

FOCUS: Morale and Targeting

Terror Targeting

The Morale of the Story

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One might say that the physical seem little more than the wooden hilt, while the moral factors are the precious metal, the real weapon, the finely-honed blade.

—Carl von Clausewitz

CLAUSEWITZ NOTED CORRECTLY that war is foggy. One of its foggiest elements is morale, a subject clearly less glamorous than high-technology precision weapons and information systems but no less important. There has been no “revolution in morale affairs” to make the gray shades of morale more black and white. Instead, because morale keeps us flying on instruments “in the soup,” it serves as a governor to check the hyper pace of modern warfare. Morale inertia also carries an imperative that the will to win the fight is something the victor must maintain and the vanquished must lose.¹ United States Air Force leaders know this because they continue to face challenges worldwide having to do with people’s willingness or lack of will to keep the peace. Morale played a major part during aerial bombing campaigns in Southwest Asia and more recently in Eastern Europe, where it again remained an elusive but critical factor. In addition, despite the Air Force’s airpower and space power preeminence in the world, its people are suffering declining morale due to high operations tempo and unpredictable deployments. Fundamental to the Air Force’s current scheduling transformation—using on-call expeditionary wings—is a desire to



improve the current morale slump and its consequent impact on retention.

Morale’s interface with high operations tempo and aerial bombing is nothing new to the Air Force, and sometimes a review of the past can help illuminate present situations. Clausewitz once again has appropriate words: “History provides the strongest proof of the importance of moral factors and their often incredible effect: this is the noblest and most solid nourishment that the mind of a general may draw from a study of the past.”²

For this article, the study of the past involves primarily World War II, when US Army Air Forces leaders also faced tough choices as high aircrew morale corresponded to perceptions of success against the enemy, but low morale reflected excessive operations tempo and losses. The article explores morale theoretically as well as historically, linking it to leadership by analyzing how various military leaders approached morale and made it integral to operations. It presents a typology of positive and negative morale and analyzes the role of morale in past wars—in particular,

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World War II area (“terror”)³ bombing—to suggest that morale was, and still is, fundamentally one of the most difficult issues with which aerial strategists and aviators have had to deal. Finally, it argues that although morale is a fuzzy subject, it requires both pinpoint accuracy and understanding when it comes to targeting.

This is a high-pitched theoretical study about some complex issues, but it is written for the Air Force flyer, who needs to consider what his or her predecessors were doing and thinking in the past when they launched into the wild blue. Operators need to be thinkers. Especially when one is under the increasing stress of combat and operations tempo, it is important to be morally committed to the mission, knowing that it is the right thing to do.

Morale is an age-old challenge. During World War II’s Combined Bomber Offensive (CBO), morale bombing was costly and its success unproven. Likewise, morale bombing still appears to be a major challenge today for “effects-based targeting,” particularly for a quick win during the so-called halt phase of war. Another challenge is unit morale, the commander’s constant concern. In a way, morale is like a trump card of war, and Air Force decision makers today must appreciate it as one of the major organizational and operational issues facing the Expeditionary Air Force.

At the previous turn of the century, military leaders considered moral force primary to victory. Hence, military leaders had to know how to boost unit morale, and staff-college courses emphasized morale as several times more important than materiel factors. One word, *moral*, meant both morality and morale. Tied to *élan*, moral force, and the offensive, most military leaders considered morale essential to victory.⁴

Morale has different meanings but generally refers to individual or collective mental attitude. Military theorist and historian S. L. A. Marshall says morale is “when your hands and feet keep working when your head says it can’t be done.”⁵ Another author says it is “wanting to do what you have to do.”⁶ These nonesoteric descriptions are useful in understanding morale, particularly in the heat of

battle. If morale is the desire to continue the fight, then strategies must target morale in order to break the enemy’s will to resist. This is why morale is so important. It can lie at the heart of targeting for effect.

Yet, targeting morale is complex. It can involve both indirect and direct attack against a multitude of potential targets. One of the most important indirect targets is leadership because it is linked to discipline, key to the strength of unit or societal morale.⁷

According to Marshall, morale and discipline lie on opposite sides of a coin: “When one is present, the other will be also. But the instilling of these things in military forces depends upon leadership understanding the nature of the relationship.”⁸ The leader holds that coin in hand and must understand and exploit discipline to boost morale. Discipline and morale come from each other and are symptoms of each other; both play a part under fire to keep soldiers fighting.⁹ This involves not only smaller military units but, as Clausewitz notes, extends to leadership in society.¹⁰

Of course the discipline thing can go too far. A military unit that is disciplined too harshly will have low or “negative” morale. Level of intelligence or education may affect this, insofar as “thinking” people might embrace discipline when it makes sense but then not stand for tyrannical discipline.¹¹ For example, many relatively well-educated members of bomber crews showed strength of will to fly dangerous bombing missions unless they felt hopelessly abused.

The most effective mix is reasonable discipline and unreasonable morale. Reasonable discipline causes soldiers to feel good about themselves as a unit. Unreasonable morale is the kind of enthusiasm that helps soldiers charge into danger or hold ground against difficult odds. Again, effective leadership is the key: “The morale of the force flows from the self-discipline of the commander, and in turn, the discipline of the force is reestablished by the upsurge of its moral power.”¹²

Specifically, morale-boosting leadership means caring for the troops, acting justly, setting an impeccable image, and allowing people to see themselves as fighting soldiers.¹³ His-

torian Mark Wells notes in his definitive study of morale in World War II bomber aircrews that leadership was paramount to the success of fighting units and the principal difference between low or high squadron morale.¹⁴

These same concepts would seem to apply as well to civilian societies, which also have levels of social and cultural discipline, often embodied in customs and traditions, understood ethnic codes, or laws. Correspondingly, the leaders of those societies play fundamental parts in setting and maintaining national perceptions and the social will to maintain discipline (i.e., in time of war, the will to fight).¹⁵

Col Dale Smith links leadership, morale, and organizational success, and he identifies nine components of leadership and morale success.¹⁶ Most importantly, to boost morale, the leader must maintain overall unity of purpose and the perception of progress toward that purpose. Thus, a basic morale target is leadership, not so much from the standpoint of Col John Warden's inner ring and the leadership linkage to command and control (C²) but from what might be called "morale control"—the way leadership affects discipline and people's perceptions of a united purpose. Interestingly, none of Smith's components relate to basic living standards often associated with morale and targeted as a way to break the enemy's will.

