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"HANDMAID" OF THE ARMY?

The American Perception of German Bombardment Doctrine prior to the Battle of Britain*

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Strategy, the use of engagements for the object of war.

—Carl von Clausewitz

The objective sought—an effect on the war as a whole—determines if a target or attack is strategic. Similarly, the enemy reaction determines whether an attack has strategic results.

—Air Force Manual (AFM)1–1,
Basic Aerospace Doctrine of the United States Air Force,
(1992)

IN THE YEARS since the end of World War II, American airmen have justified their independence largely by emphasizing the mission of strategic bombardment. They argued that only the resources and flexibility inherent in an independent service could mass the requisite force to defeat an enemy without recourse to ground troops. Unfortunately, this zealous advocation of Douhet-style airpower has caused a misunderstanding among many Air Force professionals as to the true nature of aerial strategy. We have truncated the definition of strategic airpower to such a degree that to many people it now equates to strategic bombardment, whether that concept implies the mass destruction of German and Japanese cities in World War II, or the more recent surgical attacks on Iraq during the Gulf War. In either case, limiting our definition of strategic airpower to bombardment missions prevents us from fully exploiting the vast range of alternatives available in aerial combat. To take advantage of these opportunities, we must redefine strategic airpower in terms of what an air force contributes to the overall war effort. The Luftwaffe and the US Army Air Corps (USAAC) of early World War II each offer an example of an air force which accepted and appreciated this broader context.

Few airmen or historians have recognized the strategic nature of the Luftwaffe's World War II doctrine. Fewer still have allowed that contemporary USAAC officers appreciated this doctrine. Instead, most postwar historians noted the conspicuous absence of a heavy bomber fleet in the Luftwaffe's inventory and concluded that it had been equipped primarily for use in a tactical and close air support role.[1] In a similar vein, independence-minded American airmen pointed to their own successes with aerial bombardment and condemned Luftwaffe officers for their lack of vision.

In actuality, although Luftwaffe strategists appreciated the merits of aerial attacks against centers of population and production, they tempered their zeal for strategic bombing with a sophisticated understanding of their country's overall strategic situation. This insight allowed them to develop a flexible doctrine that enabled them to devise operational plans with several different and complementary aerial missions throughout the first year of World War II. Although these missions did not necessarily correspond to the prewar American concept of strategic attack, USAAC officers recognized that they did have a profoundly strategic effect on the outcome of the fighting.

When war broke out in Europe in 1939, the USAAC scrambled to collect as much information as possible regarding the tactics and technology of the belligerents. In particular, the USAAC wanted to know what missions had been assigned to the Luftwaffe, how it carried out these missions, and

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how the Third Reich executed the command and control of its air forces. This scrutiny resulted in a number of reports on the organization and doctrine of the Luftwaffe. Evaluating these estimates illuminates the nature of this doctrine during the opening stages of the war and provides a clearer understanding of the basis of American opinions of it.

One valuable piece of operational intelligence possessed by the USAAC was Luftwaffe Manual 16, *The Conduct of Aerial Warfare*. Published in 1936, this regulation provided American officers a synopsis of the interwar Luftwaffe's employment theories. Although some observers have interpreted this manual as evidence of an "overwhelming emphasis on tactical rather than strategic bombing,"[2] its authors obviously intended to highlight the flexibility of airpower.

The manual began with an unequivocal statement: "Air power carries the war right into the heart of enemy country from the moment war breaks out. It strikes at the very root of the enemy's fighting power and of the people's will to resist."[3] Still, the manual did not call for the exclusive use of strategic bombardment. Consistent with the German military's traditional emphasis on adaptation, it stated that "the nature of the enemy, the time of year, the structure of his land, the character of his people as well as one's own military capabilities"[4] should dictate the use of airpower. Their country's geographical position in the heart of Europe was historically a paramount concern to German strategic planners. Consequently, the Luftwaffe did not subscribe to the theory of strategic bombing that advocated the exclusive use of aerial bombardment against

an enemy's homeland.[5] Such a strategy would doom Germany to defeat at the hands of an enemy land army long before the air offensive had any effect.[6]

