



How Effective Is
STRATEGIC
BOMBING?



LESSONS LEARNED FROM
WORLD WAR II TO KOSOVO



Gian P. Gentile

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IS STRATEGIC
BOMBING?

THE WORLD OF WAR

GENERAL EDITOR

Dennis Showalter

SEEDS OF EMPIRE

The American Revolutionary
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INTRODUCTION



I would like to again emphasize this Philosophy of the Survey . . . and that is with an open mind—without prejudice, without any preconceived theories—to simply gather the facts. We are simply to seek the truth.

FRANKLIN D'OLIER, December 1944

Remember that quote from the chairman of the Strategic Bombing Survey of World War II: “We wanted to burn into everybody’s soul the fact that the [USSBS’s] responsibility was . . . to seek truth. . . .” Nothing, but nothing, is more important than the integrity of our [Gulf War Air Power Survey] product.

ELIOT COHEN, March 1992

Air power has been one of the most controversial issues for American defense policy since it first came into being as a military force in the early part of the twentieth century. Moreover, a certain component of American air power—strategic bombing—has been especially controversial. Pundits have railed against its perceived *ineffectiveness*, advocates have praised its apparent *effectiveness*, and zealots have been seduced by its professed cheaper cost in national blood and treasure. Over time strategic bombing’s contested nature has endured. Although not the only type of American air power, strategic bombing has provided the historical identity for airmen and their air force.

Other major forms of military power have not been so problematic, so contested in American defense policy. Why? Perhaps because for many people strategic bombing continues to be an ambiguous and even unproven military force in war and conflict.

Strategic bombing has evolved over the years. American airmen like Haywood Hansell and Muir Fairchild laid the conceptual groundwork for strategic bombing during the 1930s. The first crucible for the airmen and their strategic bombing concept was World War II, when high-flying bombers were used to attack the war-making capacity of Germany and Japan. The experience of strategic bombing in World War II helped the American Air Force prepare for “toe-to-toe nuclear combat”¹ against the Soviet Union during the cold war. Strategic bombing was tried in the limited wars of Korea and Vietnam, but it was a frustrating experience to airmen. More recently, technological improvements allowed the United States Air Force to conduct strategic bombing campaigns in the Gulf War and Kosovo using bombs guided to their targets by lasers.

Throughout its evolution, however, strategic bombing remained controversial because of the difficulty of proving its effectiveness. During strategic bombing operations, owing to the short amount of time over the target and the distance separating the airplane from the ground, it has been hard to determine success or failure simply in terms of physical destruction. And evaluating the effects of strategic bombing on vital enemy targets is especially difficult because that evaluation requires not merely an assessment of physical damage but an analysis of the entire enemy system. In short, the overall effect of strategic bombing on the enemy has not often been immediately apparent, sometimes taking an extended period of time to manifest itself. In early 1944, well aware of the problem of proving the effectiveness of strategic bombing, American airmen came up with a way to deal with one of their most vexing problems.

Secretary of War Henry L. Stimson officially established the United States Strategic Bombing Survey (USSBS) in November 1944 to analyze the effects of strategic air power in the European theater. Later, President Harry S. Truman expanded the Survey’s scope to study all types of aerial war against Japan, including the effects of the atomic bombings of Hiroshima and Nagasaki. In an attempt to keep the Survey’s findings impartial, prominent civilians were appointed as directors of most of the Survey’s divisions. The key direc-

tors of the Survey were Franklin D'Olier (Chairman), Henry Alexander (Vice-Chairman), George Ball, Paul Nitze, John Kenneth Galbraith, Admiral Ralph A. Ofstie, and General Orvil Arson Anderson. The final studies, completed and published in late 1945 through 1947, numbered over 330 reports and annexes; the amount of research and statistical data is staggering. In 1991, forty-four years after the last USSBS reports were published, Secretary of the Air Force Donald B. Rice commissioned another extensive, civilian-led evaluation of American Air Force operations in the Persian Gulf War: the Gulf War Air Power Survey (GWAPS). The chairman for the GWAPS Review Committee was Paul Nitze.

