

NATIONAL ARCHIVES

By William D. O'Neil

The successes and failures of flamboyant U.S. Army Brigadier General William "Billy" Mitchell in transforming defense in the 1920s have a lot to tell us about transformation today.

ransformation is a word appearing in nearly every speech by a high Department of Defense official these days. Secretary of Defense Donald Rumsfeld commissioned a special study of it to provide input for defense planning.¹ On 2 March 1999, Dr. A. W. Marshall, the DoD's Director of Net Assessment, predicted: "The price could be big if we don't get the right ideas and make the right organizational changes. . . . Where are we now? Well, I think we are in about 1924!"²

Although the United States is clearly the world's strongest military power, the sense among defense officials is that we must exert ourselves to meet threats and environments that are changing rapidly. Many join Dr. Marshall in drawing parallels to the 1920s and 1930s, when rapid changes set the stage for World War II and weighed heavily on the scales of victory and defeat.

Discussions of transformation in that era often lead to William "Billy" Mitchell, sometime brigadier general of the U.S. Army.³ He was a professional soldier-turned-airman, an inspiring leader and capable commander who experienced an awakening as he led Army Air Forces in Europe in World War I. He saw beyond the limitations of the crude aircraft of the day and recognized the airplane's potential to transform warfare completely. And he was determined to awaken his nation to its need for air power.

Mitchell was no theorist. He was a practical soldier and airman who expounded on theory in his campaign to gather all military aviation under one separate and equal service, reporting to a cabinet department of aeronautics responsible for civil as well as military air activities. At the same time, he worked within the Army's Air Service to develop its doctrine, training, and operational competence.

Under the tightfisted administration of President Calvin Coolidge in the 1920s, the armed services were on short

rations. In both the Army and Navy, many senior officers looked askance at demands from upstart airmen for a large share of the sparse pie. But Mitchell was not discouraged easily. Like many other successful combat commanders, he had an outsize share of self-confidence, tenacity, aggressiveness, and personal ambition. The son of a U.S. senator from Wisconsin, he had well-developed political instincts and contacts. And his vivid, even flamboyant personality made it easy for him to gain attention. He flooded the United States with books and articles in popular magazines.

The main points of his argument were:⁴

† Airplanes would dominate all forms of warfare.

[†] Because of its dominant role and technical complexity, air power must be exercised under the undivided command of airmen.⁵ When he spoke of an *air force*, he meant an independent force under separate command, distinct from the Army and Navy, which were to have no air power. [†] The air force would supply the power of decision in war that already had been lost (as Mitchell saw it, based on his World War I experience) by armies—and never held by navies. But an army would continue to be needed, and its functions would remain much as before.⁶

[†] Strikes against an opponent's vital centers—"cities where the people live, areas where their food and supplies are produced and the transportation lines that carry these supplies from place to place"⁷—could decide a conflict independent of armies and navies.⁸

 \dagger Limited defense against air attack was possible, but only by aircraft and preferably by seeking out the enemy's air forces and not by awaiting attack.⁹

[†] Submarines might have had potential (at least until aircraft advanced enough to take over their functions), but all surface vessels were rendered totally vulnerable and obsolete by air power, and should have been eliminated. This included aircraft carriers, whose air power never could allow them to survive against land-based air power.¹⁰

Mitchell used his position to mount imaginative demonstrations and projects designed to capture attention and "prove" his theories while stimulating aviation development. A transcontinental "reliability test," erection of the nation's first airway systems, and an air expedition to Alaska were among his efforts.

The most dramatic and resounding of his projects, however, was a series of bombing tests against old warships. The Navy already had conducted some limited bomb tests of its own, and if some officers preferred to believe that battleships could somehow prove invulnerable to large aerial bombs, most knew better. But they would much rather have kept quiet about it in public, most especially because they hoped to persuade an economy-minded Congress to complete at least a portion of the great battleship building program authorized in 1916.

Finding the Navy unresponsive to his ideas, Mitchell used political influence to get Capitol Hill to exert pressure. Why waste millions building battleships that he could prove obsolete? He got his tests, sank his ships, and reaped enormous publicity. What exactly the tests proved remained (and still remains) subject to much uncertainty, owing to the artificialities they involved.¹¹ None of this, however, deterred Mitchell and the Navy from taking strong and strongly opposed positions. Neither side ever forgave or forgot. According to Commodore Dudley Wright Knox, writing in 1947:

[S]erious deficiencies [at the outbreak of World War II] were not the result of apathy or want of vision within the Navy itself but were largely due to ... the crusade, led by Brigadier General William Mitchell, U. S. Army, to supplant sea power by air power. ... [He] spear-headed an active movement against the Navy in Congress and the press during the 1920's and after.¹²

