Ex–USS *Alabama* hit by white phosphorus bomb dropped by NBS-1 in bombing tests, as Army Martin twin-engine bomber flies overhead, Chesapeake Bay, September 23, 1921 (U.S. Naval History and Heritage Command)

Air Force Strategic Bombing and Its Counterpoints from World War I to Vietnam

By Michael M. Trimble

From the early days of airpower to the Cold War, a variety of geopolitical, domestic, and institutional factors led influential American Airmen to focus narrowly on the idea of strategic bombing. This narrow focus occurred most obviously during peacetime, as strategic bombing in one form or another represented the most cost-effective means of deterring threats to the homeland, and the most decisive means to defeat enemy states if necessary. Yet whenever an actual shooting war broke out, the United States called upon Airmen to do far more than just strategic bombing, while the results of strategic bombing were often ambiguous at best. As a result, wartime Airmen adapted equipment designed

Major Michael M. Trimble, USAF, is an Airpower Strategist in the Strategy Division at Headquarters Department of the Air Force.

for strategic bombing to a variety of other roles, or persevered with old equipment while the Service developed and fielded new technology. These adaptations in wartime yielded varying degrees of success, depending on the enemy's capabilities, the war's particular character, and the abilities and will of the Airmen themselves.

The inadequacy of Air Force ideas and equipment at the outset of several successive wars speaks to a need for education and innovation, rather than indoctrination and dogma. The Air Force in its first 50 years would have benefited from developing and refining the great variety of capabilities that airpower offered. By focusing instead on strategic bombing as the primary purpose of airpower, Airmen and airpower theorists unnecessarily channelized American airpower thought. The Air Force transitioned from war to war following a similar pattern. Despite the broad contributions of airpower in World War I, World War II, and the smaller hot wars within the Cold War, from the 1920s until at least the 1970s the Air Force continued to cling to an early vision of airpower that promised decisive victory through strategic bombing.

World War I

During World War I, airpower was new. Despite tribulations and losses, Airmen adapted and persevered to achieve many operational successes over the course of the war. While aerial battles and bombardments captured worldwide attention, airpower did not exert a determinative influence on the course of the war. Nevertheless, the huge leaps forward in airpower driven by the demands of the war cleared paths for most modern functions of military aviation, including reconnaissance, transport, counter-air, interdiction, and of course, strategic bombing.[1]

World War I also gave many of the Airmen who would drive interwar airpower development their first formative experiences with combat aviation. Most famously in the United States, Billy Mitchell cemented his reputation as an early airpower leader, and his own belief that airpower would decide future wars, while commanding more than 1,400 Allied aircraft at St. Mihiel.[2] Called a "crusader for airpower" by one biographer, Brigadier General Mitchell became an unusually political Airman after the war. He raised the public profile and expectations of military airpower in the United States, despite deep institutional resistance in the U.S. Government.[3] His public and insubordinate crusade made an impact on popular opinion and the government, but it eventually cost him his career.[4] Within the Army, Mitchell also argued influentially for the division of the Air Service into *strategic* and *tactical* forces—and that the strategic force would affect the war's outcome more than any other combat arms branch.[5] As America's first true airpower theorist, Mitchell and his ideas influenced generations of airmen, especially those of the interwar period and World War II. Two of his closest aides, Kenneth Walker and Robert Olds, would go on to integrate his thoughts on bombing and his forceful approach into their work at the Air Corps Tactical School.[6]