Nonetheless, the Luftwaffe continued to support strategic bombing operations, although not to the exclusion of other missions. In 1937, for example, the Luftwaffe began work on a new two-engine bomber, the Heinkel He.177, thinking that it would have the requisite operational radius to fill the gap in force structure created by the lack of long-range bombardment aircraft in the early 1940s.[7] Doctrinal disputes over the proper employment of the Junkers Ju.87 (Stuka) divided the Luftwaffe's general staff during 1938–39. Officers argued over whether the air force should use the Stuka against tactical or strategic targets. Eventually they compromised, deciding that, despite its limited range and bomb load, the dive-bomber could perform missions of either type.[8]

As the Luftwaffe's capabilities grew, Third Reich officials found in it an extremely intimidating saber that they did not hesitate to rattle in order to reinforce their diplomacy. A carefully staged plan of strategic deception created in the minds of the world a vision of the Luftwaffe as an omnipotent force capable of striking anywhere in Europe.[9] Coupled with the aggressive nature of the Third Reich's foreign policy during the 1930s, it caused considerable concern among American military officers. In an effort to evaluate the threat posed by German airpower, the USAAC began a series of annual air reports covering all aspects of the Luftwaffe's capabilities.[10]

The 1939 air report was completed before the German invasion of Poland. Based primarily on compilations of air attaché notes, this document accurately described the German air force's doctrine. The section devoted to operations began with an affirmation of the Luftwaffe's status: "The German war doctrine is predicated on the possession of an independent Air Force." The report then outlined the categories of air operations for which the Luftwaffe had prepared. Significantly, the authors chose to "us[e] the German terminology" when listing these missions. In addition to planes fitted for service as reconnaissance, dive-bombing, and pursuit, they noted that the Luftwaffe possessed aircraft for both "medium attack (fast bombers)" and "heavy attack (night bombers)."[11]

The Luftwaffe emphasized operations independent of the army, including the destruction of the enemy air force, interdiction of lines of supply and communications, and strategic bombardment.

The Air Corps needed the parenthetical clarification due to the lack of dedicated attack aircraft in its own inventory. However, this dual categorization also reflects the inherent flexibility of 1939 Luftwaffe air doctrine. Recognition of this pliability emerged throughout the remainder of the report. "The [German] Air Force is prepared and designed to provide army and navy cooperation units" in the form of ground—attack aircraft, including both the Junkers Ju.87 Stuka and two-engine bombers—specifically, the Junkers Ju.88 and the Dornier Do.17.[12] In addition, the report noted that the Luftwaffe emphasized operations independent of the army, including the destruction of the enemy air force, interdiction of lines of supply and communications, and strategic bombardment. Specific targets included "all the enemy establishments and equipment of importance to the conduct of war, especially airplane fields and aircraft on the ground . . . military supply centers, road and railway constructions, centers of traffic and communications . . . [and the] armament and aircraft industry."[13]

According to the report, the Luftwaffe anticipated using three methods of bombardment to achieve these objectives: high-altitude horizontal, low-altitude horizontal,

and dive-bombing. The report however, did recognize that "the German viewpoint holds the low altitude generally more effective than the high altitude horizontal bombing. Greater accuracy, at the expense of reduced bomb penetration, is claimed." Luftwaffe doctrine favored using dive-bombing "against concentrated or small, important objectives." Additionally, it recognized that although the Germans considered night bombardment, they agreed with the American opinion that it had at best, a limited effect. "[T]he night attack [is] being considered [by the Luftwaffe] primarily as a disrupting operation for complementary use with day attacks."[14]