Mitchell's Army superiors sought to keep him out of the spotlight, and his fellow airmen urged him to circumspection. But having taken up the cross of air power, Mitchell would not lay it down. High officials came to feel he was an obstacle to the public's business and to question his motives. He was sent to exile in Texas, but he would not keep silence. Finally, in 1925 he issued a fiery public manifesto, denouncing the "incompetency, criminal negligence and almost treasonable administration of the national defense by the Navy and War departments."13 President Coolidge himself demanded that the Army court-martial him on charges of contempt, disrespect, insubordination, and conduct prejudicial of good order and discipline. Given his statements, nothing but conviction was a possibility. President Coolidge adroitly maneuvered Mitchell into resigning, denying him much of the mantle of martyrdom that harsher treatment could have brought.¹⁴

Mitchell took up writing and speaking full time, and his articles appeared frequently in many mass-circulation magazines and newspapers. The public seemed to lose interest during the turmoil of the Great Depression, and editors ceased welcoming his contributions. He died in 1936, at age 56.

Mitchell and Transformationism

What actually did Mitchell accomplish? He did a great deal to bring Army aviation nearly up to European standards within a few hectic months during World War I, and he accomplished much in furthering the air service's training and doctrinal development in the locust years of the early 1920s. These were important services, with lasting impact on the development of air power. But they were not the transformation he sought or often is credited with accomplishing.

Some claim Mitchell's wire-brushing irritated the Army and political authorities—even the Navy—into action on aviation they would not have taken otherwise. But the fact that his demands were louder and more public than others is not evidence that they were dominant or crucial. Is it not remarkable that a man of such brilliance, vigor, and vision, a man so often cited as a prototypical transformationist, should have so little solid transformational accomplishment to his credit?

Fallacious Facts

Mitchell liked to draw on history, geography, and technology for examples to support his theses, or just to enliven them. Following are three examples:

Before [gasoline engines] all sorts of appliances had been tried, ending with an actual flying-machine, developed by Professor Langley. ... A steam-engine furnished the motive power . . . and it actually flew alone, but it did not succeed in carrying a man . . . until a gasoline engine was fitted to it years after Langley's death.¹⁵

If [a 2,000-pound bomb] hits in the vicinity of a ship, within a couple of hundred feet, the underwater mining effect or "water hammer" is so great that it will cave in the bottom of the ship.¹⁶

It would be entirely practical to attack Japan by air from . . . Midway Island . . . Aircraft can go there and return, carrying enough bombs to demolish their targets. Modern aircraft will fly around 35,000 feet . . . with a radius of action of 5,000 miles.¹⁷

What these colorful and positive statements have in common is a considerable departure from the facts. None is truly central to the argument Mitchell was trying to make at the time. But as his looseness with facts became more recognized, as inevitably it did, Mitchell's credibility suffered.

Bridge Bombing

To Mitchell, those who did not support his policies were not merely wrong, but wicked:

[W]e must not entrust our national defense to . . . the fixed and narrow routine of the armies, and the . . . organized buncombe of the navies.¹⁸

For their ostrichlike ignoring of the disturbing facts . . . the navy heads have no peers, and they are abetted by the machine politicians. . . . They know that the financial forces behind ships, shipping, and foreign loans can be used to keep themselves in office.¹⁹

This was not a promising start to a constructive relationship. Bridge bombing was a Mitchell specialty. It fed his reputation as a fearless giant killer, but it meant that his program could succeed only through the unconditional capitulation of those he had traduced. Moreover, it precluded any dialog and synergy. It had to be Mitchell's way in all respects, or it was not acceptable.

Straight and Very Narrow

Mitchell devoted a lot of attention to technology and kept in close touch with it. He sometimes misinterpreted

what he had been told, or took his advice from the wrong men, but what he said held a lot of technical substance up to a point.