The Interwar Period

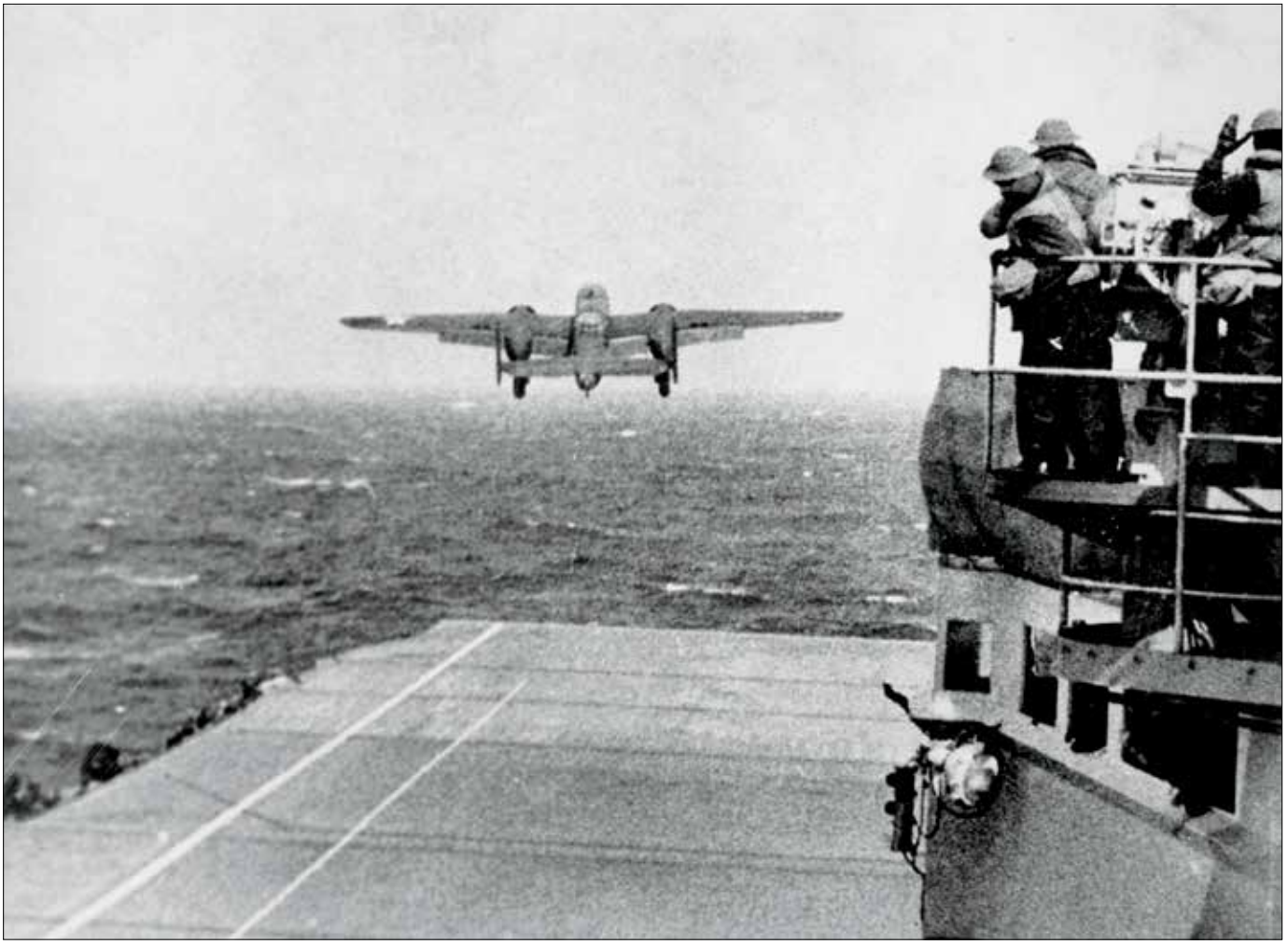
During the interwar period, the U.S. Army Air Corps struggled to attain the resources and independence necessary to make its concept of decisive airpower a reality. The basic melody of American strategic bombing theory had emerged as World War I ended. In late 1917, U.S. Army Air Service Major Edgar Gorrell collaborated with (some would say plagiarized) Royal Air Force (RAF) Major Lord Tiverton on a plan for an air campaign in 1918, designed to break the bloody stalemate of the preceding years.[7] Gorrell advocated bombing the "commercial centers and lines of communication in such quantities as will wreck the points aimed at and cut off the necessary supplies without which the armies in the field cannot exist."[8] Gorrell's plan, and the postwar reports he compiled and edited, met a warm reception among Billy Mitchell's protégés. Airmen of the interwar period were easily convinced that Americans might use their superior technology and air-mindedness to strategically bomb a nation's industry, war materiel stockpiles, and transportation systems, and thereby deliver decisive victory without the slaughter of World War I. The Air Corps found the idea deeply compelling as a strategy, and very useful as a narrative during an interwar period characterized by fiscal constraints and a broad public fascination with aviation.