The USAAC realized that the Spanish Civil War had "provided [the Luftwaffe] a practical school of training of inestimable value." Indeed, Wolfram von Richthofen—commander of the Legion Condor, sent by the Third Reich to Gen Francisco Franco's aid—quickly realized the inadequacy of the Luftwaffe's training manuals with regard to air-support missions. In March 1937, for the first time, single-seat, single-engine Heinkel He.51s were used in a ground-support role. The success of this raid, which effectively paralyzed the ground troops it targeted, caught Richthofen's attention. He soon devised a primitive system of air-ground support reminiscent of his background experience in World War I. Despite initial skepticism on the part of the Luftwaffe High Command,[15] Richthofen's operations "proved that bombers were extremely effective when used against enemy troop concentrations, strong-points, and lines of communication."[16] This experience led directly to the creation of air divisions within the *Luftflotten*. Although the air fleets remained attached to a particular land-based area of responsibility, "these changes have been designed to increase the mobility of the Air Force and reduce its ties to fixed geographical or administrative commands."[17]

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Observations in the report clearly corroborate the thesis that USAAC officers recognized the validity of most of the Luftwaffe's doctrinal concepts. For instance, a remarkable degree of congruence existed between the Luftwaffe's and the USAAC's perceptions of night bombing. The report also noted the fundamental nature of the Luftwaffe's independent status to its operations. It identified only two German weaknesses: "relatively inadequate numbers of trained personnel . . . and the questionable adequacy of necessary material stocks for wartime support of the armed forces."[18] To American air officers, neither of these weaknesses indicated anything amiss in the Luftwaffe's conception of aerial warfare.

Then, on 1 September 1939, Germany launched its attack against Poland. The Luftwaffe entered the fray with all of its dive-bombers, 70 percent of its bombers, and 50 percent of its fighters.[19] Two geographically based air fleets, *Luftflotten* 1 and 4, participated in the offensive. During the initial stages of the attack, the Luftwaffe directed most of its operations against Polish airfields. On 3 September, the emphasis shifted to the aircraft and munitions industries. Only after these two missions had been completed did the Luftwaffe turn its attention to close air support of the Wehrmacht.[20] Albert Kesselring, then commander of *Luftflotte* 1, later noted that doctrinal considerations dictated this order of operations: "According to the operation principle governing the Luftwaffe, the enemy air force and the aircraft factories in the immediate vicinity of the airfields were to be attacked."[21]

During the ground-support phase of operations, the Luftwaffe concentrated on interdicting enemy supply and communications. Other targets included masses of reserve troops and the retreating Polish forces. Few reports exist which recount *direct* support of army operations or the use of the Luftwaffe as aerial artillery. On trial at Nuremberg, Field Marshal Kesselring insisted that operations such as the bombing of Warsaw, although "severe measures," were "army action[s],"[22] conducted only at the army's request and then for tactical purposes.[23] In fact, Luftwaffe doctrine proscribed the use of terror bombing, and "very detailed instructions were published by the Oberkommando der Wehrmacht (OKW) that only these military targets should be bombed."[24]

By no means does this constraint towards the bombing of civilian populations imply that the Luftwaffe espoused any less a commitment to strategic operations. Although German aircraft did undertake missions in direct support of ground troops, the bulk of their operations was directed against the Polish air force, vital industries, and lines of support and communication. Indeed, only poor weather conditions had prevented the Germans from "launching a massive, all-out attack on the military installations and armament factories of Warsaw to break Polish resistance at the start of the campaign."[25]

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Moreover, the commanders of the *Luftflotten* attributed the campaign's success to the Luftwaffe's independence. Alexander Loehr, *Luftflotte* 4's commander, stated that "the Air Force was to operate for the first time in world history as an independent arm. Thereby it was to open up new aspects of a strategy which in its principles had remained unaltered throughout the course of history."[26] Field Marshal Kesselring seconded his comrade: "The Polish campaign was the touchstone of the potentialities of the German Air Force."[27]

The Luftwaffe's operations against Poland reflected the successful use of an airpower doctrine emphasizing the independent na-

ture of air forces, the priority of gaining air superiority, and attacks against strategic objectives. Direct support of ground forces proceeded only after, or in conjunction with, the successful accomplishment of the other missions. The unique characteristics of their Polish enemies dictated the Germans' strategy, and Luftwaffe doctrine flexed to accommodate it. The effect of this employment scheme on the outcome of the campaign betrays its strategic nature. American observers recognized and appreciated the Luftwaffe's strategy. The USAAC, and Gen Henry H. Arnold in particular, were reassured that American "tactical school theories seemed to be generally in accord with German tactics."[28]