Although morale is influenced by food, safety, and health, it transcends these basic concerns when it comes to mission and objectives. Morale during World War II was usually higher in active theaters than in noncombat areas, despite the increased danger.¹⁷ Furthermore, at a much safer time of postwar withdrawal, morale dropped to its lowest level of the war. Finally, as the article discusses later in more detail, significantly reduced living conditions in Germany and Japan did not cause the populace to quit working. Again, unit perceptions of successful contribution to the mission and objective override other morale factors, making some of the concepts behind CBO area bombing questionable. The strategy appears to have targeted living/working conditions more than perceptions of objectives and unity of purpose be-

cause bombs were not dropped on urban areas in Germany with the assumption or hope they would hit Nazi leadership. Rather, they were aimed at the general society.

Since Napoleonic times, societies have become part of the fight and sometimes part of the target. Brig Gen Giulio Douhet proposed that aerial bombardment strategy no longer differentiate between combatants and non-combatants. Obviously, this was the situation in World War II, in which civilian morale was as important as that of the military.¹⁸ The military and cultural discipline of the Germans and Japanese from 1940 to 1945 most likely played a large part in maintaining their will to fight. Hence, cultural discipline and national leadership became fundamental factors in the war. Interestingly, however, strict totalitarian regimes and democratic states showed similar levels in the morale strength of civilians,¹⁹ most likely because both types maintained unity of purpose.

Unity of purpose, then, probably relates to the morale *Schwerpunkt* of a resilient people. The morale center of gravity is leadership-inspired individual and collective confidence in unity of purpose. After people have lost confidence in leadership, in their own abilities, and in their contribution to the war effort, they may cease resisting. Targeting confidence, however, is a complex issue, but an important part of it is leadership.

Again, targeting can be direct or indirect. Obviously, leadership influence can be eliminated by cutting command or social-structure linkages so that society no longer associates its confidence with its leaders. Another indirect option involves bombing the society at large so as to kill the populace or at least cause loss of sleep and reduced worker performance.²⁰ That sounds like direct targeting, but it is not. It eliminates the confidence of the victims, but the actual target is the confidence and morale of the surviving population.

The German plan Fall Gelb—the invasion of Belgium, Luxembourg, and the Netherlands—was based partly on the assumption that French moral force was weak and would collapse under the effect of a decisive blow against the army.²¹ According to one author,

"France had become accustomed to defeat and the habit had acquired its own aura of apathetic fatalism."²² Vichy France was a direct result of military defeat and morale collapse.²³ On the other hand, the French resistance movement showed great social discipline and morale strength. Similarly, Soviet civilians and soldiers showed incredible strength of will facing German opposition as well as purges from within: "The Soviet Army displayed a bravery, tenacity and lack of squeamishness about casualties that suggested that the traditional qualities of Russian soldiery had not been undermined by Stalin's tyranny."²⁴ Against such strength of moral will, perhaps Adolf Hitler's Operation Barbarossa was doomed from the start. Although in some respects Hitler may have been a master at using morale to suit his purposes, he clearly did not properly attack Soviet morale—particularly in treating Russians and Slavic people as *Untermenschen* or inferiors. Why moral force collapses in some instances and not in others is part of the chance of war, but the challenge to the military strategist is to at least try to influence the odds.

Direct targeting of morale involves attacking group goals, cultural histories and traditions, symbols, and ideology.²⁵ Psychological operations (PSYOP) is officially the business of targeting the mind of the enemy and often his will to resist, but the distinction with PSYOP is how the message is communicated. Normally geared directly toward morale, PSYOP uses television, radio broadcasts, and other methodologies rather than physical destruction to convince the enemy to do something.²⁶ In addition, information warfare and elements of unconventional/revolutionary warfare seen in the writings of Mao Tse-tung come close to a direct-attack methodology.

Morale bombing in World War II, on the other hand, entailed indirect attack against the will to resist. It followed Alexander de Seversky's advocacy of attacking communications, administration, and basic requirements for living: food, shelter, safety, and clothing.²⁷ Attacking morale in this manner, indirectly, is a strategy of exhaustion. The German strategist Hans Delbrück categorized strategy into

two camps: *Ermattungsstrategie* (exhaustion) and *Niederwerfungsstrategie* (annihilation). So far, and certainly as the CBO demonstrated, indirect targeting of morale has correlated more closely to an exhaustion strategy.

Many times during World War II, indirect attack—not just from the air—failed to achieve moral collapse. For example, the Germans failed to destroy the will of Soviet citizens during the siege of Leningrad. In a tragic irony, German civilians in Dresden died in the inferno of firestorms while inhabitants of Leningrad froze to death. The fact that these and other examples of indirect attack on morale in World War II enjoyed only moderate success might suggest that strategists misunderstood morale or engaged in terror bombing simply because they had no other option. They were faced with the extreme need to win the war and were committed to do that, no matter the cost.

So far, this analysis has suggested that effectively targeting morale means hitting the leadership and social- or command-structure linkages that give morale its strength. Since morale is linked to leadership, discipline, and perceived unity of objective or purpose, indirect or direct attacks must aim to eliminate those entities. The morale-targeting dilemma, however, is still more complicated than that because morale is a two-way street of cause and effect. For further analysis, one may break morale into parts.

Morale exists in both positive and negative planes. This description is more useful than others, such as "good" or "bad" morale, since the words *positive* and *negative* provide a sense of the electric-emotional charge associated with each. On the one hand, positive morale is the charged-up, excited camaraderie soldiers gain from satisfied needs, their positive sense of mission and unity, or a wide spectrum of other causes. Respect for a leader can manifest itself in positive morale; also, as mentioned, effective discipline plays a key role in positive morale. Most commonly, positive morale involves mutual confidence and striving for something more important than the individual.²⁸ Ground soldiers often experience positive morale when they see friendly flyers over-

head. They know they are part of a team effort and have not been abandoned. The bottom line from the aircrew perspective is that positive morale leads to completed missions.

Negative morale, on the other hand, is the poor motivation, cynicism, and contempt toward leadership and unit that are detrimental to the mission. It is not a lack of drive to succeed, for that is the absence of positive morale. Rather, negative morale is the desire not to succeed—to surrender, run away, or mutiny. For example, in World War I, German ground soldiers suspected that their Luftwaffe brothers were cowardly when they did not see them airborne but saw British flyers overhead instead. Daily diaries of ground soldiers mention that while they were in the trenches with little food, members of the Luftwaffe were back in the safety of Germany eating cake and drinking coffee.²⁹ During the next world war, negative morale grew among CBO bomber crews when their chances for survival diminished. Increasing numbers of airmen reported to the flight surgeon with questionable illnesses, and animosity grew toward superiors. Bomber Command was well aware that such negative morale could spread to endanger the mission and dealt harshly with cases concerning potential negative morale.³⁰ The American side of the CBO expressed equal concern. For example, a questionable report from a retired Army officer in Sweden was circulated in 1944, claiming that to date nearly two hundred aircrews had landed in neutral countries due to “lack of moral fiber.”³¹ Not wishing to publicize the issue and in defense of his heroic airmen, Lt Gen Carl A. Spaatz became outraged at the report and subsequent inquiry.³²

One should also differentiate between negative morale and combat-stress-induced emotional breakdown.³³ Negative morale involves a willful decision to discontinue the fight or to jeopardize the mission or cause. “Emotional casualties,” however, involve people who simply lack the capability to decide at all.³⁴ Such casualties reflect an illness of the mind whereas negative morale reflects an attitude of the mind. The primary cause of negative morale is lack of confidence in leadership and

perceived disunity of purpose; the primary causes of combat stress are fatigue and fear.³⁵

[Emotional] casualties reflect an illness of the mind whereas negative morale reflects an attitude of the mind.