Later in the interwar period, the Air Corps Tactical School (ACTS) built Gorrell's framework into its doctrine. Faculty member Laurence Kuter called the Gorrell Plan the "earliest" and "clearest" conception of American airpower.[9] ACTS taught in the 1930s that precise bombing of key nodes in an enemy's "industrial web" would destroy the enemy's warmaking ability *and* his will to fight. Faculty members Kenneth Walker, Robert Olds, and a few colleagues became known as the "Bomber Mafia" because they viewed the fighter, attack, and reconnaissance missions as secondary. Walker taught that "a well-organized, well-planned, and well-flown air force attack will constitute an offensive that cannot be stopped."[10]

The Bomber Mafia succeeded in steering the ACTS curriculum increasingly toward strategic bombing, at the expense of other airpower functions that had proven valuable in World War I. Among those marginalized were the innovative George Kenney, an observation and attack aviator in World War I, and Claire Chennault, leader of the ACTS pursuit aviation course in the early 1930s. As the intellectual center of the Air Corps, ACTS, with its narrow focus on strategic bombing (to the exclusion of other mission sets), clearly channelized the thoughts of generations of Airmen. Most of the officers who would guide and command the Army Air Forces during World War II attended ACTS in the 1930s, including Ira Eaker, Carl "Tooey" Spaatz, and the ubiquitous Curtis LeMay.[11]

World War II

During World War II, the U.S. Army Air Forces, built primarily for strategic bombing, struggled to adapt in the face of determined, powerful enemies and



U.S. Army Air Forces North American B-25B Mitchell bomber takes off from USS *Hornet* as part of first wave of Doolittle Raid, April 18, 1942 (U.S. Navy/ U.S. National Archives and Records Administration)

unforeseen challenges. Despite tribulations and staggering losses, Airmen adapted and persevered to achieve many operational successes over the course of the war.

British strategic bombing advocates learned the hard lessons before the Americans. In December of 1939, the RAF sent its vaunted strategic bomber force to attack the German port of Wilhelmshaven. Twelve of 22 bombers on the mission were shot down.[12] The RAF fared little better as the war went on. Historian Tami Davis Biddle writes, "In the early months of 1943, only 17 percent of Bomber Command crews could be expected to complete the required 30-mission tour of duty."[13] Yet the U.S. Army Air Forces entered the Combined Bomber Offensive (CBO) with hubris, dismissing the lessons learned by the British, confident that their superior technology and doctrine would prevail.

Major General Ira Eaker, Eighth Air Force Commander, had expressed confidence that "well-flown formations" of B-17s could execute their bombing missions into Germany with a loss rate of 5 percent or less.[14] Like many of his peers, Eaker underestimated the toll that German interceptors and antiaircraft fire would take. Losses experienced by unescorted U.S. Army Air Forces bomber formations wildly exceeded Eaker's estimate as the offensive raged into autumn of 1943. August strikes on fighter and ball-bearing plants caused considerable damage to German war production, but 60 B-17s were lost in the process.[15] A single bombardment group led by Colonel Curtis Lemay lost 9 of its 21 aircraft in the Schweinfurt-Regensburg mission on August 17, 1943. This unsustainable attrition culminated in the October raids on Schweinfurt, in which 198 of 291 bombers were shot down or damaged.[16] Braced by this bloody crescendo, General Henry H. "Hap" Arnold, Commanding General of the U.S. Army Air Forces, finally recognized the dire need for long-range fighter escorts in the fall of 1943.[17]

