



**From the beginning, critics
have lined up to take wild
swings at military aviation.**

Bogus Charges Against Airpower

By Phillip S. Meilinger



AIRPOWER, and specifically strategic bombing, generates controversy. Ever since the US Army bought its first “aeroplane” in 1909, debates have raged over its utility, effectiveness, and even its morality. These debates continue despite (or perhaps because of) the hundreds of books that have been written on the subject and the scores of combat operations witnessed. As the saying goes, certain topics tend to produce more heat than they do light. Some of the questions regarding airpower and strategic bombing defy easy answers, because soldiers, sailors, and airmen approach war from different viewpoints and service-cultural perspectives. Unfortunately, much of the debate regarding airpower and strategic bombing has been colored by misconceptions, inaccuracies, and myths.

This paper is an attempt to clear away some of the detritus by answering some of the charges commonly made regarding airpower and strategic bombing.

Charge: Between the world wars, the Army Air Corps received more than its fair share of funds from the Army, but continued to complain, agitate, and ask for more.

Response: On average, the Air Corps received 11.9 percent of Army appropriations between 1919 and 1939. There were, however, other sources of funding that funneled money into base construction, ordnance, medical supplies, etc., that benefited the Air Corps. When these “indirect appropriations” are included, the Air Corps received on average 18.2 percent of the total Army budget. Note that is the Army budget, not the US defense budget, which included the Navy and Marine Corps. This low level of emphasis is highlighted by the fact that as late as 1939, of the 68 general officers of the line in the US Army, not one of them belonged to the Air Corps. No service today would consider 10 percent of the defense budget as equitable, nor would it want its most senior positions occupied by officers from another service.

Charge: The Air Corps was unbalanced toward bombardment entering World War II, in both doctrine and force structure. As a consequence, air support of ground forces was inadequate and largely ignored by airmen.

Response: The Air Corps Tactical School is often depicted as a hotbed of radicalism. In actuality, 50 percent of the ACTS curriculum in the mid-1930s did not even deal with air matters. Instead, it covered the other Army branches, naval affairs, and the basic rudiments of being a staff officer—writing, logistics, administration, etc. Of the 50 percent of the curriculum devoted to air matters, only part focused on strategic bombing—pursuit, attack, and observation were also covered. In the 1935 curriculum, for example, 89 out of 494 class periods were devoted to “Air Force” and “Bombardment” subjects—18 percent of the curriculum. Certainly, the budding doctrine



Two years prior to the attack on Pearl Harbor, less than two percent of the US aircraft buy went to strategic bombers.

of strategic bombardment was taken very seriously at ACTS, but that is a far cry from maintaining that bombardment dominated the curriculum.

As for official Army doctrine—which is what the Air Corps was required to follow—Field Manual 1-5, *Employment of Aviation of the Army*, dated 1940, stated that offensive air forces would receive their targets from the “field commander,” a soldier, and that air’s first priority was to “decisively defeat important elements of the enemy armed forces.” That was the doctrine with which airmen began World War II.

If it were true that the Air Corps favored strategic bombing, then one would expect to see that reflected in iron on the ramp. Yet, when World War II broke out in Europe in September 1939, there were a mere 26 B-17s in the Army Air Corps. The US then began to rearm, and over the next two years the Air Corps purchased nearly 21,000 aircraft. Of those 20,914 airplanes, 374 were strategic bombers—only 1.8 percent of the total aircraft bought during that two-year period.

“Attack” aircraft, those specifically designed to support ground forces, were always a priority within the Air Corps. Indeed, the first all-metal monoplane in the Air Corps was the Curtiss A-8 Shrike that entered the inventory in 1932, nearly two years before the Martin B-10. In 1944, the Army Air Forces’ Ninth Air Force in Europe consisted of 4,500 aircraft—the largest tactical air unit in history—and was larger than the Luftwaffe’s entire combat strength. The Ninth’s commander, Lt. Gen. Hoyt S. Vandenberg, was a career fighter pilot who became the Air Force Chief of Staff in 1948. Other tactical airmen who achieved four-star rank included Nathan F. Twining (later Chairman of the Joint Chiefs of Staff), George C. Kenney, Earle E. Partridge, Ira C. Eaker, and John K. Cannon. Ground support aviation and its practitioners did not suffer.

Charge: The Air Corps entered World War II with a “Douhetian” concept of air war that emphasized area bombing and the waging of war on women and children.

Response: Giulio Douhet was an Italian air theorist whose major work, *Command of the Air*, advocated the bombing of urban centers. No one in the Air Corps hierarchy during the 1930s advocated such an air strategy. On the contrary, for military, legal, and humanitar-

ian reasons, such an air strategy was expressly rejected. Instead, the Air Corps formulated a doctrine of high-altitude, daylight, precision, formation bombing of industrial targets. The prewar theories of ACTS were translated into a war plan in August 1941, AWPD-1. Its thrust was strikingly similar to those theories—no surprise since four former ACTS instructors wrote the plan. It called for the destruction of Germany’s industrial structure through a sustained bombing campaign.