On 10 May 1940, this aerial strategy changed subtly with the launching of the offensive against France.[29] Although the Luftwaffe's immediate goal was the same as in Poland—the defeat of the enemy's air forces—this time its aircraft would also be used from the outset in direct support of ground operations.[30] Direct support of ground forces remained a high priority throughout the western offensive. On 11 May, the enormous number of German bombers needed for attacks against columns of French ground troops prevented their employment in other missions.[31] When the Luftwaffe focused its attacks on ground units, it emphasized concentration at critical points. For example, on 20 May, ground commanders called in the Luftwaffe for a mission against enemy troops in order to enlarge the bridgehead over the Somme River.[32] Later in the campaign, the German commander requested attacks against enemy rail and communication lines between Rheims and Paris.[33] Despite the ground-support character of these missions, they had a profoundly strategic effect. Marc Bloch, a French army officer who became a partisan after the fall of France, recorded his impression following an attack by the Luftwaffe's dive-bombers on 22 May: "the effect of bombing on the nerves is far-reaching, and can break the potential of resistance over a large area. It was doubtless with that end in view that the enemy High Command sent wave after wave of bombers to attack us. The result came up only too well to their expectations."[34]

The Luftwaffe's increased number of direct-support missions, however, did not pre-empt all independent operations. In mid- May, in a show of force inspired by Herman Göring, the Luftwaffe bombed the downtown area of Rotterdam, the capital of Holland.[35] This attack contributed significantly to the surrender of the Dutch after only five days of combat.[36] At the Nuremberg trials, Field Marshal Kesselring conceded the strategic nature of the attack: "This one attack brought immediate peace to Holland."[37] Early in the afternoon of 3 June, the Luftwaffe launched another largely strategic attack—Operation Paula. Lasting for two days, it was a series of aerial strikes against the aerodromes and aircraft factories on the outskirts of Paris. The Luftwaffe anticipated that this attack might, like the one on Rotterdam, produce a worthwhile despondency among France's civilian population.[38] Overall, the Luftwaffe's operations, whether in support of the army or carried out independently, had the desired impact—on 24 June, under the combined weight of the German air and ground offensives, French resolve collapsed.[39]

During the course of the western offensive, American military attachés reported constantly to the War Department in Washington, D.C., on what was transpiring. As early as 29 May 1940, the military attaché in Paris, Capt John Sterling, dispatched his first major effort to synthesize developments in the aerial battle. The report noted that many of the Luftwaffe's missions had been in direct support of ground forces. "The German air offensive over French territory has consisted primarily of operations in close support of mechanized ground troops, use of aerial bombardment against fortifications prior to and during attack, [and] machine gunning of enemy troops prior to and during attack."[40] Nonetheless, the attaché pointed out that "independent missions have daily attacked airdromes, [and] railway

By 1939, the Luftwaffe was prepared and designed to provide army and navy cooperation units in the form of ground- attack aircraft, including two-engine bombers, such as this Junkers Ju.88.

yards and stations scattered over almost all of France."[41] Regarding specific bombardment techniques, the dispatch declined to undertake a detailed analysis. "Tactics employed by German bombers have varied considerably; bombing has been conducted from all altitudes, both horizontal and vertical [dive-bombing]."[42]

Subsequent reports took a more critical stance with regard to bombardment. Although the attachés continued to stress the effectiveness of missions supporting German ground forces, independent operations received less praise. One report noted that "Germany . . . concluded early in the war that low altitude dive bombing was most effective and comparatively few high altitude attacks have been made."[43] A subsequent dispatch proclaimed that "the Germans have been very much surprised at their low efficiency [in bombardment] and will find ways of improving as soon as the present job [of defeating France] is finished."[44] American intelligence officers understood that the Luftwaffe had engaged significant elements in ground-support operations and had increased its reliance on dive-bombers. They did not, however, believe that either of these phenomena signaled either a rejection of independent strategic operations or the Luftwaffe's subservience to the Wehrmacht. Indeed, USAAC analysts fully expected the Luftwaffe to redouble its efforts to perfect bombing techniques in light of these setbacks.