Beyond the Combined Bomber Offensive, General Arnold empowered battlefield commanders to adapt airpower to the needs of Allied forces and the challenges of their respective theaters, with outstanding results. Arnold chose Lieutenant Colonel James Doolittle to organize and lead 16 modified B-25s on an audacious carrier-launched strike against the Japanese mainland in retaliation for Pearl Harbor in April 1942. In North Africa, from late 1942 to 1943,

the 12th Air Force under Doolittle and later General Carl Spaatz used C-47 cargo aircraft to conquer the vastness of the Sahara. Troop carriers resupplied far-flung units, evacuated hundreds of wounded, and executed the first-ever combat drop of a weapon used with great effect throughout the conflict: the American paratrooper.[18] In the 1943 Battle of the Atlantic, B-24 bombers under Eaker's 8th Air Force aided British forces in defeating the German U-boat fleet, providing assured delivery of war materiel to Britain for the duration of the war.[19] Eaker also built up special operations squadrons in the 8th and 15th (Mediterranean) Air Forces, which proved immensely useful to the U.S. Office of Strategic Services in supplying the French resistance and infiltrating agents into occupied territory.[20] In the China-Burma-India theater, Lieutenant General William Tunner led a trans-Himalayan airlift effort known as "the Hump," supplying several different forces fighting the Japanese: Chiang Kai-shek's nationalist Chinese forces, the multinational Flying Tiger fighters and bombers under Claire Chennault, and now–Major General Curtis LeMay's B-29s.[21]

Meanwhile, in the Southwest Pacific, strategic bombing theory had lost one of its staunchest advocates. In January 1943, Brigadier General Kenneth Walker of the ACTS Bomber Mafia was tragically killed while flying an ineffective high-altitude precision daylight bombing mission in the Bismarck Sea.[22] General George Kenney's Southwest Pacific Air Forces soon abandoned high-altitude bombing. Instead, Kenney prioritized an air superiority campaign against Japanese fighters and pioneered low-level bombing tactics against enemy shipping. This strategy successfully protected American supply lines and isolated Japanese ground forces.[23] Meanwhile, Kenney's troop carrier squadrons achieved new levels of effective joint operations and force packaging, working with fighter and attack escorts, naval forces, Australian forces, and the troops they carried to seize airfields in the Southwest Pacific and roll back the Japanese strategic perimeter.[24] Interestingly, Kenney remarked in 1944 that aircraft and air units should *not* be designated "strategic" or "tactical" because the same aircraft might bomb targets near the frontlines on one day and targets 5,000 miles away the next.[25]

Kenney's remarks could certainly describe "Big Week" and Operation *Cobra* back in the European theater, wherein the concentration of air assets, tactical *and* strategic, provided operational breakthroughs. During Big Week in February 1944, the tactical aircraft of 9th Air Force contributed to a successful strategic bombing campaign against the German aircraft industry, led by the 8th Air Force under Doolittle. It had taken time for P-51 and P-47 escorts with drop tanks to arrive in theater once Eaker and Arnold recognized the need. But by summer 1944, after months of fully escorted bomber missions and independent fighter sweeps, the air war had turned fully in the Allies' favor. The Allies executed the D-Day invasion with the advantage of air superiority. Bomber formations faced a Luftwaffe short on aircraft—and desperately short on experienced pilots—in the skies over Germany. The CBO proved vital to the overall Allied effort in Europe, but not in the way its progenitors expected. Recent historians have concluded that the "major contribution of strategic bombing by June 1944 was its role in bringing about the weakening of the Luftwaffe's fighter arm . . . through attrition."[26]

Operation *Cobra* in July 1944 also blurred the distinction between strategic and tactical airpower, while revealing airpower's inherent flexibility. During *Cobra*, strategic bombers provided vital tactical firepower against German fielded forces and supply trains, supporting the Allied ground troops' breakout from the Normandy peninsula following D-Day. The Allies also appropriated a wing of B-24 bombers to resupply the advancing ground troops.[27] Given the stakes of the invasion, General Dwight Eisenhower, as Supreme Allied Commander, had taken operational control of 8th Air Force in April 1944. He maintained control through September in order to ensure that the Army Air Forces concentrated the mass of available airpower to support the ground scheme of maneuver. The *Cobra* bombardments proved vital to the Army's successful breakout, and the resupply missions enabled the Allied advance.[28] *Cobra* and the many preceding examples, spanning the globe and the entire range of operations, speak to the adaptability of Allied Airmen, and belie the interwar underselling of the Air Force as solely a strategic bombing force.

