high-technology capabilities make an adversary's air defenses difficult to defeat. Although the bomber's attributes have decreased the amount of time needed to attain air superiority, they are no longer sufficient to overcome modern defenses. The heavy bomber's ability to strike critical command and control (C2) nodes, severely damage enemy airfields, and degrade air defenses with great precision early in a conflict can still give the United States a distinct and overwhelming advantage. However, if we wish to maintain a capable bomber force as well as remain competitive in a contested environment, both modernization and acceleration of

the speed of offensive operations must become a strategic and operational imperative. Unfortunately, air superiority historically has been more closely associated with the fighter force while bombers have played their crucial role in relative obscurity since the end of World War II. In a high-technology conflict, the rapid attainment of air superiority will prove essential. Our strategic bombers (the B-1, B-2 and B-52) not only display national intent and resolve but also provide overwhelming strength to ensure that the US military can establish the highest degree of air superiority in the shortest amount of time.

> *Of all qualities in war it is speed which is dominant, speed both of mind and movement—without which hitting-power is valueless and with which it is multiplied.*
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> —B. H. Liddell Hart

Joint Publication (JP) 3-30, *Command and Control for Joint Air Operations*, defines air superiority as "that *degree of dominance* in the air battle of one force over another that permits the conduct of operations by the former and its related land, maritime, and air forces at a given time and place *without prohibitive interference* by the opposing force" (emphases added).[2] This definition allows us to describe air superiority as a sliding scale of dominance in the air domain—not a binary value. It can vary from a very low to a high degree of dominance. During the early stages of a major conflict, we characterize the degree of air superiority as a finite space and time period within an operating area. As the length of time and the size of the operational space over which a country can maintain air superiority become greater, so does the degree of dominance. Admiral Halsey rightly pointed out that obtaining command of the air as quickly as possible should be the primary goal of every conflict.

JP 3-30 defines air supremacy as the "degree of air superiority wherein the opposing air force is *incapable of effective interference*" (emphasis added).[3] This denotation allows us to describe air supremacy as a binary value. That is, whereas air superiority is a function of a finite

time and a defined place, air supremacy is a function of infinite time across a defined space. Attaining the latter, however, is no easy task. We must remember that establishing either air superiority or air supremacy does not guarantee victory, but without them the conflict can become extremely costly. We could even consider the quick, efficient attainment of air superiority a maxim of modern airpower. Sun-Tzu reiterates this imperative: "In joining battle, seek the quick victory. If battle is protracted, your weapons will be blunted and your troops demoralized. . . . Hence, in war[,] prize the quick victory, not the protracted engagement. There has never been a state that has benefited from an extended war."[4] Sun-Tzu's words reverberate even today in high-technology warfare. More than likely, the conflicts of tomorrow will involve shorter reaction times and multiaxis approaches, making the rapid achievement of air superiority especially important.

Using strategic bombers and their large precision payloads to destroy enemy air defenses and airfields moves the degree of dominance closer to air supremacy in much less time. The absence of these aircraft would add significantly to the time necessary to gain a decisive advantage in the air and would expose other assets to greater risk since they would have to fly more sorties and extend the duration of the conflict. Clearly, the range, payload, and precision that modern strategic bombers bring to the fight accelerate the attainment of air superiority.

Prior to World War II, military officers engaged in heated debates regarding proper employment of the bomber. Stanley Baldwin's famous speech of 1932 to the British Parliament in which he declared that "the bomber will always get through" reflected the notion that one might win a war without a high degree of air superiority.[5] Overwhelming numbers of aircraft made the attainment of air superiority a fait accompli. Gen Dwight D. Eisenhower confirmed this idea, observing that the Normandy landings proceeded from "the conviction that, through an overpowering air force . . . the German's defenses could be beaten down or neutralized, his communications so badly impaired as to make counterconcentration difficult, his air force swept from the

skies."[6] Although General Eisenhower in this instance speaks of an operating environment closely approaching air supremacy, the allies paid a heavy price to attain and maintain it.

For Eighth Air Force during the war, a lower degree of air superiority over certain areas of German territory for a specified time resulted in the loss of approximately 6,000 of its bombers and the lives of more than 26,000 of its Airmen.[7] Twenty-five years later in Vietnam, the United States learned the same lesson about air superiority over enemy territory, losing 15 B-52s to enemy fire, along with hundreds of other aircraft.[8] These numbers speak to what can happen when the quality of air superiority is not sufficient to prevent substantial loss of life, which raises the question of how we measure that quality. Specifically, by using quantifiers such as aircraft loss rates per sortie, we can determine the inadequacy of air superiority in these conflicts. In the Vietnam War, it suffered from both technological and political constraints on strategic targeting. The proper usage of strategic bombers against airfields, air defenses, and C2 nodes could have improved the quality of air superiority, resulting in considerably fewer losses of aircraft and aircrews in that conflict. Perhaps the war would have ended differently had the United States commanded the air domain and used airpower appropriately to create air supremacy.