One might assert that negative morale does not exist or is simply the absence of positive morale, arguing that morale itself is inherently positive. Perhaps this is true from the standpoint of the dictionary definition, but in terms of military effect, one has reasons to consider the negative aspect. Comparing morale to air is a useful analogy. We need air to fly and to breathe, just as soldiers need morale to fight effectively. Using this analogy, one might say incorrectly that the absence of air—a vacuum—is negative morale. Obviously, air breathers would not fight well in a vacuum, and an aircraft will not obtain lift in a vacuum. This, however, is more accurately the absence of air—related to the absence of morale. On the other hand, what if there is no vacuum—just bad air? Now soldiers could breathe but die from poison gas, or airmen might fly but then get knocked out of the sky by excessive turbulence. The linguistic scholar may argue that negative morale simply has another name: depression, dislocation, or even “the blues.” Regardless, the important point is that the morale targeting officer recognize the conceptual difference between the positive and negative aspects of morale.

In World War II, the strategy behind morale bombing involved both positive and negative morale. Bombing Germany could boost the Allies’ positive morale by satisfying desires for retribution, and it could cause negative morale in Germans, who might eventually revolt against their system and cause the German war machine to implode.

This balance between positive and negative morale, however, can rebound and have the opposite effect. For example, when air-

men are killed carrying out bombing campaigns, the unit's negative morale grows. In addition, as shown by Londoners during the blitz and by many Germans as well, bombing cities may not break civilian will and, on occasion, can even boost it. Adm Alfred Thayer Mahan was aware of such national strength when he categorized population and government types as factors in world power.³⁶ The Vietnam War is another interesting example of airpower in relation to the will of the enemy—in this case, the enemy's will to resist negotiations. From Rolling Thunder to Linebacker II, morale ebbed and flowed between the positive and the negative on both sides of the conflict, and many historians have argued that the downturn of morale on the part of Americans—or at least the stronger morale on the part of the North Vietnamese—contributed to North Vietnam's success.³⁷

We now turn to an examination of history and the way various leaders approached morale dilemmas during World War II's CBO. Lord Hugh Trenchard, head of the Royal Flying Corps in 1915 and future marshal of the Royal Air Force (RAF), prioritized morale to the extreme, stating that, in war, the "moral" was 20 times more important than the physical.³⁸ His calculation was unscientific—simply a perception of damage and accompanying numerical emphasis on morale, which he linked to the offensive doctrine that dominated tactical and strategic thinking at the time.³⁹

Critics have attacked Trenchard for his dogmatic approach to morale-oriented offensive tactics and for promoting the concept of area bombing against urban populations to break the enemy's will to resist.⁴⁰ Various writers claim that he pursued both immoral and ineffective bombing practices.⁴¹

Moral judgments vary, depending on circumstances. On the one hand, it may have been morally questionable during World War II to kill or wound 2.2 million Japanese people with aerial bombing and drive another 8.5 million to the hills by destroying their homes.⁴² Yet, for someone whose family had been brutally killed by Japanese soldiers, morality may not have been much of an issue.⁴³ On the other hand, when such use of

airpower is part of a wartime strategy of coercion or denial that fails to break the will of civilians or soldiers, the idea of attacking morale is questionable for a different reason—simple effectiveness.⁴⁴

John Keegan, in *The Face of Battle*, claims that victory is the moral collapse of the enemy.⁴⁵ Apparently, British and American air strategists of World War II agreed with that concept. Bombing to break enemy morale was part of the CBO, as stated in Casablanca's Point Blank directive: "The progressive destruction and dislocation of the German military, industrial, and economic system, and the undermining of the *morale* of the German people to a point where their capacity for armed resistance is fatally weakened. This is construed as meaning so weakened as to permit initiation of final combined operations on the continent" (emphasis added).⁴⁶

This approach to morale basically agreed with RAF Bomber Command's earlier directive issued 9 July 1941, stating that the bombing objective involved "dislocating the German transportation system and destroying the morale of the civilian population as a whole and of the industrial workers in particular."⁴⁷ On the material side, the CBO directive established intermediate, primary, and secondary objectives: Luftwaffe fighter strength, German submarine yards and bases, aircraft industry, ball bearings, oil, synthetic rubber and tires, and military motor-transport vehicles.⁴⁸ Thus, with multiple targets and objectives, the CBO was a large and complex campaign relative to the rest of the war. At its peak it involved 28,000 Allied combat planes and 1,335,000 men. Of those, many were lost in action, costing nearly a third of the total combined British and American war effort. The question of whether or not this was blood and machines well spent certainly had an overall impact on Allied morale in general—and similar questions are still pertinent to morale in today's conflicts. The difference between then and now, however, lies in the quantity behind the question. The modern aversion to casualties tends to illuminate the morale lowlight whenever one encounters a cost, human or machine, for which leadership is unable to

instill the positive perception that a compelling reason exists for such expense.⁴⁹

In retrospect, the CBO was moderately successful. It indirectly led to victory by damaging the German economy and industry; it achieved air superiority over the Luftwaffe in Europe; and it created an “indirect effect” by dislocating *Wehrmacht* efforts toward defense, making them unavailable for other purposes. It achieved its objectives of assisting indirectly with the Battle of the Atlantic and creating favorable conditions for Overlord.⁵⁰

From the standpoint of morale, however, the CBO’s success in breaking the enemy’s will to resist was questionable.⁵¹ Some authors have suggested that Allied and Axis aerial attacks on people showed, ironically, that civilian resolve may have been stronger than that of soldiers.⁵² Morale bombing undeniably caused significant suffering, insecurity, and lack of confidence in Nazi propaganda, but this still had no appreciable effect on behavior. *The United States Strategic Bombing Survey* concluded that “depressed and discouraged workers were not necessarily unproductive workers.”⁵³ Apparently, British strategists were incorrect in assuming that the German people would be less resilient than the British.⁵⁴

Likewise, aerial bombing of similarly resilient Japanese civilians and soldiers proved to be a very difficult way to break the enemy’s will. Here again, suffering and dislocation did not necessarily translate into a behavioral change, as indicated in a captured diary of a Japanese soldier who wanted some Japanese air cover against constant and “especially fierce” aerial bombardment: “Oh God, please send us some planes—even if it is only one. . . . No matter what happens, I shall live through to do my best to once again renew my spirit and my pledge. I’m not afraid of their planes, their mortars, their shelling—this is the spirit of Japan—I will fight on.”⁵⁵ Against such an indomitable spirit, aerial bombing achieved only mixed success.