During World War II, the demands of total war briefly illuminated the full range of airpower's potential. Strategic bombing yielded synergistic effects when combined with true air superiority machines and tactics. Interdiction campaigns in the Pacific and Western Europe demolished enemy lines of communication and kept vital materiel from reaching the enemy's frontlines. Troop carriers, small liaison aircraft, and even civilian airliners found indirect, unexpected ways to take the Allied fight to the enemy.[29] As historian Phillips Payson O'Brien puts it, "airpower in its totality" proved decisive in Europe and the Pacific because it "multiplied the physical space and conceptual possibilities of the area of battle."[30]

The Atomic Bomb

Airpower did not win World War II *quickly* by executing one mission set on its own. Instead, it contributed across the battlespace—even *expanding* the battlespace—by doing a dozen things well. By striking independently behind enemy lines, while other units reinforced the land and sea campaigns, Allied airpower created unsolvable dilemmas for Germany and Japan. Yet the broad view of airpower that emerged *during* World War II would be overshadowed by a strategic bombing mushroom cloud that arose at the war's end. The common misperception that the atomic bomb answered every counterpoint to strategic bombing theory proved unfortunate for the Airmen who would fight the limited air campaigns of the Cold War with equipment built for strategic bombing. "The good of the bomb," writes Professor Michael Sherry, "seemed blindingly apparent, and the evil remote, if fearsome. The bomb, it appeared, had

ended an awful war and in so doing realized a half-century's fantasy about transcending and erasing the horrors of conventional warfare."[31]

It was tempting for Airmen to perpetuate the narrative: The United States Army Air Forces—in particular, two aircraft under Spaatz's Strategic Air Forces—dropped two atomic bombs on Japan in August of 1945, and thereby won the war. After all, the bombs were dropped on August 6 and 9, and the Japanese announced their surrender on August 15. But in truth, the atomic strikes on their own did not constitute a decisive blow, as some strategic bombing advocates would have had it.

To attribute Japanese surrender directly and entirely to two B-29 missions is to ignore everything that set the stage for those missions, most notably the years of costly naval, amphibious, and combined-arms warfare fought by the Army, Marine Corps, Navy, and Army Air Forces, which strangled Japan's economy while seizing vital islands and airbases.[32] Like the European war, the Pacific conflict became a war of attrition between industrial powers—in which Japan was outproduced by the American war industry and immobilized by American forces.[33] A narrow focus on the bomb also ignores the significant geopolitical factor of the Soviet Union's entry into the Pacific war on August 8. Most historians do agree that the atomic strikes hastened the end of the war and obviated the need for invasion.[34] Yet to say that this consensus redeems the promises of strategic bombing is a logical island-hop too far.

Korea

During the Korean War, a U.S. Air Force built primarily for strategic bombing struggled to adapt to a limited, nonnuclear conflict. Despite tribulations and losses, Airmen achieved many operational successes over the course of the war. In 1950, the B-29 bombers of the Far East Air Forces destroyed most of North Korea's industry. Yet the enemy fought on, in part because his airfields and the true "key nodes" or "bottlenecks" of his industrial system were located in Manchuria and greater China, where the rules of engagement (ROEs) or simple geography kept them invulnerable to U.S. strikes. Airpower supported General Douglas MacArthur's defense of the Pusan Perimeter in August and September 1950, as well as his subsequent drive north to the Yalu River.[35] But in November 1950, the Chinese intervened en masse and pushed United Nations (UN) forces back below the 38th parallel, which had been the border before the war broke out. In the first half of 1951, the conflict settled into a stalemate on the 38th parallel, and air operations constituted the majority of UN offensive action for the duration of the war.[36] However, with most of the industrial targets and military targets in North Korea already destroyed, and little enemy maneuver or resupply to interdict, an Air Force built for strategic bombing found that strategic bombing either had not worked—or had not been allowed to work.

For years after the conflict, Airmen would claim the latter. As Chief of Strategic Air Command, General LeMay, stated, "we never did hit a strategic target" during the Korean War and that the conflict provided a lesson in "how not to use the strategic air weapon."[37] Claims like these reflected a widely held belief among Airmen—that if they had been allowed to prosecute the strategic bombing campaign that their doctrine called for, then the United States could have won the war in short order. Whatever their merits, such claims overshadowed American airpower's Korean War achievements, most significantly gaining air superiority and fighting to maintain it throughout the conflict, improving all-weather and night attack, and executing numerous successful airdrops for troop insertion and resupply.