Nonetheless, the attachés acknowledged the importance of effective coordination between ground and air forces to Germany's success.[45] War Department studies reveal a further appreciation of the Luftwaffe's doctrine, especially in regards to the coordination of operations with ground forces. The

German success was attributed to unity of command by an intelligence memorandum of 12 June 1940. "The efforts of the land, sea and air forces are subordinated and directed to the task at hand. For the nation as a whole these efforts are coordinated by the German High Command and the Supreme General Staff." This, however, did not imply that the Luftwaffe was viewed as an extension of the army. The memorandum noted that only observation and reconnaissance aircraft were assigned to ground forces. "In general, pursuit aviation is not allotted to army units. . . . There is no known instance of the assignment of bombardment aviation to army units." Even in direct ground support, the Luftwaffe insisted on centralized control to maximize flexibility. "Bombardment units are controlled by the supreme commander of the particular operation, and . . . they may often be transferred from one operation to another by the German High Command."[46]

A month later, on 2 July 1940, just one week after the fall of France, a memorandum to General Arnold noted that despite the high degree of coordination between the German armed forces, all three services were "free to develop their peculiar powers and no one of the armed forces is subordinated to the needs of another." The Luftwaffe's effectiveness stemmed not only from its autonomous status under OKW, but also from "mandatory lateral coordination." The report quickly added that OKW enforced this mandatory coordination "through the normal chain of command of each of the armed forces, rather than by attaching subordinate units of one of the armed forces to a subordinate unit of another."[47]

The Luftwaffe's doctrine also received attention from the War Department. An intelligence section memorandum of 6 July 1940 observed that initially the majority of Luftwaffe units were assigned to the destruction of the French air force. "When this objective was accomplished, and when the hostile rear area was sufficiently disrupted, then close support came into the picture." Thus, even the War Department found that the Luftwaffe's priorities remained air superiority, interdiction, and close air support.[48]

The Luftwaffe accomplished its basic mission of "eliminat[ing] effective hostile air power from the decisive area . . . by attacking factories and airdromes, by air combat and by antiaircraft fire." Once this task was finished, it then directed the "main weight of [the] attack . . . against objectives in the rear of the front line troops." The main goals of this phase of operations were "to paralyze Allied communications" and interdict lines of supply. In the final phase of air operations—close air support—"Germany had remarkable teamwork between its air force units and its fast moving land units."[49]

American officers understood that this "teamwork" did not come at the expense of Luftwaffe independence. "Except for observation the Germans employed their air force as a Theatre of Operations weapon. . . . The air force was employed in mass." While noting that "the German conception of air power is to retain a maximum of flexibility of employment," the report cautioned that "the Germans obtained timely close support of their armored units without attaching bombardment or pursuit to these ground forces."[50]

The War Department's intelligence reports during and immediately after the Battle of France clearly presented an accurate assessment of the Luftwaffe's doctrine. A 1940 revision of Luftwaffe Manual 16 reiterated the doctrine developed during the interwar years and employed since September 1939. The section of the manual devoted to operations began with a passage on the importance of gaining air superiority: "The enemy air force will be combated from the beginning of the war." To accomplish this, the manual advised attacks against an enemy's air force in the air, at the aerodromes, and at the production and supply facilities.[51] The manual stressed flexibility when discussing ground-support operations: "Depending on the situation, the time, the type of target, manner of operation, terrain, and our own strength, the manner and extent of cooperation with the army will be deter-

mined. There is no modeled pattern."[52] The vital importance of interdiction was also recognized: "Attacks carried out in the rear echelon of the zone of operations will hamper the supply of the battle zone and lead to considerable difficulties in prompt supply of units, particularly in critical situations."[53]