Two scholarly writings on the combat use of the atomic bomb against Japan, and the Pacific Survey's counterfactual conclusion on Japan's surrender, sparked my interest in the evaluation of American air power. The argument that President Truman dropped the bomb on Japan not to end the war (because he knew Japan would surrender soon) but to intimidate the Soviet Union,² seemed flawed to me at an intuitive level. Moreover, the Survey's counterfactual conclusion stating that Japan would have surrendered, even without the atomic bomb, "certainly prior to 31 December 1945, and in all probability prior to 1 November 1945,"³ also seemed incorrect. Such a sweeping conclusion—the atomic bomb was unnecessary in forcing Japan to surrender—struck me as missing the critical role the threat of a land invasion may have played in Japan's unconditional surrender. The other writing, arguing that the United States dropped the bomb on Japan primarily to end the war quickly and save American lives, and, as a secondary purpose, to intimidate the Soviet Union,⁴ was a more reasonable explanation to me of America's combat use of the atomic bomb.

I then began to look at many of the other published Survey reports from Europe and the Pacific to see if they lent support to the counterfactual conclusion concerning Japan's surrender. I discovered that the Survey reports were not a single set of unified analyses and arguments, systematically grounded in data, but, rather, a loose amalgam of studies, sometimes prepared more to shape the future

than to assess the past. I also came to realize that the conclusions brought out in Survey reports were informed by a common conception of strategic air power. That common conception became especially clear to me after reading through the American plans for war against the Soviet Union written from 1945 to 1950.

The World War II United States Strategic Bombing Survey contains conclusions that have influenced scholars, strategists, and journalists since its reports were first published in the two years following the end of World War II. Analysts like Bernard Brodie and P. M. S. Blackett used the Survey's conclusions and evidence to support their ideas on nuclear strategy and postwar defense policy and organization. The Survey's findings also played a role in the postwar debate over President Truman's decision to drop the atomic bombs on Hiroshima and Nagasaki. Beginning with Karl Compton, Henry L. Stimson, Hanson Baldwin, and continuing up through at least Herbert Feis and Gar Alperovitz and beyond, writers have used portions of the Survey to support their position in the debate over the 1945 combat use of the bomb. Further, USSBS reports have supported various positions over President Richard Nixon's bombing of North Vietnam, and, much more recently, the application of American air power in the Gulf War and Kosovo.

Because a presidential directive established the Survey and gave it an official status, and because the Survey was headed by civilians, ostensibly making it impartial, the Survey reports have taken on the aura of a document that contains the truth about strategic bombing in World War II. In fact, the Survey is a secondary source that interprets the past: yet analysts and pundits who have used the Survey in their postwar writings have instead tended to treat it as a primary source. In criticizing such views, retired Air Force General Haywood Hansell once cynically compared the Strategic Bombing Survey to the "Bible."⁵ Yet as Clarence Darrow forced William Jennings Bryan to acknowledge in the famous 1925 Scopes trial, the Bible was only one of many truths that purported to explain the origins of man. And the Survey contains the truth about the effects of strategic bombing

against Germany and Japan as the writers of its reports discerned that truth through their own attitudes and biases. Writing on the use of air power in the Persian Gulf War almost fifty years later, the analysts of the Gulf War Air Power Survey told the truth about air power, as they perceived it, but with a more subtle understanding of the policy implications of their published volumes.⁶

The first, and only, book-length study of the USSBS, David MacIsaac's *Strategic Bombing in World War II: The Story of the United States Strategic Bombing Survey*, did not appear until 1976.⁷ It is ironic that such a study was so long in coming, considering the influence the Survey was having on postwar scholarship and journalism. MacIsaac accepted the official premise that the Survey conducted an objective and impartial study of strategic bombing because civilians headed it. Many analysts in postwar writings, therefore, have used MacIsaac's book as a scholarly confirmation of the Survey's purported impartiality, thereby reinforcing the aura of "biblical truth" surrounding the Survey's conclusions concerning strategic air power in World War II.