Antiaircraft guns or any defenses against aircraft from the ground have comparatively little effect. Only about one-tenth of 1% of the airplanes going over the line in the U.S. air service during the war were shot down by antiaircraft weapons.²⁰

This was a half-truth at best. In 1918—the period when U.S. aircraft finally reached the front—German flak by itself destroyed 748 allied aircraft.²¹ This was no trivial toll on a force that totaled about 5,500 aircraft.²²

[N]o weapon or device operated from the ground is able to . . . remotely hinder air operations.²³

While these [antiaircraft] weapons and devices have a limited effect, this effectiveness is constantly diminishing, as compared to the increased power and range of aircraft.²⁴

In World War II, greatly improved antiaircraft (AA) artillery inflicted grave losses and hindered air operations severely. German flak accounted for about half of the 40,000 aircraft and 160,000 aircrew members the U.S. and British air forces lost in the European campaign and inflicted damage of varying severity on tens of thousands more.²⁵ AA fire drove U.S. bombers to great heights and formed the main barrier to anything approaching precision bombing.²⁶ If the Germans had developed and deployed proximity-fuzed ammunition for their AA guns— as they certainly had the capacity to do—U.S. bomber losses would have more than tripled, or effectiveness of bombing would have been affected severely.²⁷

The U.S. Navy, which was the first to develop and use both proximity-fuzed ammunition and effective shipboard AA fire control, and which crowded its decks with heavy AA machine guns, exacted a toll of about 20% of Japanese attackers who penetrated the outer fighter defenses.²⁸

The U.S. Army Air Forces were slow to awaken to the damage done by German AA fire and slower still to institute effective countermeasures.²⁹ How many planes and aircrew might have been saved if leaders had not been influenced by Mitchell's breezy assurances that airplanes had nothing to fear from guns?

While the operation of those first primitive airfighting machines cannot be taken as a criterion of what may be expected today, the performance of the ground armies in [World War I] is a perfect indication of what they will do in the future. . . . [N]o army can advance or drive the other from a prepared position. A war on the ground . . . will decide nothing.³⁰

Mitchell could see no other possibilities, especially not in those that might compete with aviation.

But Never in Doubt

Mitchell did not shrink from prediction:

[G]ood bombardment airplanes will make from 30 to 40 per cent of hits [on a battleship], at least.³¹

In one way this proved to be very accurate as a prediction about World War II, but not as Mitchell intended. U.S. carrier-based dive and torpedo bombers did score hit rates in this range against capital ships, at least in the latter part of the war.³²

The story for Mitchell's preferred type of "bombardment airplanes" was very different. Under ideal test conditions with no opposition, B-17 heavy bombers could score about a 2% probability of hitting a battleship-size target.³³ In combat, hits by high-altitude bombers on maneuvering warships were all but unknown.

If a naval war were attempted against Japan . . . the Japanese submarines and aircraft would sink the enemy fleet, long before it came anywhere near their coast. Airplane carriers are useless instruments of war . . . the most vulnerable of all ships under air attack . . . entirely at the mercy of submarines.³⁴

Another great delusion which the Navyists attempt to foster is the airplane carrier . . . completely at the mercy of air forces acting from shore bases.³⁵

This prediction also was well short of target. Carriers took their lumps in World War II, but they were far from being entirely at the mercy of submarine torpedoes and shore-based air forces. In the end, the only thing reasonably close to precision bombing of targets in the Japanese home islands came from naval aircraft in raids launched from carriers barely 100 miles off Japan's coasts.³⁶ Eight times in five weeks, U.S. and British battleships even steamed in to bombard Japan under the propeller spinners of its air forces. Though Japan's air forces still had many warplanes, they were prostrate and unable to mount an effective counterattack against the naval forces.

Predictions about war are very hard. No one gets all of them exactly on target, or even most of them. But when most of your rounds directed at a vital target fall short by 80%, something is fundamentally wrong with your aiming system. Can we really say, as often claimed, that Mitchell's "views were validated in World War II?" What would contradiction have looked like?

If You Can't Reason, Scare

If a European country attacks the United States, New York, Chicago, Detroit, Pittsburgh and Washington will be the first targets. . . . It will be sufficient to have the civilian population driven out of them. . . . There is a wild and disorderly exodus from the city for the outly-ing fields and forests. . . . There is only one alternative and that is surrender.³⁷

It recurs in Mitchell's writings: a nameless enemy, for reasons unstated and by means never made clear, masses air forces over the United States and launches devastating terror raids on our cities, sending their citizens fleeing in helpless panic. Only a great investment in national air defense, under a single national air force, could save us.

As a device for getting attention, it was wonderful, at least until the novelty wore thin with repetition. But



"The most dramatic and resounding" of Mitchell's projects were tests to measure the effects of aerial bombs on surface ships. Even though the tests—here, being conducted on the former German cruiser *Frankfurt*—had built-in artificiality, they garnered publicity for Mitchell, who was trying to prove sea power obsolete against air power.

it invited others to trump Mitchell with lurid fictions of their own to promote their preferred "transformations." And the lack of substance frustrated those who sought a serious discussion of programs and priorities for meaningful transformation.