However, the revised manual devoted more space to strategic bombardment than to any other mission. There were separate sections describing the rationale and methods for attacking production, food, imports, the power grid, and government centers.[54] It also devoted a section to the reasons and methods for attacks against civilian population centers. Under normal conditions, such operations would not be allowed. "Attacks upon cities for [the] purpose of terrorizing the population will not be carried out." However, if the enemy attacked civilian populations first, then "'retaliation attacks' can be the sole means of dissuading the enemy from such acts of brutal aerial warfare." The manual cautioned that random missions against population centers could backfire: "At wrong moments, and at false estimations of desired effect on the enemy, a stiffening will of resistance—instead of shock—may be the consequence."[55]

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The Luftwaffe of 1940 was dedicated to the concept of independent operations. This took several forms, from gaining air superiority, through the centralized control of ground-support aircraft, to interdiction and strategic bombing operations (which could—under certain conditions—include missions against the enemy population). Resource scarcity partially explains the apparent lack of emphasis on the bombardment aspects of this doctrine. In his examination of the reasons for the Luftwaffe's defeat, Williamson Murray argued that "pre-war period Germany was never in a position to build a 'strategic' bombing force."[56] In addition, Murray asserts that a geographic vulnerability contributed to Germany's concentration on territorial advances: "It would pay the Reich little benefit to launch 'strategic' bombing attacks against Paris, Warsaw or Prague at the same time that enemy ground forces seized the Rhineland or Silesia."[57]

Despite the Luftwaffe's lack of a dedicated strategic bombardment aircraft, attempts to belittle the strategic dimensions of Luftwaffe doctrine must inevitably founder. The claim that "the [German] bomber force had been used [during the western offensive] solely as a tactical air arm, with a single exception of four days' strategic employment in France"[58] displays a misunderstanding of the distinctions between categories of air operations. More tenable is the position that "the Luftwaffe's support of the ground forces during campaigns was on such a scale that it cannot be described as 'tactical.'"[59] Additionally, operational flexibility, so crucial to the stunning success of the Luftwaffe through June 1940, existed largely because of the air arm's independent status.

War Department queries into Luftwaffe doctrine during the first 10 months of World War II resulted in a surprisingly accurate assessment of the German air force's operations, organization, and degree of autonomy. American air officers understood that the Luftwaffe valued strategic bombardment— but not to the exclusion of other missions, such as centrally controlled ground support and deep interdiction. Indeed, the record reveals that the USAAC tacitly understood that the flexible nature of German doctrine afforded the Luftwaffe a greater strategic impact than massive bombardment alone.[60]

During the latter half of 1940, this perception changed radically as the Luftwaffe's deficiencies became more obvious. The first demonstration of fallibility occurred over Dunkirk in June 1940. Although Göring as-

sured Hitler that the Luftwaffe could turn the British evacuation effort into another Warsaw or Rotterdam, the Royal Air Force inflicted such heavy losses that the Luftwaffe ceased operations against Dunkirk by 2 June.[61]

That autumn, the Luftwaffe's shortcomings became even more apparent. On 13 August, the Luftwaffe launched an offensive against the British Isles in preparation for an amphibious invasion by the Wehrmacht. Hitler issued his Operational Directive #17 prior to the commencement of these operations: "The German Air Force must with all means in their power and as quickly as possible destroy the English air force. The attacks must in the first instance be directed against flying formations, their ground organisations, and their supply organisations, and in the second against aircraft production industry and the industries engaged in production of anti-aircraft equipment."[62]

Despite the fact that the Führer had defined the Luftwaffe's mission in precisely the same terms as the earlier Continental offensives, Germany failed in its attempts to subdue Britain. The lack of long-range bombardment aircraft generated a feeling among Allied military leaders that the Luftwaffe did not appreciate the importance of independent and strategic operations.[63] From that stance, it was not too great a step to the postwar conclusion that the Luftwaffe "was in effect the hand-maid of the German Army."[64]