In contrast, during Operation Desert Storm, B-52Gs helped achieve air superiority with air strikes against four airfields and highway landing strips. These raids, along with B-52H cruise-missile attacks against key Iraqi C2 nodes, allowed coalition forces to attain a high degree of air superiority with blinding speed and conduct overwhelming attacks against the Iraqi military from the air. Without the heavy bomber, these strikes undoubtedly would have taken much longer, employed many more aircraft, and likely lengthened the conflict. Despite flying an astonishing 29,300 combat sorties, the US Air Force lost only 14 aircraft (a loss rate of .048 percent), none of which were bombers.[9] Desert Storm highlighted the valuable contributions of the bomber's range, payload, and persistence to the air superiority team. The lessons

learned in Iraq opened a new chapter regarding how best to implement air superiority as an airpower team, foreshadowing the events of Operation Allied Force.

After 78 days of bombing over the Balkans in 1999, the heavy bomber once again played a starring role in air superiority. Although not perfect, the combined use of B-1s, B-2s, and B-52s once again produced a decisive advantage for the North Atlantic Treaty Organization—one so apparent that some parties believed it might obviate the need for ground forces. The bombers hit C2 nodes and severely damaged nine of the 17 airfields. With the introduction of the Joint Direct Attack Munition, guided by the Global Positioning System (GPS), B-2 stealth bombers destroyed 33 percent of all targets in the first eight weeks.[10] These damaging strikes degraded Slobodan Milošević's airborne interceptor force and forced his 1970s-era air defenses to operate autonomously. The Serbian air defense did successfully engage three aircraft but could not deny the allies unfettered use of airpower.[11] Most important during this conflict was the first use of GPS-aided precision weapons and the increased use of long-range cruise missiles. Bombers proved that they could assist in establishing air superiority by delivering a large payload with extraordinary accuracy, at extended range, with an effect greater than any other in the history of air warfare. Allied Force also demonstrated that precision weapons could decrease collateral damage and increase targeting efficiency. Both of these characteristics proved essential to achieving a high degree of air superiority as quickly as possible, and the bomber force could play a critical role in that core function. The technological breakthroughs associated with the strategic bomber during this operation changed the way air forces established air superiority in future conflicts.

Operation Iraqi Freedom offers a notable example of the bomber's contribution to the US Air Force's primary mission. Although B-1s, B-2s, and B-52s flew only a fraction of the sorties during Iraqi Freedom, they dropped most of the munitions, a significant percentage of

which came into play shortly after the "shock and awe" cruise-missile attacks of 20 March 2003. Utilizing complex jamming equipment and substantial precision payloads, heavy bombers—supported by fighter aircraft—accessed the contested airspace over Iraq and helped attain air superiority without any losses.

Perhaps the best example of the bomber force's part in air superiority occurred during recent actions associated with Operation Odyssey Dawn. On 19 March 2011, B-2 stealth bombers departed Whiteman AFB, Missouri, to strike 45 hardened aircraft shelters in Libya. Similarly, B-1 bombers left South Dakota, transiting the ocean to strike munitions shelters, combat aircraft, and vehicle maintenance facilities.[12] The range, payload, and persistence of the B-1s and B-2s severely damaged Mu'ammar Gadhafi's air defenses and greatly aided the allies in gaining a high degree of air superiority over Libya after just 13 days—without a single aircraft lost to hostile fire. The bomber forces executing the long-range, global-strike mission entered into the next evolution in airpower when they demonstrated the feasibility of implementing air superiority without forward-deployed platforms.

The advantages of a strong strategic bomber force are well known and documented throughout history. Bombers alone cannot win air superiority, but the combination of a strong strategic bomber force and an agile fighter force can do so as quickly and efficiently as possible. Together they embody the true application of airpower. Air Marshal Sir Arthur "Bomber" Harris aptly observed that "victory, speedy and complete, awaits the side which first employs air power as it should be employed."[13] The strategic bomber force represents a critical part of employing airpower properly. As the United States faces cuts in its defense budget, China and Russia have recently shown that they realize the importance of strategic bombers to national defense, reflected in China's development of the H6-K and in comments by President Vladimir Putin: "Russia needs a new strategic bomber and will develop it despite high costs."[14] Both of these examples show that rising global

powers consider this aircraft a critical component of their application of airpower and national security. The United States should take note.