Shortly after the war, General Otto Weyland argued that distinctions between "tactical" and "strategic" airpower had proved obsolete—a fascinating insight, coming from the chief of Tactical Air Command. Having led the Far East Air Forces during the war, Weyland concluded that the Air Force should focus on developing "new patterns of air employment" for future wars.[38] It was not to be. Instead, LeMay and Strategic Air Command would dominate Air Force strategy, culture, and acquisitions during the period between Korea and Vietnam, and the Air Force would mistake the Korean War's politically restrained air campaign for an anomaly, rather than the new reality of aerial warfare.[39]

Vietnam

During the Vietnam War, an Air Force built primarily for strategic bombing struggled to adapt to a limited, irregular conflict. Despite tribulations and heavy losses, Airmen achieved many operational successes over the course of the war. In 1965 and 1966, pilots of the F-105 Thunderchief—a fighter-bomber resembling a rocket with stubby wings, built for nuclear weapons delivery—struggled to defend themselves against highly maneuverable North Vietnamese MiGs and Russian-supplied surface-to-air missiles (SAMs). In 1967, the Air Force fielded a two-seat, SAM-hunting "Wild Weasel" configuration, the F-105G, which proved effective in its designated role, suppression of enemy air defenses. Nevertheless, nearly 400 F-105s would be lost over the course of the war, including dozens of Weasels.

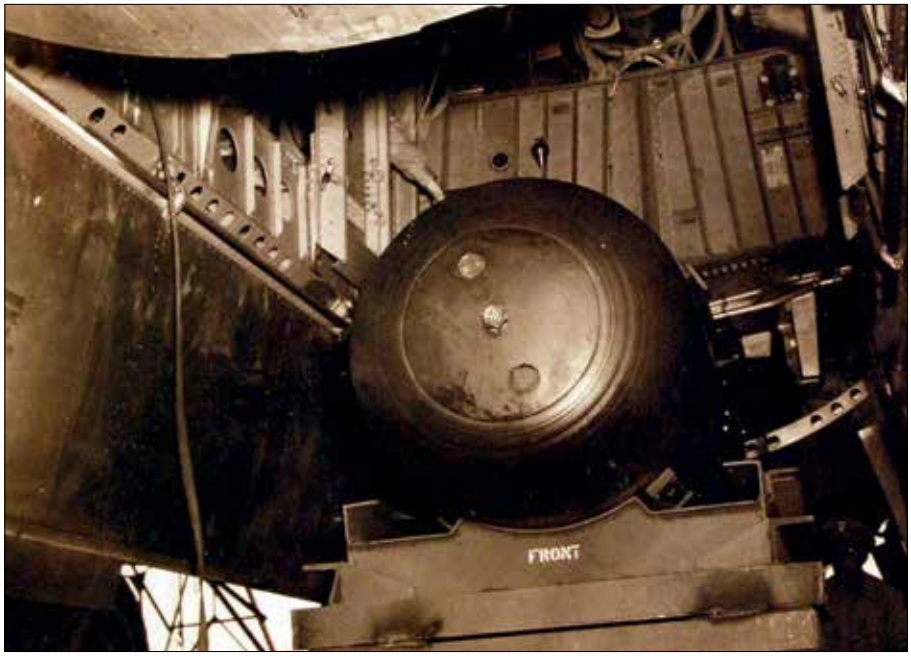
Although the Air Force could have been better equipped and trained for Vietnam, many operational and tactical airpower success stories emerged from the war. Colonel Robin Olds's Operation *Bolo*, on January 2, 1967, is perhaps the most well known in today's Air Force. Exploiting the predictability of strike packages in the ongoing Operation *Rolling Thunder*, a force of F-4 Phantom II fighters led by Olds and his 8th Tactical Fighter Wing flew into North Vietnam using the routes, altitudes, airspeeds, radio callsigns, and electronic jamming pods usually used by the more vulnerable F-105s. The ruse worked. Multiple flights of North Vietnamese MiG-21s were drawn into the air and were likely surprised to find the entire "strike package" composed of F-4s, equipped with air-to-air missiles. The North Vietnamese air force lost 7 MiGs that day; the U.S. Air Force gained a much-needed operational victory.