As a collection of documents, as an establishment organization, and through the ideas of its civilian and military analysts, the United States Strategic Bombing Survey reflected the American conceptual approach to strategic bombing. Two fundamental tenets formed the American conception: strategic air power should be used not to attack ground forces in battle directly but instead to attack the vital elements of the enemy's war-making capacity; and the air force must be independent of and coequal with the army and the navy. My study seeks to show how that conception informed and shaped the Strategic Bombing Survey's evaluation of American air power in World War II. Since the Survey accepted the American conceptual approach to strategic bombing and made it a framework for analysis, a truly impartial evaluation was never really a possibility. My study also explores the subtle interplay of advocacy and assessment throughout the Survey's formal evaluation from January 1945 to June 1946 and the use of the Survey's published reports in

the postwar years. To bring into relief my analysis of the USSBS, I end with a chapter that compares the World War II USSBS and the 1993 Gulf War Air Power Survey.

By 1939, Major Muir Fairchild, an instructor at the Army Air Forces' (AAF) influential Air Corps Tactical School (ACTS), had refined a conception of air power that sought to use strategic bombers against the "vital elements" of the enemy's war-making capacity. Once strategic bombers had destroyed these "vital elements," Fairchild and other airmen believed that the enemy's will to resist would subsequently collapse. Air power theorist Giulio Douhet noted almost twenty years before Fairchild taught classes at ACTS that determining which "vital elements" to bomb would become the essence of air power strategy. But it was the civilian industrialists and economists, not the airmen, who were really the experts at air power strategy because the civilians better understood the workings of a modern industrialized economy. The American conceptual approach to strategic bombing, therefore, created a need to have civilian experts conduct target selection and evaluation—the essence of air power strategy. The United States Strategic Bombing Survey was an outgrowth of this requirement.

During World War II, when the AAF was using strategic air power over the present battlefield, they were also preparing for a future fight. But that future fight would not involve airplanes dropping bombs on targets in enemy cities. Instead, it would be a postwar crusade for an independent air force. The airmen knew that a civilian-led evaluation of the effects of strategic bombing against Germany could be very helpful in their upcoming postwar fight for independence.⁸ Such an evaluation could provide the evidentiary base for proving the effectiveness of American strategic air power in World War II. As a result, the airmen took deliberate steps to shape the questions that the Survey would ask concerning the effectiveness of American air power against Germany.

The evaluation methodology that Survey directors like John Kenneth Galbraith devised, and the published reports produced by the European portion of the Survey, reflected the American emphasis on

using strategic bombers to destroy the “vital elements” of the enemy’s war-making capacity. For example, Survey analysts believed that the effects of strategic bombing on the morale of the German people were important only insofar as lowered morale may have reduced the productive capacity of the German industrial labor force. Moreover, many of the European Survey’s published reports argued that American air power was “decisive” against Germany because it destroyed transportation facilities, which were “vital elements” that linked together many important industries in Germany’s wartime economy.

Generals Carl A. Spaatz and Orvil Anderson believed that the European Survey’s published reports confirmed the correctness of the American conceptual approach to strategic bombing. Those published reports would help them fight the future battle of air force independence.

Within the American conception, though, disagreements did occur over the most effective methods for strategic bombers to use when attacking the enemy’s war-making capacity. Recommending a strategic bombing plan for the air campaign against Japan, Survey Director Paul Nitze concluded, based on his studies in Europe, that the best method would be precise attacks against Japanese transportation and electrical power facilities (precision bombing). Other AAF targeting agencies, however, believed that a more effective method would be to bomb large areas of Japanese cities using incendiary weapons (area bombing). The objectives of both these bombing methods could have been either to lower morale by killing Japanese civilians or to destroy Japanese war-making capacity. But in the minds of Survey analysts and targeting planners, morale as an objective did not necessarily have to be synonymous with area bombing.