Thus, the morale bombing of World War II remains a contentious topic in the history of airpower.⁵⁶ Without decisively affecting the enemy’s will or morale, terror bombing produced, in the words of one author, “a torrent

of destruction without precedent.”⁵⁷ It also cost the lives of thousands of airmen so that 55 years after the fact, students of history are still asking if the results were worth the price.

Terror bombing was a compromise. It involved British and American domestic and political pressures for revenge in terms of offensive action, British and American incapability to bomb precisely, vulnerabilities to the bombers’ crew members, and airpower theories about morale. Leaders figured that attacking enemy morale would boost waning Allied morale. Sir Stafford Cripps, Lord Privy Seal and leader of the House of Commons, had serious doubts by mid-1942 regarding British morale resulting from a perceived lack of leadership in the war effort.⁵⁸ In addition, the Americans wanted an invasion, and the Russians demanded a second front. Hence, morale bombing served as appeasement. It was also a convenient default compromise between different industrial-targeting options. For example, when conflict arose within American and British camps over targeting options such as electricity, oil, steel, and transportation, resulting directives included the lowering of enemy morale as a beneficial product of the bombing, regardless of the target option selected.⁵⁹

Morale bombing was also a product of idealistic Douhetian theory, as well as overly optimistic predictions about accuracy and effect.⁶⁰ For example, in Britain the directive of 9 July 1941 was the first to target morale specifically, linking it to transportation targets (mostly railroads in the Ruhr Valley) and basing the decision on a postulated mean bombing accuracy of six hundred yards on moonlit nights—something Bomber Command fell far short of achieving.⁶¹ In addition to such mathematical calculations, influential bombing advocates added their opinions. Trenchard wrote the following to Winston Churchill in August 1942: “For the country to get mixed up this year or next in land warfare on the continent of Europe is to play Germany’s game. . . . Our strength and advantage over Germany is in the air—the British and the American Air Force.”⁶² Although British and American strategic airpower theory had



Radar bombing through clouds over Bremen, Germany, on 13 November 1943

begun similarly in targeting Germany's critical industrial nodes, Bomber Command adapted to bombing inaccuracies and low aircraft survivability by switching to area industrial and urban targeting. This decision was one of political, economic, technological, and military expediency supplanting idealism.

Some historians imply that the Americans maintained higher moral ground than the British in their use of airpower. Some did. American secretary of war Newton Baker had set a tone out of World War I with a staunch stand against terror bombing, in contrast to Lord William Weir, British air minister, who didn't mind if aerial bombing burned German villages to the ground. Perhaps the most famous British area bombing advocate two decades later was Air Marshal Sir Arthur "Bomber" or "Butch" Harris. Perceiving the loss of Bomber Command's overall aim due to constantly changing target directives, Harris vehemently criticized precision bombing of industrial bottlenecks as "panacea" bombing.⁶³ One should keep in mind, however, that many Americans' perspective of World War II had not been tempered with firsthand experience of two morale issues. One, the bomber did *not*, as Prime Minister Stanley

Baldwin had proclaimed, always get through (or those that did sustained heavy damage and loss of life). Two, the Germans had done it first with *Luftstreitkräfte* terror bombing of London. Harris's approach evolved into a single-minded desire and determination to kill German workers and disrupt German society.⁶⁴ He became committed to this cause and in some respects may have implemented the CBO directive incorrectly according to that commitment.⁶⁵ When challenged by superiors, Harris offered his resignation.

Harris had not been a terror-bombing disciple from the beginning but, like many others in Bomber Command, switched reluctantly and gradually to area attack—not wishing to do the wrong thing for the right reasons. Morale bombing had made sense on paper from a deterrence standpoint, and many RAF leaders believed that "moral collapse was the most likely outcome of bomb attack."⁶⁶ Yet, to employ it was another issue. During the Spanish Civil War, RAF air marshals had witnessed poor success against morale from German aerial attacks on Madrid as well as Italian attacks on Barcelona. Official RAF doctrine established in Air Pamphlet 1300 listed only military targets.⁶⁷

Hence, one argument maintains that Harris and his command did not choose to switch to morale bombing but that they were forced into it due to technological limitations and political expediency.⁶⁸ It was the only way to fulfill the RAF's traditional *raison d'être*—Trenchard's aerial offensive dictum of bombing the enemy harder. As a result, approximately three hundred thousand German civilians died due to aerial attacks, a figure some people use to condemn CBO failure rather than to substantiate success.⁶⁹

Harris and Bomber Command, however, were not singly responsible for the expediency decision and its effects. For the most part, the American decision for daylight precision bombing of industries was a matter of practicality more than morality.⁷⁰ General Spaatz was against bombing cities, not so much due to personal conviction of conscience but because he thought it was less efficient and effective than bombing the Luftwaffe and oil. This approach was in concert with the original American force-structure plan known as Air War Plans Division—Plan 1 (AWPD-1), developed by former Air Corps Tactical School instructors.⁷¹ Also, American bombing in 1945 against both Germany and Japan was as much terror bombing of civilians as any conducted by Bomber Command. Furthermore, one should remember that the Americans agreed to British area bombing as part of the CBO. Finally, like the British, the Americans also moved toward area bombing due to “circumstances well beyond control of the Army Air Forces.”⁷² Eighth Air Force dropped as many tons of bombs on ball-bearing manufacturing via area bombing as by “pickle barrel” bombing, with full knowledge of the collateral damage. American high-altitude daylight precision bombing was often no more precise than British area bombing at night.⁷³

Ironically, near the end of the war, the Americans and British were switching sides. By late 1944 and early 1945, Bomber Command accuracy, Allied air superiority, and bomb development led the British Air Staff to reconsider selective targeting, while the newly designated United States Strategic Air Forces were seriously pursuing “psychological bomb-

ing,” as evidenced by the attacks on Berlin and Dresden in February 1945.⁷⁴ As one author notes, “Certainly any distinction between American and British practices was lost upon the citizens of Dresden, Chemnitz and Berlin after visitations by the 8th Air Force in February 1945.”⁷⁵ The late shift in targeting, perhaps not incidentally, coincided roughly with American firebombing of Japanese cities—initiated for different reasons but area bombing of urban populations just the same.