The sagacious and sophisticated view of air strategy held by many German airmen—and appreciated by their American counterparts prior to the Battle of Britain—speaks to the situation in which the US Air Force finds itself today. As the changing world situation continues to de-emphasize the classic mission of strategic bombardment, the Air Force must recognize the truly strategic importance of other missions. Other missions such as deep interdiction, close air support, and military airlift also meet the test of Carl von Clausewitz's definition of strategy: to have an effect on "the object of war."[65] Not only massive aerial bombardment but any mission which has "an effect on the war as a whole" qualifies as a strategic effort.[66] The American airmen observing the Luftwaffe's operations in 1939 and 1940 clearly understood the nuances of airpower doctrine—and we would do well to reflect on their example. □

Notes

1. More recent scholarship, however, recognizes that during the interwar years, some people in the Luftwaffe had a significant appreciation of strategic bombardment. The oft-cited example of the ground-support interpretation of the World War II Luftwaffe is that of Denis Richards in *Royal Air Force, 1939–1945*, vol. 1 (London: Her Majesty's Stationery Office, 1953). Recent works that continue this tradition include James S. Corum, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform* (Lawrence, Kans.: University Press of Kansas, 1992); and Matthew Cooper, *The German Air Force, 1933–1945* (London: Jane's, 1981). For the arguments of people who contend that the World War II Luftwaffe did have strategic doctrine and designs, see Edward L. Homze, *Arming the Luftwaffe: The Reich Air Ministry and the German Aircraft Industry, 1919–1939* (Lincoln, Nebr.: University of Nebraska Press, 1976); and Williamson Murray, *Luftwaffe* (Baltimore, Md.: The Nautical and Aviation Publishing Company of America, 1985). An excellent and more comprehensive guide to the scholarship on both sides of the argument is the annotated bibliography of Murray's "The *Luftwaffe* Experience," in B. Franklin Cooling, ed., *Close Air Support* (Washington, D.C.: Office of Air Force History, 1990).

2. Homze, 131–32. See also Corum, 168.

3. Williamson Murray, "The Luftwaffe before the Second World War: A Mission, a Strategy?" *Journal of Strategic Studies* 4 (September 1981): 264.

4. Ibid.

5. Horst Boog, "Higher Command and Leadership in the German Luftwaffe," in Alfred F. Hurley and Robert C. Ehrhart, eds., *Air Power and Warfare: Proceedings of the 8th Military History Symposium* (Washington, D.C.: Office of Air Force History and United States Air Force Academy, 1979), 135.

6. Murray, *Luftwaffe*, 1.

7. Murray, 10.

8. W. H. Tantum IV and E. J. Hoffschmidt, *The Rise and Fall of the German Air Force, 1933–1945* (Old Greenwich, Conn.: WE Inc., 1969), 43.

9. "The German Propaganda Ministry had been busily and successfully sowing a belief in the world that the German Air Force was so mighty as to be capable of crushing any country it pleased by massed bombing." Michael Mihalka, *German Strategic Deception in the 1930s* Rand Note N-1557-NA (Santa Monica, Calif.: RAND, July 1980), 19, 100.

10. The Luftwaffe was not the only air force subject to these reports. The USAAC completed annual studies on the French and Royal air forces as well. See Air Force Historical Research

Agency (hereinafter AFHRA), Maxwell AFB, Ala., file no. 248.501-53.

11. "GERMANY: Annual Air Report," AFHRA file no. 170.2278-4F. Although the report is undated, internal evidence indicates clearly that the USAAC completed it prior to the wartime engagement of the Luftwaffe.

12. Ibid.

13. Ibid.

14. Ibid.

15. Tantum and Hoffschmidt, 13–14.

16. Cooper, 59–60. He argues that this merely confirmed German doctrine from before the war, but the evidence suggests otherwise.

17. "GERMANY: Annual Air Report."

18. Ibid.

19. Maj Robert M. Kennedy, *The German Campaign in Poland (1939)* (Washington, D.C.: Department of the Army, April 1956), 69.

20. Tantum and Hoffschmidt, 54. See also Kennedy, 69–70.

21. Allied Control Authority for Germany, *Trial of the Major War Criminals before the International Military Tribunal*, vol. 9 (Nuremberg, 1947–1949), 175.