When conducting its evaluation of air power in the Pacific, in addition to studying the effects of area bombing against Japanese cities, the Survey also assessed the navy’s use of air power against Japan and the effects of the atomic bomb. The Pacific Survey had to wrestle with the fact that, unlike Germany, Japan was forced to surrender without a land invasion. But if it was not a ground invasion

that ended the war, then what did force Japan to surrender? The airmen believed that Japan's surrender confirmed the decisiveness of the AAF's conventional bombing campaign and the war-winning potential of air power for the future. The Pacific Survey *Summary Report* supported the airmen's belief by calling for an independent "third establishment" that would be responsible for strategic air operations in postwar American security.

Airmen and navy officers used the published reports from the European and Pacific portions of the Survey during the postwar congressional hearings over unification of the armed services and the independence of the air force. The Survey's numerous published studies turned out to be very malleable sources, especially for airmen and navy officers arguing their respective cases before congressional committees. But the disagreements between the air force and the navy during the hearings were not over the soundness of the American conceptual approach to strategic bombing. Rather, the navy and the air force disagreed over the most effective methods for carrying out a strategic bombing campaign in a potential war against the Soviet Union. Because the Strategic Bombing Survey had its evaluation shaped by the American conception, and because both the navy and the air force believed in the correctness of that conception, the Strategic Bombing Survey proved to be a source of truth for both services when advocating their postwar parochial interests.

The clear perception of the soundness of strategic bombing in World War II, as manifested in the USSBS reports, became muddled in the limited wars of Korea and Vietnam. American airmen in those wars chafed at the restrictions placed on them by their political leaders. If the correct approach to strategic air power was to attack the war-making capacity of the enemy, in Korea and Vietnam that approach proved difficult to carry out. Since the use of air power in Korea and Vietnam did not fit the airmen's conception of strategic bombing, an extensive evaluation along the lines of the World War II USSBS was not conducted. It was not until the American Air Force perceived great success after the Persian Gulf War in

1991 that a USSBS-like assessment of air power was commissioned and carried out.

As efforts in history, the reports of the United States Strategic Bombing Survey (and the Gulf War Air Power Survey) are useful in providing data and interpretation about the value, problems, and ambiguities of strategic bombing in war and conflict. But are they unimpeachable authorities, closed to rigorous scrutiny and thoughtful analysis? To what extent was the Survey “objective” in its analysis of strategic bombing in World War II? To answer these questions by exploring the interpretive framework that USSBS analysts brought to their work is to open up for historical view the very object of their study: the effectiveness of strategic bombing.

CHAPTER I



THE ORIGINS OF THE AMERICAN
CONCEPTUAL APPROACH TO STRATEGIC
BOMBING AND THE UNITED STATES
STRATEGIC BOMBING SURVEY

All this sounds very simple; but as a matter of fact the selection of objectives, the grouping of zones, and determining the order in which they are to be destroyed is the most difficult and delicate task in aerial warfare, constituting what may be defined as aerial strategy.

GUILIO DOUHET, 1921

There is that whole question of what is morale. . . . I confess I don't know what morale is.

CARL BECKER, 1943

In his 1921 book *The Command of the Air*, Italian air power theorist Giulio Douhet argued that once strategic bombers had achieved command of the air, they could quickly force an enemy into submission by dropping bombs on key targets in its cities.¹ But he only loosely defined those targets, and he never explained how to select them. Indeed, Douhet went on to state that it would be impossible to determine enemy targets in aerial warfare systematically because the choice would “depend on a number of circumstances, material, moral, and psychological, the importance of which, though real, is not easily estimated. It is just here, in grasping these imponderables, in choosing enemy targets, that future commanders of Independent Air Forces will show their

ability.”² Considering the overwhelming confidence that Douhet had in the ability of a fleet of bombers to destroy enemy cities and break the will of the civilian population, one would think that target selection would have played a more important role in the Italian’s theory of air warfare.³ Douhet’s reluctance to deal with target choice anticipated the problems that air commanders would have with target selection and evaluation during World War II.