Transforming Transformationism

The virtues that serve well in prosecuting war are not necessarily those needed in transforming it. Mitchell's habits of sloppy exaggeration and embellishment, contemptuous dismissal of anyone who did not fall in line, unreadiness to consider other possibilities of transformation, wild and poorly founded prediction, and polarizing scare tactics ultimately did much to undermine his efforts. In fact, Mitchell's way provides a virtual catalog of counterproductive techniques.

Try to imagine a different Mitchell; call him "Billy-2." Just like the real Mitchell, Billy-2 returns from World War I excited about air power, convinced of its importance to his nation, and inspired by the singleservice approach he has just seen his British friends implement. And like the original, he uses his talents as a showman and politician to draw public attention to air power. But this Billy-2 is careful with his facts and ready to backtrack and correct when it turns out he has been wrong about something. He exercises his energy and charisma not solely on the members of his own air service, the press, and Congress, but also on others in the Army and Navy, working not only to transmit his own messages but also to receive theirs. He comes to understand the potentials of carrier air power, armored warfare, amphibious assault, and other nascent transformations and to integrate them into his own thinking. He seeks others with similar gifts to enroll them in a confederation of transformation, pursuing a shared vision that admits uncertainties and differences and is not dictated by any individual or clique. This Billy reconsiders his visions in the light of further evidence and revises or discards elements that come to seem doubtful or impractical, however attractive they may have appeared.

The actual William Mitchell might have dismissed Billy-2 as weak and lacking in vision. He was not a man who believed in compromise in matters of importance.

But Billy-2 would respond that there is a fundamental difference between split-the-difference compromise and synergy. He would recognize that however brilliant and knowledgeable he might have been, others also had contributions to make. For instance, he would have been open to learning that despite the conservatism of some senior officers, the Navy as a whole was technically and doctrinally dynamic to a remarkable degree. Billy-2 would see this as a source of strength for transformation, not an obstacle to be beaten down.

No doubt the most difficult point would have been over the unity of air forces. In Mitchell's view, the importance of air power, its fluid, fast-moving nature, and the potential (as he saw it) for each element of air power to serve every need demanded that it all come under one head. The only fault with Britain's earlier reconfiguration of its air assets was that it did not go far enough: in Mitchell's eyes his Air Force should have the aircraft carriers (if there were to be any) and not just the airplanes on them, and

the air defense artillery as well as fighter defenses. His adversaries, particularly in the Navy, equally were adamant that aviation took on a different character in different environments and that the differences between military environments-especially between land and sea-overrode needs for air power unity. Unless Billy-2 and his counterparts could find ways to address these issues openly, they probably would have progressed little further than Mitchell and his adversaries did. We can now see, in the light of history, that the issues were more complex than Mitchell and others were prepared to acknowledge and that no single absolute abstract principle provided an adequate guide to all cases. It is not unthinkable that these complexities could have been resolved, but it would have taken a different spirit than the one that prevailed in the angry debate between Mitchell and his adversaries.

The real Billy Mitchell was able to envision and predict transformation but not to carry it through. His vision and determination were heroic, but a different spirit was needed to frame and put into action a truly workable transformation. We would do well to honor him by learning not only from his virtues but also from his defects.

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¹"Special DoD News Briefing on Defense Transformation," 12 June 2001, <http://www.defenselink. mil/news/Jun2001/t06122001_t612tran.html>.

²Comments to the Defense Science Board Task Force on Transformation, 2 March 1999.

³The only analytical biography is Alfred F. Hurley, *Billy Mitchell: Crusader for Air Power*, new ed. (Bloomington: Indiana University Press, 1975). A more detailed chronicle is Burke Davis, *The Billy Mitchell Affair* (New York: Random House, 1967). *

⁴For a sympathetic summary of Mitchell's views, see Russell F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (New York: Macmillan, 1973), pp. 223-36. One of Mitchell's books has been reissued: *Winged Defense: The Development and Possibilities of Modern Air Power—Economic and Military* (New York: Putnam, 1925 & Dover, 1988).

⁵The only exception he allowed is that observation and spotting aircraft could fall under the command of the supported forces, although their training and doctrine should be provided by the independent air force. ⁶He continued to adhere to this even after his depar-

⁷William Mitchell, *Skyways: A Book on Modern Aero*-

nautics (Philadelphia: Lippincott, 1930), p. 253. ⁸Mitchell began talking specifically about vital cen-

ters only after his 1925 court-martial, but this theme is prefigured in his writings as early as 1921.

⁹A notable departure from the thinking of theorists in England and Europe, many of whom thought air defense not worthwhile.