Ironically, Bomber Command morale rose when Harris took command in May 1942, despite the fact that casualty rates immediately jumped from 3.7 to 4.3 percent. Harris knew that 4 percent was his break-even point for replacements to offset losses, and this led to his decision to switch to 80 percent area bombing at night.⁷⁶ In essence, then, the morale-bombing decision was for morale purposes—positive for his men and negative for his enemy.

Harris's American counterpart was General Spaatz, commander of Eighth Air Force.⁷⁷ Like Harris, Spaatz also experienced morale difficulties due to wastage rates, a problem he approached with tenacity. Spaatz had learned the hard way how not to try to boost positive morale. His plan of providing crews leave in the United States, after which they had to return to fight, proved counterproductive and was terminated. The best he could hope for was simply giving aircrews the perception of a reasonable probability of survival while ensuring mission accomplishment. Spaatz made the mission his first priority but tried to keep crews hopeful that they could survive the 25 combat missions necessary to accomplish the mission.⁷⁸

Spaatz appears to have kept his compassion for the troops mostly to himself and was not noted for charismatic pep talks. Instead, he believed that the most effective way to deal with morale was simply to let flyers know exactly where they stood. In this regard, he fought to make them believe in themselves and their positive effect on the war: “Our most important job just now is keeping up morale of these boys who are doing the fighting, and only by convincing them with facts can we prove to them that the results ob-

tained are worth the effort they are putting into the job.”⁷⁹ This clearly is an example of the leadership-discipline-confidence linkage to morale discussed earlier.

Personal courage and mission first—that was how Spaatz approached morale.

Finally, Spaatz was a doer rather than a preacher, which, according to S. L. A. Marshall, is important.⁸⁰ He says that a nondoe leader is like religion without works—soulless. In Spaatz’s case, no doubt his troops were aware that the general who was commanding them had flown through many dangers himself, had shot down enemy aircraft in World War I, and had set world records through personal courage in the air. Personal courage and mission first—that was how Spaatz approached morale.

The most notable CBO aspects affecting morale were the dangerous missions and the devastating firebombing. For example, Operation Gomorrah against Hamburg in summer 1943 was true terror bombing aimed to achieve negative German morale.⁸¹ On the other hand, as German night-fighter developments offset the British safety factor of night operations, losses incurred during the area bombing of Berlin six months later served to damage the positive morale of Bomber Command’s crews. The Americans also paid the price in lives with elusive success against key industrial nodes. On the Schweinfurt raids of 17 August and 14 October 1943, the unescorted bomber was clearly not as invulnerable as Gen Ira Eaker had predicted.⁸² No doubt, fighter escorts such as P-51 Mustangs were a huge morale boost to bomber crews on operations like Argument—popularly known as “Big Week” during February 1944. Even the unofficial escort name “little friends” connotes such positive morale.⁸³ Thus, at the risk of oversimplification, morale in the CBO was a bit like a teeter-totter: a rise in positive morale on one side could eventually affect negative morale on the other.

In a sense, a similar moral stage was set at sea, where the urban city was replaced by the merchant ship. Just as civilians in cities were integral to Germany’s war-fighting production, so were civilian sailors helping to resupply British and American war fighters. The Germans gravitated to unrestricted submarine warfare as they had done during the previous world war, attacking sea-lanes of communications and threatening “the survival of Great Britain and its postwar freedom of action as a great power.”⁸⁴ Similar to Bomber Command’s expediency to engage in aerial area bombing, it was also safest and most practical for German U-boat commanders to attack lone merchant ships without warning or attack convoys at night using Adm Karl Dönitz’s *Rudeltaktiken* (wolf-pack tactics).⁸⁵ Similarity between aerial and sea activities is less important than the fact that both situations heavily involved morale. Torpedoes, cold water, and sharks were terrifying to American sailors, just as antiaircraft flak and Luftwaffe fighters were to the bombers’ crew members. From a more strategic perspective of morale in terms of economy and national survival, British prime minister Churchill noted that the only thing that really frightened him during the war was the U-boat peril.⁸⁶

The CBO and the aerial bombing of Japanese cities were moderately successful campaigns of materiel exhaustion in which Allied operations succeeded in outlasting the enemy. In that sense, then, they were also campaigns of morale attrition. On the morale side, however, the campaigns were less successful. According to the recently declassified and published findings of the British Bombing Survey Unit, “in so far as the offensive against German towns was designed to break the morale of the German civilian population, it clearly failed.”⁸⁷

The Air Force today lives with the legacy of World War II’s bombing campaigns, both positively and negatively. The harshest critics posit various racial attitudes and conspiracy theories behind terror bombing; others argue that bombing was the manifestation of parochial interests to win the war for air-power more than to win the war itself.⁸⁸ One



Direct hit by flak: B-24 of the 464th Bomb Group destroyed on 9 April 1945

argument holds that damage and destruction counted, regardless of the effect, so the CBO was tailored to burn and destroy. The important fact for today, however, is that the situation has been reversed. American expectations now are that the Air Force must perform with precision and effect. This is a positive improvement in American aerial warfare, despite the potential inability to meet expectations should they become unrealistic. Still, perhaps the greatest difficulty is achieving expectations regarding morale.

This article argues that realistic expectations about targeting morale need to reflect an understanding of morale's complex and critically important role in war. As CBO planners learned, one cannot assume that bombing enemy targets like oil, electricity, and transportation systems will also, as a default, affect as desired an abstract target like enemy morale. Before air campaign planners target morale as part of a war-winning strategy, they should consider it in both its positive and

negative realms, as well as in its relationship to leadership and discipline. Despite quantum improvements in technologies, organization, and thinking since the time of World War II's CBO, some things remain the same. War is still hell, and the challenge of bombing to maintain or destroy morale is monumental.