Douhet challenged conventional military thought on warfare in the 1920s by claiming that the nation that owned an air force predominantly of strategic bombers could avoid costly naval and ground engagements by attacking the “vital centers” of enemy cities, thereby creating terror among the civilian population. The result, according to Douhet, would be a quick, decisive victory for the nation equipped with an independent strategic air force. A casual glance at the title of Douhet’s book, *The Command of the Air*, leads one to think that gaining superiority in the air—the ability to fly at will over enemy territory—was the most important objective. But for the Italian, this was only the first, albeit essential, part of a theory of air warfare that ultimately envisioned using airplanes to bomb enemy cities.⁴ Within those cities, Douhet argued, were primarily two types of objectives to bomb: the morale of the people and their material resistance. Munitions factories, transportation networks, and electric power plants, for example, made up material resistance—what commonly became known as the enemy’s war-making capacity. But Douhet made clear that while it might be important to attack the enemy’s industrial capacity to resist, the enemy’s morale would ultimately have to be attacked. The way to break the morale—the will to resist—of the enemy was to bomb cities, killing large numbers of civilians.⁵

American airmen were aware of Douhet’s theory. As early as 1923 a translation of *The Command of the Air* was being circulated at the Air Service Headquarters. In 1933 the Air Corps Tactical School (ACTS) at Maxwell Field, Alabama, maintained copies of Douhet’s work.⁶ Historians have debated how much direct influence Douhet had on the development of American air power strategy in the 1930s.

Some analysts argue that air power proponents like William Mitchell had greater influence on American thinking on strategic bombing than Douhet. Others argue that Douhet's prolific writings played an important role in shaping American views on air power.⁷ Most scholars, however, would agree that Douhet's collective works gave a literary comprehensiveness to the ideas that shaped the American conceptual approach to strategic bombing.⁸

By 1939 American airmen had developed a conception of air power that envisioned using strategic bombers to attack the "vital links" of the enemy's war-making capacity, thereby breaking the enemy's will to resist.⁹ But what were the "vital links" in the enemy's industrial structure essential to the capacity to resist? American airmen were soldiers, not experts in industrial economies. They were trained to fly aircraft and to drop bombs on critical targets. However, the targets to attack under the American conception were economic in nature. To assess how the destruction of any given target would affect the overall war capacity of the enemy nation required a level of analysis that airmen, by their training, were unable to provide.

Naval and ground commanders of the same period did not have the same problem. For an army officer commanding an infantry division, for example, the target or objective to attack was generally similar in nature to his own command. It would probably be another infantry division or smaller-sized unit trying to block his advance. To analyze the target and its importance, therefore, was something that the ground officer was trained to do. The ground commander could determine success or failure by the amount of ground gained and the level of destruction of the enemy and his own forces.

For American airmen, target selection and evaluation were a much more complicated and ambiguous task. Unlike the ground officer, airmen were generally not attacking targets similar to their own men and equipment.¹⁰ Hence the uncertainties of target selection and evaluation, which were embedded in the American conceptual approach to strategic bombing, created a need for civilian ex-

perts to change “imponderables” to ponderables. Organizations like the Committee of Operations Analysts, the Committee of Historians, and the United States Strategic Bombing Survey were an outgrowth of this need.

I

The biggest problem for American air officers during the years following the end of World War I, however, was not so much target selection (that problem would present itself more fully in the 1930s when they began to develop a strategic bombing concept) as achieving a coequal status with the army and navy. The leading proponent in the 1920s for an independent air arm was Army General William Mitchell.¹¹ Conventional thinking concerning air power during that decade saw it mainly as an adjunct, or supporting arm, of ground and naval operations. Since air power, according to this line of thinking, could not win a war, it did not require independent status. Mitchell, conversely, argued that an independent air force could win by itself. He also posited that the United States should rely on an independent air force, not the navy, for its first line of defense.¹² For publicly criticizing his superiors and their respective services, Mitchell was court-martialed in 1925 and convicted of “conduct prejudicial to good order and military discipline.”¹³ After the conviction Mitchell resigned from the service but continued his air power crusade with greater zeal.