¹⁰Mitchell initially wanted Congress to allow him to procure carriers to be owned and operated by his air force, with aircraft fighting from land or carriers as needed. By 1924, however, after this proposal had been rebuffed, he had turned entirely against carriers. ¹¹Gene T. Zimmerman, "More Fiction than Fact—The Sinking of the Ostfriesland," Warship International (1975), pp. 142-54.

¹²Knox, "Introduction: The United States Navy Between World Wars," from Samuel Eliot Morison, *The Battle of the Atlantic, September 1939-May 1943*, Volume 1 of *History of United States Naval Operations In World War II* (Boston: Little, Brown, 1947), pp. xxxiv-xlix.

¹³"Col. Mitchell's Statements on Govt. Aviation," *Aviation*, 14 September 1925, p. 318.

¹⁴Hurley, Billy Mitchell, p. 107.

¹⁵William Mitchell, "America in the Air," *National Geographic* (March 1921), p. 340.

¹⁶Mitchell, *Skyways*, p. 267. The effect exists but is vastly weaker than Mitchell claimed.

¹⁷Mitchell, "Are We Ready for War with Japan?" *Liberty* (30 January 1932), p. 12. It would be nearly 30 years before the Air Force would have a bomber with a practical radius this great, and 20 years before it got one that could have struck Japan from Midway.

¹⁸William Mitchell, "Airplanes in National Defense," Annals, American Academy Polit. & Soc. Sci. (May 1927), p. 42.

¹⁹William Mitchell, "Building a Futile Navy," *The Atlantic Monthly* 142, no. 3 (September 1928), p. 413.
²⁰Mitchell, "America in the Air," p. 341.

²¹Edward B. Westermann, *Flak: German Anti-Aircraft Defenses*, 1914-1945 (Lawrence: University Press of Kansas, 2001), p. 27.

²²John H. Morrow Jr., *The Great War in the Air: Military Aviation from 1919 to 1921* (Washington: Smithsonian Institution Press, 1993), p. 345.

²³Mitchell, "Airplanes in National Defense," p. 40.
²⁴Mitchell, "Building a Futile Navy," pp. 411-12.

ad ²⁵United States Strategic Bombing Survey, *Statistical* a rs. *Appendix to Over-All Report (European War)*, Feb-³

ruary 1947, pp. 2-3. Westermann, Flak, pp. 286-87. ²⁶Thomas I. Edwards and Murray A. Geisler, The Causes of Bombing Error as Determined by Analysis of Eighth Air Force Combat Operations, Operations Analysis, AC/AS-5, HQ Army Air Forces, 15 July 1947.

²⁷Operations Analysis, AC/AS-3, HQ, Army Air Forces, Estimate of Effect on Eighth Air Force Operations if German Antiaircraft Defenses Had Used Proximity-Fuzed (VT) Ammunition, Report No. 1, 15 February 1947, pp. 1-2.

²⁸Anti-Aircraft Action in the Philippines Campaign, 17 October 1944-13 January 1945, Anti-Aircraft Study No. 4, Operations Research Group (ORG), 1 Jun 1945. *Anti-Aircraft Action in the Okinawa Campaign, 18 March -15 August 1945*, Anti-Aircraft Study No. 13, ORG, 12 October 1945.

²⁹Operational Research Section, Eighth Air Force, *Reduction of Flak Risk*, July 1944, revised 2/10/1945.
³⁰William Mitchell, "When the Air Raiders Come," *Collier's*, 1 May 1926, p. 9.

³¹Mitchell, "America in the Air," p. 347.

³²Anti-Shipping Attacks by U.S. Navy Aircraft, November 1943 through May 1945, Operations Evaluation Group Study No. 252, 31 January 1946, pp. 32, 41.

³³Test data from Stephen L. McFarland, America's Pursuit of Precision Bombing, 1910-1945 (Washington: Smithsonian Institution Press, 1995), p. 284, n. 69. Probability of hit calculated by author using standard statistical methods.

³⁴Mitchell, "Building a Futile Navy," p. 412.

³⁵Mitchell, Skyways, p. 267.

³⁶McFarland, America's Pursuit of Precision Bombing, pp. 198, 202, makes comparisons between B-29 and carrier bombing.

³⁷Mitchell, Skyways, pp. 262-63.

* For a well-researched crictical biography see James J. Cooke, Billy Mitchell (Boulder: Lynne Rienner

104 Publishers, 2002). Also well researched is Douglas Waller, *A Question of Loyalty: Gen. Billy Mitchell* and the Court-Martial that Gripped the Nation (New York: HarperCollins, 2004).



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