At the same time, the American theater strategy demanded that the Air Force hunt for elusive enemy supply convoys flowing down the Ho Chi Minh trail. Special operations "air commandos" flying World War II–era, prop-driven aircraft at low level proved more effective in this role than their jet-fighter brethren.[40] Airmen adapted this old fleet of aircraft to interdict the Ho Chi Minh trail, and their impressive operational results stand in stark contrast to the high-altitude, high-tech trends that dominated Air Force thinking leading up to Vietnam.

Furthermore, the use of U.S. airpower to blunt North Vietnam's 1968 Tet Offensive and 1972 Easter Offensive proved vital to the support of American forces and the defense of South Vietnam. During the Tet Offensive, the besieged Marines at Khe Sanh depended on close air support from the Air Force, much of it delivered oddly, but effectively, by B-52 strategic bombers—strategic bombers that would not be employed against the enemy's capital city, military headquarters, or industrial port city until 1972.

The responses to the 1972 offensive in particular helped bring the war to a close. Operations *Linebacker I* and *Linebacker II* saw President Richard Nixon direct masses of U.S. airpower—tactical and strategic—against all manner of targets in North Vietnam. Emboldened by a new diplomatic opening with China, and with the 1972 election increasing U.S. domestic pressure to end the conflict, President Nixon demanded a maximum effort bombing campaign against previously restricted targets in Hanoi and Haiphong. Nixon repeatedly and explicitly ordered more B-52 strikes in Vietnam during 1972, culminating in the 11-day Operation *Linebacker II* in December of that year. Postwar accounts from the North Vietnamese side vindicate Nixon's belief that B-52s in particular induced great fear among the population, and more importantly, that the massive casualties resulting from the B-52 strikes coerced North Vietnamese leadership during the Paris peace negotiations.[41]

For years after the conflict, Airmen would claim that if they had only been



Atomic bomb "Little Boy" hoisted into bomb bay of B-29 Superfortress, Enola Gay, Tinian Island, August 1945 (U.S. Navy National Museum)

freed from the encumbrances of the ROEs and allowed to prosecute the maximal bombing campaign that they had initially proposed against North Vietnam in 1964, as they eventually did in 1972, then the United States would have won the war in short order.[42] However, that claim has been debated many times since, and has even been refuted at times by Airmen themselves.[43] General Chuck Horner, a Vietnam veteran, would later dispute the very idea of "strategic" bombing, instead emphasizing airpower's ability to provide strategic *and* tactical effects, often simultaneously, with a variety of platforms.[44] In any case, the claim that strategic bombing in the mid-1960s could have won the war fails to acknowledge that avoiding escalation to general war—a negative objective—was foremost in U.S. political leaders' minds at the time.[45] The claim also overshadows the broad contributions Airmen did make over the course of the conflict, thanks to airpower's inherent versatility and the Airmen's ability to adapt.

Coda

Peering through a narrow aperture at these episodes in American airpower history, one might wonder how a nation with the resources and robust aviation enterprise of the United States *repeatedly* fielded the wrong aircraft or employed the wrong doctrine . . . until one realizes that in each case, the aircraft or doctrine went wrong *in the same way*, pursuing the same singular, powerful idea. During each interwar period until the post-Vietnam period, the U.S. Government cut defense spending and bet the remaining budget on the *possibility* of deterring enemies or defeating them far from the United States, without sacrificing American lives, through strategic bombing.