Throughout the court-martial ordeal Mitchell had the strong support of his fellow air officers. For example, Lieutenant Orvil Anderson, who later became a major general and served as a director on the Strategic Bombing Survey, testified on behalf of Mitchell’s ideas for an independent air arm. One year prior to Mitchell’s court-martial, the House of Representatives created a committee led by Representative Florian Lampert to determine air power’s role in the national defense. The committee received testimony from many air officers who argued that the air corps should have an independent role in defending the

continental United States from naval and air attack. The navy also presented its case to the committee. Lieutenant Ralph A. Ofstie testified that the nation's defense was in good hands with the navy and therefore an independent air force was not needed.¹⁴ Ofstie, like Orvil Anderson, became a director of the Strategic Bombing Survey at the end of World War II. His testimony in 1924 anticipated the bitter interservice rivalry between himself and Anderson over air power issues in the post-World War II unification debates.

During the Depression years of the 1930s, airmen had to show caution when advocating their conceptual approach to strategic bombing. Mitchell and other American airmen believed that strategic bombers were fundamentally offensive weapons designed to strike quickly, violently, and preferably with *surprise* at key targets in enemy territory.¹⁵ In the logic of air power theory that Douhet, Mitchell, and other airmen of the time understood, there was a need to strike first at the enemy's homeland to destroy its aircraft and production facilities *before* they could be brought to bear against the United States. Defense of the continental United States, however, was the ostensible justification that airmen used when calling for an independent air force. Continental defense fit comfortably with isolationist American attitudes. It would have been unpalatable for air officers to advocate air power in an offensive role after the American experience with German aggression in the Great War and the nominal support for the Kellogg-Briand Pact of 1929 that purportedly outlawed war. The Depression years focused American attention on internal domestic problems. Arguing for a fleet of long-range strategic bombers designed to attack the homeland of a foreign nation obviously smacked of direct American military involvement in foreign affairs. Air officers, therefore, had to couch their crusade for an independent air force (an air force that they understood fundamentally as an offensive weapon) in the rhetoric of defensive military policy that coincided with the isolationist temper of the American public.¹⁶

In 1937, Major General Frank M. Andrews, commanding general of the Army Air Forces, supported a congressional bill to make

the air arm independent from the army. The general stated in a memorandum to the army adjutant general that the rapid evolution of bombardment aviation in other threatening nations throughout the world had convinced him “that a safer state of national security and peace can be insured more positively and sooner, through the development of air defense and the Air Forces which make possible such defense . . . on a basis coequal in authority with the Army.” The implication of General Andrews’s statement was that the proposed independent air force would use its airplanes in a defensive role: to engage and destroy enemy aircraft in the air as they attempted to bomb American cities. This was not primarily the way General Andrews and other airmen intended to use an independent air force. The general went on to acknowledge in the same memorandum that the modern bombardment airplane existed to attack the enemy nation’s “vital organs.” To keep a potential enemy from attacking the “vital centers” of the United States, General Andrews argued that

the airplane is an engine of war which has brought into being a new and entirely different mode of warfare—the application of Air Power. . . . It is another means, operating in another element, for the same basic purpose as ground and sea power, the destruction of the enemy’s will to fight. It is a vital agency, to insure in peace, the continuation of our nation’s policies and existence, or in war, the destruction of the enemy’s will to invade our defensive jurisdiction.¹⁷

According to the American conceptual approach to strategic bombing that by 1937 was reaching maturity at the influential Air Corps Tactical School, the way to break the enemy’s will to resist was first to destroy its war-making capacity by bombing key economic-industrial targets.¹⁸ Once those key targets had been selected and bombed, the will of the enemy would most likely collapse.¹⁹ General Andrews’s rhetorical allusion to the defensive use of airpower nevertheless was grounded in an offensive conception for an independent air force. To destroy the enemy’s “will to invade,” as the general suggested, the United States would have to launch a strategic bombing offensive that

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