22. Ibid. See also John Killen, *A History of the Luftwaffe* (Garden City, N.Y.: Doubleday, 1968), 194.

23. *Trial of the Major War Criminals*, vol. 9, 214.

24. Ibid., 218. Of course, one must take into account the fact that Kesselring made these statements at Nuremberg, on trial for crimes against humanity. Still, one finds little reason to doubt his sincerity.

25. Murray, "The Luftwaffe before the Second World War," 266.

26. Tantum and Hoffschmidt, 57.

27. Ibid.

28. Henry H. Arnold, *Global Mission* (New York: Harper and Brothers, 1949), 199.

29. Charles Christienne and Pierre Lissarague, *A History of French Military Aviation*, trans. Francis Kianka (Washington, D.C.: Smithsonian Institution Press, 1986), 345.

30. Murray, "The *Luftwaffe* Experience," 87.

31. Christienne and Lissarague, 346.

32. Tantum and Hoffschmidt, 70.

33. Ibid.

34. Marc Bloch, *Strange Defeat*, trans. Gerard Hopkins (New York: Octagon Books, Inc., 1968), 54–55.

35. Killen, 115.

36. Tantum and Hoffschmidt, 69.

37. *Trial of the Major War Criminals*, vol. 9, 213.

38. Killen, 123; and Christienne and Lissarague, 353.

39. Christienne and Lissarague, 360.

40. Capt John M. Sterling, military attaché, Paris, memorandum to G-2, subject: Major Air Operations (Theory of Combat Exemplified by Air Operations), 29 May 1940, AFHRA file no. 248.501-56, 1938–40.

41. Ibid.

42. Ibid.

43. Lt Col Grandison Gardner, military attaché, Paris, memorandum to G-2, subject: Major Air Operations (Detailed Reports on Bombing Raids), c. 29 May and 6 June 1940; and ibid.

44. Ibid.

45. Col H. H. Fuller, military attaché, Paris, memorandum to G-2, subject: Tactical Doctrines: German Tactics during the Early Weeks of the War, 6 June 1940, AFHRA file no. 248.501-56, 1938–40.

46. G-2 memorandum to G-3, subject: Unity of Command in the German Armed Forces, 12 June 1940, AFHRA file no. 142.042-1.

47. Col R. C. Candee, chief of the Information Division, memorandum to chief of the Air Corps, General Arnold, subject: Unity of Command as Exercised by the Belligerents in the Present European War, 2 July 1940, AFHRA file no. 142.042-1.

48. Brig Gen Sherman Miles, G-2, memorandum to assistant chief of staff, War Planning Division, subject: Foreign Air Doctrines, 6 July 1940, AFHRA file no. 142.042-2.

49. Ibid.

50. Ibid.

51. *L. Dv. 16: The Conduct of Aerial Warfare* (L.F.) (Berlin: Ernst Siegfried Mittler and Son Publishing House, March 1940), 27, AFHRA file no. 248.501-57N. This is a translation of the manual, prepared for the USAAC during World War II.

52. Ibid., 33.

53. Ibid., 42.

54. Ibid., 38–49.

55. Ibid., 48.

56. Murray, "The Luftwaffe before the Second World War," 262.

57. Ibid., 268. See also Cooper, 36–37; and Boog, 135.

58. Tantum and Hoffschmidt, 73.

59. Cooper, 43. See also Edward L. Homze, "The Continental Experience," in Hurley and Ehrhart, 47.

60. Indeed, later in the war, American tactical operations would mirror the Luftwaffe's early campaigns. For a summary of American close air support operations in 1944, see W. A. Jacobs, "The Battle for France," in Cooling, 237–93.

61. Killen, 120–22.

62. Ibid., 129.

63. G-2 Report, subject.: Semi-Annual Air Report, 1939–1940, AFHRA file no. 170.2278-4E.

64. Richards, 19.

65. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1984), 128.

66. AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, vol. 2, March 1992, 152.