Of course, no single mission or capability, no matter how well-resourced and organized, is sufficient to defend the country and its interests. There are many reasons that the Nation's defense cannot be guaranteed by a single capability or even a single military Service. The clearest reasons are the fog and friction of war, its political nature, and its paradoxical logic, in which every move is opposed by a thinking, willful enemy.[46] Therefore, just as strategic bombing in Europe proved far more difficult and less decisive than its pre–World War II advocates had hoped, America's post–World War II strategic nuclear forces neither guaranteed peace, nor did they provide acceptable options in limited war. But fortunately for the

B-52 bomber takes off from Andersen Air Force Base in support of bombing effort of North Vietnam from December 18–29, 1972, known as Operation *Linebacker II* (U.S. Air Force)

Airmen of those wars, airpower's enduring utility lay in its ubiquity, flexibility, and speed; airpower could go many places and do many useful things—fast.[47] In each conflict where strategic bombing's effects may have disappointed or remained ambiguous, Airmen managed to adapt airpower thought and technology to the challenges at hand.

Postlude

Professor Sherry writes that "continuity in the history of aerial warfare seems as striking as change."[48] Certainly, the Air Force's 50-year-long strategic bombing fugue supports Sherry's point. But in the post–Vietnam period, the Air Force began to produce a new arrangement.

A number of factors influenced the Air Force transition to a strategy, and an identity, that was more whole. The Service had been reluctant to send its B-52 bombers into North Vietnam for much of the conflict, for fear of compromising its cutting-edge electronic warfare technology if one was shot down. In the meantime, the majority of strikes up north were executed by fighter crews. As a result, Tactical Air Command emerged from Vietnam with the lion's share of combat experience in the Air Force. These fighter pilots would go on to emphasize and institutionalize several significant changes: more aggressive, realistic flying training; greater emphasis on air superiority, to enable strike and other airpower functions; and a more holistic strategy for employing the flexible, adaptable air weapon against the entire enemy system.[49] One scholar suggests that the strategists of this generation, whose careers spanned from combat experience in Vietnam to planning and leading Operation *Desert Storm*, turned strategic bombing from a singular blunt instrument into a system-wide capability in the Air Force.[50] This generation of Airmen, including Moody Suter, Chuck Horner, John Warden, John Jumper, and many others, built on the systems thinking that lay at the heart of strategic bombing doctrine, while organizing, training, and equipping the post–Vietnam Air Force to execute a great variety of missions. Essentially, they managed to take the keystone of strategic bombing theory—the idea of the enemy as a system—and build and train a force that could attack the entire system, rather than just certain key nodes. Perhaps during the post-Vietnam

period, the Air Force finally developed "completely new patterns of air employment," as General Weyland had urged in 1953.

If the first 50 years of American airpower teach any coherent lessons, one must be that every conflict will involve new challenges and surprises for airpower. Therefore, it is the task of the Service's leaders and strategists to prepare it for the most lethal threats, while building in flexibility and anticipating an array of more likely threats as well. In this way, the Air Force can avoid repeating its 20th-century fugue, wherein various modulations and mutations of the strategic bombing subject dominated each progression of airpower. By building in flexibility through superior, adaptable platforms and continuous innovation, and by training for core missions as well as unpredictable scenarios, Airmen can hone core skill sets while cultivating the critical thinking and adaptability that future conflicts will require. **JFQ**

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[42] Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (New York: Free Press, 1989), 206–210; and Crane, *American Air Power Strategy in Korea, 1950–1953*, 178.

[43] Clodfelter, an Airman himself, explains in *The Limits of Air Power* that such claims either ignore or deliberately marginalize the changes in the character of the Vietnam War and U.S. political aims between the mid-60s and 1972.

[44] Tom Clancy, *Every Man a Tiger*, with Chuck Horner (New York: Penguin Putnam, 1999), 14–16.

[45] Clodfelter, *Limits of Air Power*, xv, 204.

[46] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 87–88, 119–121, 605; and Edward N. Luttwak, *Strategy: The Logic of War and Peace* (Cambridge, MA: Harvard University Press, 2001), 2–3, 8–13.

[47] Colin Gray, *Airpower for Strategic Effect* (Maxwell Air Force Base, AL: Air University Press, 2012), 276–277.

[48] Sherry, *Rise of American Air Power*, 357.

[49] Laslie, *The Air Force Way of War*, x–xiii; and David S. Fadok, "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis," in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 371–376.

[50] William T. Eliason, Editor in Chief, *Joint Force Quarterly*, e-mail to the author, February 28, 2018.