The doctrine manual the AAF took into the war, FM 1-5 referenced earlier, listed several target systems that could be struck after the first priority (enemy forces) had been sufficiently addressed: raw materials, rail, water, and motor communications, power plants, transmission lines and other utilities, factories and processing plants, steel mills, oil refineries, “and other similar establishments.” There is no mention of targeting the civilian population. On the other hand, the bleak realities of war, coupled with the technological limitations of contemporary aircraft and bombsights, the miserable weather over Germany and Japan, and extremely stiff enemy defenses, rendered prewar doctrine insufficient. But few sailors or soldiers accurately predicted what the war would look like, either, as Pearl Harbor, Savo Island, Bataan, and Kasserine Pass painfully illustrated. It took all of the services some time to adjust to the war’s realities.

Charge: Airmen thought they could win the war alone.

Response: Airmen did not believe they could win the war “alone;” rather, they thought that airpower could play a dominant or decisive role in both Europe and the Pacific—just as soldiers and sailors believed they could play such roles. Airmen realized the importance of the attritional toll that the Eastern Front was taking on the German war machine, as well as the effects of the US Navy’s unrestricted submarine warfare campaign against Japan. Some airmen *did* maintain, however, that given a higher priority, strategic bombing—in conjunction with these land and sea campaigns—could force German and Japanese surrender prior to an invasion of France or the Japanese home islands. That is in fact what happened in Japan and, it was believed, could have happened in Europe. Realizing that much of the Allied bombing effort was diverted to support the invasions in North Africa, Sicily, Italy, and Normandy, the Battle of the Atlantic, the attacks on the German missile launching sites and the submarine pens, the Okinawa campaign, and B-29 mine-laying operations in Japanese home waters, one can better understand the airmen’s argument. Indeed, 85 percent of all American bombs fell on Germany after D-Day (June 6, 1944). In the Pacific, 96 percent of all bombs fell on Japan after March 9, 1945. Airmen have often wondered what the results would have been had this “crescendo of bombing” occurred earlier.

Charge: German production continued to increase throughout 1944, especially aircraft production. Therefore, the bombing offensive was ineffective.

Response: Production did increase in Germany through the first half of 1944; it then began falling precipitously

in virtually all categories that autumn. Most of the production increase was the result of slack in the German economy—it had not been fully mobilized—and inefficiency caused by the lack of centralized control over raw materials and production assets. For example, the automobile industry, the largest sector of the German economy in the 1930s, was utilized at barely 50 percent of its capacity during the war. Many of these maladies were remedied by the appointment of Albert Speer as armaments minister in early 1942, but the real issue concerns what German leaders *expected* to produce vs. what they actually *did* produce. The difference between those figures is largely attributable to Allied bombing. In January 1945, Speer reported that Germany had produced 35 percent fewer tanks, 31 percent fewer aircraft, and 42 percent fewer trucks than planned during the previous year. German industry was able to surge in 1943 and early 1944 partly because it had not yet been seriously attacked (recall the statistics above regarding when the bombs actually fell on Germany). When it *was* attacked, the results were dramatic. In January 1945, Speer told Hitler: “The war was over in the area of heavy industry and armaments. . . . From now on, the material preponderance of the enemy can no longer be compensated for by the bravery of our soldiers.”

As for aircraft production, *fighter* production apparently did increase but did so at the expense of bomber and cargo aircraft—65 percent of all aircraft accepted by the Luftwaffe in 1944 were single-engine fighters, whereas in 1942, more than half of aircraft production had been bombers. Allied bombing forced Germany to stop building *offensive* weapons and concentrate instead on *defensive* ones.

There were also large discrepancies in the number of enemy fighters supposedly produced and the number actually employed. The weakness of the Luftwaffe can be best understood when it is realized that by April 1944 there were only 300 German fighters in the west to oppose the 12,000 aircraft of the Allies, with another 500 in the east to oppose the 13,000 aircraft of the Soviets. As a consequence, on D-Day the Luftwaffe flew only 200 sorties, most of which failed to reach the beachhead and none of which inflicted significant damage—compared to the Allies who flew nearly 9,000 sorties. The Luftwaffe had been eliminated as a threat to the Allied invasion, despite what the production figures allegedly illustrated.



Targets were tactical—armored vehicles, motor transports, and locomotives—not urban centers.