World War II's CBO was successful in setting the stage for the success of Overlord, but the terror bombing of civilians was not very successful. As a strategy, it caused negative morale among bomber crews, and it failed to target the *Schwerpunkt* of German morale, just as firebombing Japanese cities failed to break the Japanese will to resist. Why then did Allied decision makers go for the terror-bombing option? There are many plausible reasons: desire for revenge and "eye-for-an-eye" retribution, inability to do anything else while facing a daunting enemy and a very uncertain future, perceived opportunity to prove the *raison d'être* of the air forces, avoidance of friendly ground casualties, and belief that it would

break enemy will. All of these and other reasons aside, the important point for today is knowing that targeting morale requires precise aerial bombing of C² and leadership to

As CBO planners learned, one cannot assume that bombing enemy targets like oil, electricity, and transportation systems will also, as a default, affect as desired an abstract target like enemy morale.

disrupt the linkage among leadership, morale, and organization success. Damaging a populace's living conditions may not break its will to resist unless carried to the morally questionable extremes of killing most of the people or completely destroying their ability to survive. At the time of the CBO, such apparent ruthless retribution as part of a strategy was more understandable to decision makers and Allied societies than it is to students of history who have not lived through the blitz and faced such an enormous task and uncertain outcome. Yet, with contemporary capabilities to do precision strikes, such terror uses of airpower are now unacceptable—for the United States at least. On the other hand, destroying enemy perceptions of their unity of purpose in order to cause collapse of moral force may still be a feasible strategy.

Most likely that strategy will continue to be exacted in a CBO-type operation. The practice of combining Allied aerial bombing forces began in World War I, was cemented in World War II, and has continued since. A more recent and successful CBO took place after the 1990 Iraqi aggression against Kuwait aroused coalition efforts against Saddam Hussein's C² centers, early warning systems, selected industries, Scud missile sites, and Republican Guard forces. The Gulf War CBO, again involving allied day and night aerial bombing, successfully dislocated the enemy with much greater precision than in the past. Area bombing still had its place in the CBO, with B-52 carpet bombing on the Republican

Guard. This, however, was confined to soldiers and was effective in destroying their will to resist. According to Gen Chuck Horner, the joint force air component commander of the Gulf War, "there is powerful evidence from the 88,000 POWs that air's most significant impact on Iraqi fighting strength was the destruction of morale."⁸⁹ In this respect, airpower was much more decisive in affecting one of the foggiest factors of war.

Even more recently, aerial campaigns over the former Yugoslavia were again CBOs—this time under the direction of the North Atlantic Treaty Organization (NATO). Likewise, these CBOs clearly involved morale as well, which became increasingly complex due to various so-called Cable News Network factors such as displaced millions of people and other results of ethnic cleansing. Again the enemy's morale center of gravity was difficult to target when it could not be isolated and was complicated by the fact that Serbia had a long history of resilience to negative morale factors. Perhaps for this reason, NATO air-to-ground targets reflected an objective to destroy Yugoslavia's infrastructure that supported its military, rather than attacking strategically from the start against leadership C². The idea was not to target morale but just the opposite: to deprive Slobodan Milosevic of the capability to pursue ethnic cleansing even if he still had the will to do it. It was a straitjacket strategy and in many respects once again became a process of attrition and exhaustion. As author William Arkin notes, "We won through sheer repetition,"⁹⁰ causing Milosevic eventually to discontinue the fight and leave Kosovo. Air superiority and aircrew confidence promoted morale among the NATO coalition, and the collateral damage to civilians was a miniscule fraction of that witnessed in World War II. What went into Milosevic's eventual decision to leave can only be surmised at this point, but perhaps it was knowing that NATO could hit pretty much with impunity what, where, and when it wanted, and that he could do nothing to stop it except pull out. The complete reality of what happened in Kosovo is still largely unknown and now under intense study, hope-

APPENDIX C

QUESTIONNAIRE FOR FOREIGN WORKERS

Questionnaire for French Workers
(Italian)
(Russian)

Age Married
Sex Single

Home in France
(Russia) city department
(Italy)

*To answer the following questions
please mark an X in the proper square*

- What schooling have you had
primary ()
secondary ()
- In what way did you work in Germany?
Drafted laborer ()
Substitute for prisoner ()
Transformed prisoner ()
Volunteer ()
Political deportee ()
War Prisoner ()
- In what cities did you work?
..... from to Employment.....
city date
..... from to Employment.....
city date
..... from to Employment.....
city date
- How many raids did you experience in Germany?
Please give us the dates of the heaviest bombardments.
..... city date
..... city date
..... city date
- Were you ever wounded during a raid? Yes () No ()
Were your lodgings damaged? Yes () No ()
Were your possessions lost? Yes () No ()
Were any of your friends wounded? Yes () No ()
Were any of them killed? Yes () No ()
- Did the first raid surprise you? Yes () No ()
or
Did you expect to be bombarded? Yes () No ()

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- Before the invasion of Germany by the Allies, did you witness any looting during a raid? Yes () No ()
Were the looters Germans () or were they foreigners ()
- Was the black market affected by the raids? Increased ()
Diminished ()
Unchanged ()
- Did you witness the evacuation of German civilians? Yes () No ()
Were these evacuations voluntary () or forced () or both ()
Where these evacuations well organized () or badly organized ()
Did the evacuation of their families affect the Germans who remained?
They were glad to know them in safety ()
Disturbed to be separated from them ()
Not affected ()
If you were in a region where evacuees were received, how did they get along with their hosts?
Well () Badly ()
- Did the bombings have any effect on the attitude of the German people toward the Nazi Party?
They blamed it for having begun the war ()
They blamed it for not having protected the cities ()
They became still more dependent on the party ()
Their attitude remains unchanged ()
- Before the invasion of Germany by the Allies, did any of the Germans that you knew come to the point, as a result of the bombings, to think that they could not continue the war?
Yes ()
No ()
Please give a brief explanation.
- Before the invasion of Germany by the Allies, did any of the Germans confide in you that they feared that Germany was going to lose the war?
Yes ()
No ()
- Why have the Germans continued their efforts to the very end, in spite of the raids?
Character of the German people ()
Their education by the Nazi Party ()
Governmental controls (police, S. S., etc.) ()
Fear of what an Allied victory would bring them ()
Other reasons ()
- Have you ever read any leaflets dropped by airplane?
Yes ()
No ()
Where they written especially for foreigners ()
Were they destined for Germans ()

Two pages from a questionnaire given to more than two thousand foreign workers during the Allies' occupation of Germany—part of an attempt to assess both the physical and psychological damage caused by Allied bombing. (From United States Strategic Bombing Survey, vol. 2 [New York: Garland, 1976], appendix C)

fully to shed more light on the dilemma of targeting and enemy morale. If nothing else, Kosovo reinforced the fact that morale is difficult to understand and predict.

The many facets of the morale outlook for the US Air Force show improvement as well as a warning. On the one hand, in the future, the added predictability provided by the Aerospace Expeditionary Force management concept will provide deployed aircrews valuable light at the end of the tunnel—critical for positive morale. On the other hand, force-protection concerns and increased casualty aversion can be morale choke points and must be perceived realistically. Americans may find themselves increasingly on the re-

ceiving end of morale targeting in the form of terrorism. It is not simply coincidence that terror bombing and terrorism share the same root word, for by its very nature, terrorism generally involves indirect attack on morale.