> *In order to assure an adequate national defense, it is necessary—and sufficient—to be in a position in case of war to conquer the command of the air.*
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> —Gen Giulio Douhet

By controlling the air, airpower enables other applications of military force to operate efficiently, with greater freedom of movement and security. Like combined-arms warfare, achieving and maintaining air superiority as quickly as possible at the correct time and place is a team sport. The US Marine Corps understands the importance of controlling the air domain over the battlefield, so much so that the Corps controls and vigorously defends its own organic air superiority team within the structure of the Marine air-ground task force. However, when confronting large-scale conflicts, the nation will require the full services of all five branches of the military. A few key, well-chosen players can attain air superiority by themselves, but a combined team from across the airpower spectrum, including strategic bombers, can do so more quickly. In high-intensity conflicts, the bomber force offers the overwhelming firepower necessary to establish air superiority without delay.

Since 1926 air superiority has been airpower's primary mission. During conflicts of the past 70 years, the heavy bomber has proven vitally important to the national security of the United States. Its projection of military force over long ranges with massive payloads remains unmatched. Through the efficiencies of global precision attack and declining aircraft loss rates, the bomber has demonstrated its great value in helping achieve air superiority time and again. Using relatively few sorties to bring a flexible, overwhelming military force to bear in a short period of time makes the strategic bomber a superb deterrent and air superiority asset. It meets both the public's and politicians' expectations that the military conclude conflicts in short order. Even in light of recent budget reductions, the United States would be ill advised

to overlook the support, funding, and modernization of the strategic bomber force as the focal point of American airpower. A lack of commitment to modernize and sustain these aircraft will impair our ability to bring wars to a quick end, will expose US forces to unnecessary risks as they seek to establish air superiority, and could threaten our national security objectives. The strategic bomber is foundational to the efficient implementation of air superiority, which in turn supports the national military strategy's objective to "deter and defeat aggression" wherever it may occur.[15] ✪

Notes

1. Quoted in Air Force Doctrine Document 1, *Air Force Basic Doctrine, Organization, and Command*, 14 October 2011, 14, http://www.e-publishing.af.mil/shared/media/epubs/afdd1.pdf.

2. Joint Publication 3-30, *Command and Control for Joint Air Operations*, 12 January 2010, GL-6, http://www.dtic.mil/doctrine/new_pubs/jp3_30.pdf.

3. Ibid., GL-7.

4. Caleb Carr, ed., *The Book of War: Sun-Tzu, "The Art of Warfare" & Karl von Clausewitz, "On War"* (New York: Modern Library, 2000), 75, 77.

5. Sir Stanley Baldwin, "A Fear for the Future" (remarks to the House of Commons, London, 10 November 1932). See "The Bomber Will Always Get Through," *Air Force Magazine* 91, no. 7 (July 2008): 72, http://www.airforce-magazine.com/MagazineArchive/Documents/2008/July%202008/0708keeper.pdf.

6. Gen Dwight D. Eisenhower, *Crusade in Europe* (Garden City, NY: Doubleday, 1948), 47.

7. "Airplane Losses on Combat Missions in European Theater of Operations, by Type of Airplane and by Cause of Loss, August 1942 to May 1945," in US Army Air Forces, *Army Air Forces Statistical Digest, World War II* (US Army Air Forces, Office of Statistical Control, December 1945), table 159, p. 255, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA542518&Location=U2&doc=GetTRDoc.pdf; and "Eighth Air Force History," fact sheet, 11 September 2006, http://www.8af.af.mil/library/factsheets/factsheet.asp?id=4632.

8. Donald J. McCarthy, *MiG Killers: A Chronology of U.S. Air Victories in Vietnam, 1965–1973* (North Branch, MN: Specialty Press, June 2009), 173.

9. Richard Hallion, *Storm over Iraq: Air Power and the Gulf War* (Washington, DC: Smithsonian Institution Press, 1992), 146–47, 196.

10. "B-2 Spirit," fact sheet, 23 April 2010, http://www.af.mil/information/factsheets/factsheet.asp?id=82.

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12. Jeremiah Gertler, *Operation Odyssey Dawn (Libya): Background and Issues for Congress*, CRS Report for Congress (Washington, DC: Congressional Research Service, 28 March 2011), 7, http://fpc.state.gov/documents/organization/159790.pdf.

13. Air Marshal Sir Arthur "Bomber" Harris to Winston Churchill, letter, 17 June 1942.

14. "Putin Says Russia Needs New Strategic Bomber," *USA Today*, 15 June 2012, http://www.usatoday.com/news/world/story/2012-06-14/putin-russia-bomber/55595348/1.

15. Joint Chiefs of Staff, *The National Military Strategy of the United States of America, 2011: Redefining America's Military Leadership* (Washington, DC: Joint Chiefs of Staff, 8 February 2011), 4, http://www.jcs.mil/content/files/2011-02/020811084800_2011_NMS_-_08_FEB_2011.pdf.

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