Even if we sweep those arguments aside, we look at the basic charge: Production increased, so bombing was a failure. A different perspective would be to note that in 1939 the German army consisted of 120 divisions. Yet, despite four years of war and the combined efforts of the Soviet, American, British, and French armies, it had grown to 318 divisions by 1944. Using the (fatuous) logic of the production argument above, the Allied armies were a dismal failure—no matter how hard they fought, the German army continued to grow.

Charge: Bombing was ineffective because it stiffened enemy morale.

Response: In truth, the United States Strategic Bombing Survey reported the following regarding morale in Germany: “Bombing appreciably affected the German will to resist. Its main psychological effects were defeatism, fear, hopelessness, fatalism, and apathy. It did little to stiffen resistance through the arousing of aggressive emotions of hate and anger. War weariness, willingness to surrender, loss of hope in German victory, distrust of leaders, feelings of disunity, and demoralizing fear were all more common among bombed than among unbombed people.”

Regarding the Japanese population, the USSBS reported: “Civilian morale was predominantly, but not completely, destroyed. Just before the end of the war, there was still roughly one-fourth of the civilian population with some confidence in victory and willingness to go on.” A study of morale under bombing conducted later confirmed the USSBS findings, while also concluding that if the populace did become angry, it was usually directed at their leaders for failing to protect them, not against the enemy.

Absenteeism among workers is a significant measure of economic performance, and in mid-1945 absenteeism in Japanese factories approached 50 percent. Nearly 8.5 million people had fled the cities to escape the bombing and nearly one-third of them were factory workers. In Germany, absenteeism hit 20 to 25 percent in key factories.

Charge: The atomic bombs were unnecessary. The Japanese were about to surrender, and even if not, an invasion or continued blockade would have been more humane.

Response: There is no indication the Japanese government was seriously contemplating surrender in July or early August 1945. President Truman’s “Potsdam Declaration,” calling on Japan to surrender or else, but also suggesting that survival of the emperor was acceptable, was rejected on July 26. Top secret “Ultra” intercepts from that time frame reveal that the Japanese were expecting and indeed hoping for an invasion—they assumed it would be such a bloodbath (based on casualty figures at Iwo Jima and Okinawa) that the Americans would be deterred from launching such an invasion and they could therefore get better peace terms.

As for an invasion, according to US intelligence at the time, there were more than 600,000 Japanese defenders on the island of Kyushu—where our first landings, involving 767,000 personnel, were scheduled for Novem-



The Enola Gay mission eliminated a land invasion, which could have cost hundreds of thousands of lives.

ber 1945. In reality, postwar findings revealed there were 900,000 Japanese defenders. A US invasion of the main island of Honshu, consisting of more than one million soldiers, sailors, airmen, and marines, was scheduled for March 1946. There were more than two million Japanese regulars defending the main island.

The following statistics give an idea what an invasion would have meant:

- Japanese soldiers tended to fight to the death rather than surrender—95 percent on average throughout the war, with 97 percent at Saipan and 99 percent at Iwo Jima. Using these precedents, Japanese military losses would have been nearly three million dead.

- In previous Pacific campaigns, US casualties ran about one-third of the troops engaged. Thus, of the 1.75 million men scheduled to assault the Japanese home islands, we should have expected more than 500,000 casualties. During the war, about 30 percent of the US Army's combat casualties were deaths; based on that ratio, the invasions would have cost around 150,000 US dead.

- Civilians got caught in the way when US and Japanese forces fought. As many as 150,000 Japanese civilians died during the Okinawa campaign, as well as 10,000 Korean laborers. Hundreds of thousands of Japanese civilians would have been “caught in the way” and killed in the massive ground assaults scheduled for late 1945 and early 1946.

Canceling the invasion and maintaining the blockade would have been an extremely long-term strategy, and it would have had two seriously deleterious effects. First, it would have slowly starved the Japanese population to death, as we did the Central Powers in World War I, when it is estimated that more than 750,000 German civilians died as a direct result of the Allied starvation blockade. Deliberate starvation is not more humane than bombing. Second, while we held back and waited for the blockade to take effect, we would have been condemning millions of Asians then under Japanese occupation to privation or death. A US policy of waiting would no doubt have been branded later as a deliberately racist strategy, because as many as six million Asians had

already died under Japanese rule. Many more Chinese, Koreans, Vietnamese, Indonesians, Malays, etc., would have perished had we simply waited. In addition, the Japanese held more than 558,000 Allied prisoners of war and internees in August 1945. Japanese prison camps were notoriously deadly—nearly 40 percent of all prisoners died in captivity. Waiting the Japanese out almost certainly would have condemned these half-million men and women to death.