The good news is that American terror bombing of civilians is history—it has gone the way of pikes and muskets. We should not, however, pat ourselves on the back for being more moral than our Air Force predecessors. Our technology has simply allowed us to act more morally. With incredibly reduced circular errors of probability from munitions guided by our Global Positioning System and the national commitment to use such expensive weapons, we may now finally have the ac-

curacy to target morale from the air without directly killing many civilians. Yet, despite impressive abilities to halt enemies in their

tracks anywhere and anytime, targeting morale will probably still take more time than we would like. It is part of the fog of war. □

Notes

1. Sun Tzu, *The Art of War*, trans. Samuel B. Griffith (London: Oxford University Press, 1963), 54.
2. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), 185. See also Mark K. Wells, *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War* (London: Frank Cass, 1995), 213. Wells states that "it would be a terrible mistake for future commanders and medical officers to overlook the human dimension of the Combined Bomber Offensive."
3. Certainly, not all area bombing involves targeting morale under the label "terror" bombing, but for purposes of this study of the Combined Bomber Offensive, the terms are synonymous.
4. *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton, N.J.: Princeton University Press, 1986), 407, 521.
5. US Office of Information for the Armed Forces, *The Armed Forces Officer*, DOD GEN-36 (Washington, D.C.: Armed Forces Information Service, Department of Defense, 1975), 129.
6. Dale O. Smith, "What Is Morale?" *Air University Quarterly Review*, Winter 1951–1952, 44.
7. *The Armed Forces Officer*, 136.
8. *Ibid.*, 129.
9. *Ibid.*, 130.
10. Clausewitz, 103–4.
11. *The Armed Forces Officer*, 131.
12. *Ibid.*, 133.
13. *Ibid.*, 135.
14. Wells, 137.
15. Clausewitz, 100–101, 104. Clausewitz discusses the concept in terms of levels of development of civilized societies and relates genius in command with those degrees of development. The commander is integral to unit morale and strength of will.
16. Smith, 44. The nine components are awareness of objectives, agreement with objectives, faith in attainment of objectives, realistic picture of job ahead, determination to achieve objectives, confidence in leadership, satisfaction with progress toward objectives, extent of unification, and feelings of usefulness in contribution to objectives.
17. *Ibid.*, 43.
18. Edward R. Gilbert, "Human Factors in Strategy—The National 'Will to Fight'" (Maxwell AFB, Ala.: Air War College, April 1960), 1–3, United States Air Force Historical Research Agency (hereinafter AFHRA), Maxwell AFB, Ala., K239.042-1754.
19. Tami D. Biddle, "British and American Approaches to Strategic Bombing," *Journal of Strategic Studies*, March 1995, 128.
20. Conrad C. Crane, *Bombs, Cities, and Civilians: American Airpower Strategy in World War II* (Lawrence, Kans.: University Press of Kansas, 1993), 14.
21. H. P. Willmott, *The Great Crusade: A New Complete History of the Second World War* (New York: Free Press, 1989), 82.
22. *Ibid.*, 87.
23. A contemporary example of collapsing morale was the surrender of thousands of Iraqi Republican Guard soldiers following B-52 carpet bombing during the Gulf War of 1991.
24. Willmott, 142.
25. See Gilbert.
26. Steven Collins, "Army PSYOP in Bosnia: Capabilities and Constraints," *Parameters* 29, no. 2 (Summer 1999): 58. Collins argues that PSYOP has suffered from being stuck in a rut of traditional uses of leaflets and loudspeakers when television is overwhelmingly more effective today.
27. Crane, 18–24, provides an excellent discussion of this de Seversky thesis relative to the myriad other ideas of indirect attack against civilian morale that influenced Air Corps Tactical School thinkers and American air strategists.
28. Wells, 119, 211; and *The Armed Forces Officer*, 132.
29. German Documents, Trenchard Papers, MFC 76/1/73, Royal Air Force Museum, Hendon, United Kingdom.
30. Wells, 197.
31. Maj Gen F. L. Anderson (for Spaatz) to Arnold, letter, 29 July 1944, AFHRA, 622.1621-2.
32. Wells, 108–9.
33. *Ibid.*, 89. Historians have suggested that *morale* was a term "used and abused" in wartime to denote a variety of different combat-related symptoms that were detrimental to the mission.
34. Wells uses the term *emotional casualties* as a result of combat stress (page 61).
35. *Ibid.*
36. A. T. Mahan, *The Influence of Sea Power upon History, 1660–1783* (Boston: Little, Brown and Co., 1918), 44–50, 56–57.
37. George C. Herring, *America's Longest War: The United States and Vietnam, 1950–1975* (New York: McGraw-Hill, Inc., 1996), 186, 204, 304; Mark Clodfelter, *The Limits of Airpower: The American Bombing of North Vietnam* (New York: Free Press, 1989), 149; and Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y.: Cornell University Press, 1996), 210.
38. Pape, 61; and Crane, 17.
39. Eric Ash, *Sir Frederick Sykes and the Air Revolution, 1912–1918* (London: Frank Cass, 1999), 104–5.
40. P. R. C. Groves, "This Air Business," 25–26, Groves Papers, box 3, Liddell Hart Centre for Military History, King's College, London.
41. Some of Trenchard's harshest critics have been David Divine, P. R. C. Groves, H. R. Allen, and Frederick Sykes.
42. Raymond S. Sleeper, "Air Power, the Cold War, and Peace," *Air University Quarterly Review*, Winter 1951–1952, 7.
43. Michael S. Sherry, *The Rise of American Air Power: The Creation of Armageddon* (New Haven, Conn.: Yale University Press, 1987), xi. In his sociological study of airpower, one of Sherry's main themes is that "racial antagonisms" fueled American decisions to bomb civilians. Yet, very likely race had nothing to do with much of the motivation. It was simply reaction to overt aggression, regardless of race.
44. Pape's *Bombing to Win* provides an excellent analysis of coercive air strategies in relation to civilian and military morale.
45. John Keegan, *The Face of Battle* (New York: Viking Press, 1976), 302.
46. United States Strategic Bombing Survey, *The United States Strategic Bombing Survey: Summary Report (European War) September 30, 1945* (Washington, D.C.: Government Printing Office, 1945), 1, vi (hereinafter USSBS).
47. British Bombing Survey Unit, *The Strategic Air War against Germany, 1939–1945: Report of the British Bombing Survey Unit* (London: Frank Cass, 1998), 5 (hereinafter BBSU).
48. Williamson Murray, *Strategy for Defeat: The Luftwaffe, 1933–1945* (Maxwell AFB, Ala.: Air University Press, 1983), 170; and Anthony Verrier, *The Bomber Offensive* (London: B. T. Batsford, Ltd., 1968), 160.

49. Eric V. Larson, *Casualties and Consensus: The Historical Role of Casualties in Domestic Support for U.S. Military Operations*, RAND Paper MR-726-RC (Santa Monica, Calif.: RAND, 1996), xix.
50. USSBS, 24, 32.
51. "Impact of Air Attack in World War II: Selected Data for Civil Defense Planning," vol. 1, Stanford Research Institute, 1953, 3; and USSBS, 95.
52. Hans Rumpf, *The Bombing of Germany*, trans. Edward Fitzgerald (New York: Holt, Rinehart and Winston, 1962), 214.
53. USSBS, 97, 99.
54. Biddle, 102.
55. "Daily Intelligence Extracts for 26 Feb 1945," AFHRA, 830.639-1.
56. W. Hays Parks, "Air War and the Laws of War," in *The Conduct of the Air War in the Second World War: An International Comparison*, ed. Horst Boog (Oxford: Berg Publishers, Ltd., 1992), 355; and David MacIsaac, *Strategic Bombing in World War II: The Story of the United States Strategic Bombing Survey* (New York: Garland Publishing, 1976), xxi. Other concise assessments of the historical morality debate are in Crane, 1-11; Sherry, 15, 173-76; and Wells, 1.
57. Alan J. Levine, *The Strategic Bombing of Germany, 1940-1945* (Westport, Conn.: Praeger Publishers, 1992), 1.
58. Winston S. Churchill, *The Hinge of Fate* (Boston: Houghton Mifflin Co., 1950), 554.
59. *The Strategic Air War against Germany*, 2, 24. Although Bomber Command had plans aimed specifically at morale—such as W.A.8 and Hurricane 2—in general, morale remained an overarching abstract target that fit almost any plan to some degree.
60. Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (1942; new imprint, Washington, D.C.: Office of Air Force History, 1983), 20; and Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force*, vol. 1, 1907-1960 (Maxwell AFB, Ala.: Air University Press, December 1989), 78-82. Theorists included Brig Gen Giulio Douhet, Lord Hugh Trenchard, Maj Gen Sir Frederick Sykes, and Lord William Weir.
61. *The Strategic Air War against Germany*, xxvii, 5. The Cabinet Office's "Butt Report" condemned Bomber Command's accuracy by showing that only 10 percent of the aircraft actually bombed within five miles of the target.
62. Churchill, 551.
63. *The Strategic Air War against Germany*, xxvii; and Levine, 37.
64. Biddle, 124.
65. British airpower historian Sebastian Cox's savvy perspective of Harris relative to his wartime Bomber Command situation as well as complications from weather and other factors is a helpful counterbalance to the traditional condemnation Harris has received in the historiography. See *The Strategic Air War against Germany*, xxvii.
66. R. J. Overy, "Air Power: Historical Themes and Theories," in *The Conduct of the Air War in the Second World War*, 25.
67. Phillip S. Meilinger, "Trenchard and 'Morale Bombing': The Evolution of Royal Air Force Doctrine before World War II," *The Journal of Military History* 60 (April 1996): 258; James S. Corum, "From Biplanes to Blitzkrieg: The Development of German Air Doctrine between the Wars," *War in History* 3 (1996): 98; and Rumpf, 214.
68. Biddle, 115.
69. Olaf Groehler, "The Strategic Air War and Its Impact," in *The Conduct of the Air War in the Second World War*, 291-93; Rumpf, 229-33; and Levine, 190. One should note that casualty figures are widely different, ranging from over five hundred thousand to half that amount, depending on the source. According to the USSBS, the numbers are closer to 305,000 killed and 780,000 wounded (page 21).
70. Crane notes that neither President Franklin Roosevelt nor Gen Henry "Hap" Arnold "had any aversion to terror bombing when it suited their purposes" (page 6).
71. David R. Mets, *Master of Airpower: General Carl A. Spaatz* (Novato, Calif.: Presidio Press, 1988), 114; and Crane, 22-26. At the Air Corps Tactical School, the debate about targeting industry or civilians went round and round to eventually end up in AWPD-1 with a decision to refrain from bombing population centers unless necessary as a final death blow—and only when the proper psychological circumstances existed.
72. USSBS, 27.
73. Stephen L. McFarland, *America's Pursuit of Precision Bombing, 1910-1945* (Washington, D.C.: Smithsonian Institution Press, 1995), 184-90; W. Hays Parks, "'Precision' and 'Area' Bombing: Who Did Which, and When?" *Journal of Strategic Studies* 18, no. 1 (March 1995): 145-74; Biddle, 123-25; and Crane, 9.
74. Biddle, 123-25.
75. Willmott, 415.
76. Martin Middlebrook and Chris Everitt, *The Bomber Command War Diaries: An Operational Reference Book, 1939-1945* (London: Penguin Books, 1985), 296.
77. Eventually, Spaatz became commander of United States Strategic Air Forces in Europe.
78. Mets, 185-86.
79. Richard G. Davis, *Carl A. Spaatz and the Air War in Europe* (Washington, D.C.: Office of Air Force History, 1993), 384.
80. *The Armed Forces Officer*, 136.
81. Norman Longmate, *The Bombers: The RAF Offensive against Germany, 1939-1945* (London: Hutchinson & Co., Ltd., 1983), 261-63.
82. USSBS, 5.
83. Davis, 360.
84. Kent Roberts Greenfield, *American Strategy in World War II: A Reconsideration* (Baltimore: Johns Hopkins University Press, 1963), 3.
85. Keegan, 110; and Willmott, 64.
86. Keegan, 104. Perceived angst over the Battle of the Atlantic may have been worse than the reality according to Clay Blair, in *Hitler's U-Boat War*, vol. 2, *The Hunted, 1942-1945* (New York: Random House, 1996). See also William L. O'Neill's review of Blair in *Strategic Review* 27, no. 2 (Spring 1999): 59.
87. *The Strategic Air War against Germany*, 79. The difficulty of assessing CBO success involves anecdotal and indirect measurement. The BBSU report on morale is based largely on economic assessment, drawing the conclusion that failure to break production meant failure to break morale. This was problematic, considering the fact that the economic assessment was swayed by a distorted German war-economy report written by Dr. Rolph Wagenfuehr. The USSBS included interviews of thirty-eight hundred people who had suffered various degrees of war weariness.
88. Page, 93.
89. Tom Clancy with Chuck Horner, *Every Man a Tiger* (New York: G. P. Putnam's Sons, 1999), 469.
90. William Arkin, "Air Power Has Set 'New Standard for Warfare,'" *Air Force Times*, 12 July 1999, 12.