As for the contentious issue of what role the bombing, and specifically the atomic bombs, played in the Japanese decision to surrender, here are some statements made by key Japanese leaders at the time:

- “Fundamentally, the thing that brought about the determination to make peace was the prolonged bombing of the B-29s.”—*Prince Fumimaro Konoye, president of Great East Asia League and former Premier*

- “Merely on the basis of the B-29s alone, I was convinced that Japan should sue for peace.”—*Baron Kantaro Suzuki, Premier*

- “If I were to give you one factor as the one leading to your victory, I would give you the Air Force.”—*Adm. Osami Nagano, supreme naval advisor to the emperor*

- “The chance had come to end the war. It was not necessary to blame the military side, the manufacturing people, or anyone else—just the atomic bomb. It was a good excuse.”—*Chief Cabinet Secretary Hisatsune Sakomizu*

- “The enemy has begun to employ a new and most cruel bomb, the power of which to do damage is, indeed, incalculable, taking the toll of many innocent lives. Should we continue to fight, it would not only result in an ultimate collapse and obliteration of the Japanese nation, but also it would lead to the total extinction of human civilization.”—*Emperor Hirohito, radio address announcing surrender, Aug. 14, 1945*

Charge: Strategic bombing was, overall, a wasted effort producing only minor effects.

Response: The subject of strategic bombing's overall effectiveness in World War II could be the subject of several papers. Unquestionably, it was the combined efforts of all the services and all the Allies that brought victory. Even so, at the risk of oversimplifying the issue, here are some statistics derived from American and British bombing surveys:

- By December 1944, German rail traffic was down by 50 percent, aviation fuel production was down by 90 percent, Ruhr steel production was down by 80 percent, and German coal supplies were down by 50 percent.

- By mid-1943, Italian industrial production was down 60 percent.

- Seventy-five percent of all German 88s (their best artillery piece and also best tank killer) were being used as anti-aircraft guns.

- Anti-aircraft artillery absorbed 20 percent of all German ammunition production, as well as one-third of

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all optics and more than one-half of all radar and signals equipment. The aluminum used to make AAA shells was enough to have built an additional 40,000 airplanes.

■ Two million people were engaged in the repair of damaged factories; one-half million were engaged in trying to move German factories underground; one million were used to reproduce civilian goods destroyed by air attack; and one million were engaged in the production and manning of air defense equipment. (There were more than 55,000 AAA batteries in 1943.) That's a total of 4.5 million people, or 20 percent of the German workforce. What if those 4.5 million had been building tanks, bombers, or submarines, or worst of all, put in uniform and stationed in France to defend against an Allied invasion?

Note also that production losses were not the result of German industrial areas being overrun by Allied troops. Silesia was not captured by the Soviets until late January 1945; the Rhine was not crossed at Remagen until March 7, 1945; and the Ruhr, Germany's industrial heartland, was not overrun until April 1945.

Below are statistics from USSBS regarding Japan:

■ By July 1945, aluminum production was down to nine percent of the wartime peak.

■ Steel and oil production were down to 15 percent of wartime peak.

■ Production in cities *not* bombed in Japan was at 94 percent of wartime peak but 27 percent in cities that *had* been bombed.

■ Overall, Japanese production dropped 53 percent between November 1944 and July 1945.

This latter fact prompted the USSBS to state: "By July 1945, Japan's economic system had been shattered. Production of civilian goods was below the level of subsistence. Munitions output had been curtailed to less than half the wartime peak, a level that could not support

sustained military operations against our opposing forces. The economic basis of Japan had been destroyed."

Airpower alone did not cause this catastrophic collapse. The US Navy's unrestricted submarine warfare campaign, as well as the amphibious assaults of hundreds of thousands of US and Allied troops, were crucial to ultimate victory.

Regarding the cost of airpower: The US spent about \$183 billion on armaments during World War II, of which the AAF's aircraft share was \$45 billion (24.5 percent). Of that amount, the AAF spent \$9.2 billion on heavy bombers (20.4 percent of the AAF total, five percent of the US total). In numbers of aircraft produced, of the AAF's 230,175 total, 34,625 were heavy bombers (15 percent). Was the five percent spent on bombers by the AAF excessive?

Charge: Strategic bombing was inherently inhumane and uncivilized because its victims were mainly helpless civilians.

Response: Civilian casualties in war are always too many and always regrettable. The USSBS states that 630,000 died in Germany and Japan as a result of air attacks—later estimates push this number higher. Although a terrible toll, it must be remembered that 60 million people died in World War II. This horrific total included 15 million Russian civilians—more than one million at the siege of Leningrad alone—yet bombing played almost no role on the Eastern Front. The bombing of Dresden in February 1945, often cited as a heinous act, killed perhaps 30,000 people, but more than five times that number of civilians died in the ground fighting on Okinawa. In truth, the vast majority of those who died in World War II, worldwide, were the result of traditional land and sea warfare. ■

A Note on Sources

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