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UNITED STATES AIR POWER DOCTRINE:
A STUDY OF THE INFLUENCE OF WILLIAM MIT-
CHELL AND GIULIO DOUHET AT THE AIR
CORPS TACTICAL SCHOOL, 1921-1935.

The University of Oklahoma, Ph.D., 1965
History, modern

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THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

UNITED STATES AIR POWER DOCTRINE: A STUDY OF THE INFLUENCE
OF WILLIAM MITCHELL AND GIULIO **DOUHET** AT THE AIR CORPS
TACTICAL SCHOOL, 1921-1935

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
DOCTOR OF PHILOSOPHY

BY
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Norman, Oklahoma

1965

UNITED STATES AIR POWER DOCTRINE: A STUDY OF THE INFLUENCE
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TACTICAL SCHOOL, 1921-1935

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ACKNOWLEDGMENTS

In the course of this study the author incurred substantial obligations to several persons for various kinds and degrees of help. His major professor, Dr. Alfred B. Sears, lent invaluable editorial assistance and steady support during the entire undertaking. Timely encouragement was given by Dr. Percy W. Buchanan and Dr. John W. Morris, also of the University of Oklahoma, and by Brother Raymond Fleck, C.S.C., President of St. Edward's University, Austin, Texas. Mr. Robert Krauskopf of the Office of Records Appraisal in the National Archives provided not only unusual archival assistance but initiated the specific and timely suggestion to pursue this particular investigation in February 1963, at which time several prospective avenues of air power research appeared to be blocked. Miss Marguerite Kennedy, in charge of the Air Force Archives at Maxwell AFB, Alabama, and Mr. Frank Meyer, professional archivist, rendered wholehearted cooperation and valuable technical assistance. At the National Archives Mr. John Taylor, head of the Army and Air Force branch, assisted materially in searches for various documents. At the Air University Library Mrs. Louise Pitts kindly aided on numerous occasions in locating and obtaining needed books and other materials. Mr. Ellis Olmstead of Sherman, Texas generously made available ideal working facilities in Austin, Texas during most of the critical writing year, 1964-65. Most important of all, however, have been the encouragement, patience, and understanding of the author's wife, Norma V. Flugel, for without her help this task could never have been undertaken, much less executed.

Norman, Oklahoma
July, 1965

R.R.F.

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PART I

INTRODUCTION AND HISTORICAL SETTING,

1903-1920

CHAPTER I

INTRODUCTION

There is much historical evidence to show that the problem of integrating a given weapon within the structure of the military establishment is by no means a recent one.¹ Entirely aside from the question of introducing a new weapon, there exists the problem of adequately exploiting it. Much of the difficulty encountered in properly employing an unconventional weapon--once it has been accepted--seems to be rooted in man's innate tendency to retain the familiar in preference to the novel. As Admiral Alfred Thayer Mahan, the great theorist of sea power, pointed out:

Changes of tactics have not only taken place after changes in weapons, which necessarily is the case, but the interval between such changes has been unduly long. This doubtless arises from the fact that an improvement of weapons is due to the energy of one or two men, while changes in tactics have to overcome the inertia of a conservative class; but it is a great evil. It can be remedied only by . . . careful study of the powers and limitations of the new . . . weapon, and by a consequent adaptation of the method of using it to qualities it possesses, which will constitute its tactics. History shows that it is vain to hope that military men generally will take the pains to do this, but that the one who does will go into battle with a great

¹Air Force ROTC, Evolution of Aerial Warfare (Maxwell AFB, Ala.: Air University, 1959), 1-11, contains a concise historical account.

advantage--a lesson in itself of no mean value.²

With the advent of the Industrial Revolution this age-old dichotomy between the availability of a weapon and its full utilization appeared with increasing frequency. In the Civil War "the North fought with the same weapons available to the South and made slight use of the superior arms within its grasp."³ The failure of the military in World War I to properly understand the potential of newly introduced weapons such as the machine gun, the submarine, the tank, and, most of all, the air weapon was repeatedly scored during the 1920's by the Italian air theorist, General Giulio Douhet. He shrewdly observed that "victory smiles upon those who anticipate the changes in the character of war, not upon those who wait to adapt themselves after the changes occur."⁴ General J. F. C. Fuller, after analyzing instances typifying the characteristic resistance of the military to new weapons, commented in 1926 that "soldiers are mostly alchemists," and concluded that the underlying cause was a lack of systematic, objective method in observing, studying, and evaluating the changes wrought by the technology of war.⁵

²Quoted in Air Service Tactical School (ASTS), Air Tactics (Langley Field, Va.: 1922), Section II, 19.

³Irving B. Holley, Jr., Ideas and Weapons (New Haven: Yale, 1953), 10.

⁴Giulio Douhet, The Command of the Air (Rome: Air Ministry, 1921), trans. Dino Ferrari (New York: Coward-McCann, 1942), 30.

⁵J. F. C. Fuller, The Foundations of the Science of War (London: Hutchinson, 1926), 22.

Almost two decades later, Brigadier General Frank P. Lahm, one of America's pioneer military airmen, agreed that "conservatism has always been the watchword in our recognition and adoption of new implements of war, especially in times of peace."⁶ Recently an American student of this problem concluded that it is "still far from being entirely solved."⁷

This study is chiefly concerned with the development of doctrine for the employment of the aerial weapon. Here several basic factors are to be noted. First, the air weapon is a multi-use one, susceptible to development for several tactical functions. Secondly, the question of which function to emphasize is related, among other factors, directly to the geographical and military position which a given country occupies ~~vis-a-vis~~ others. Thirdly, in any systematic utilization of the aerial weapon itself, three major phases may be discerned, each of which is related to the other: (1) the technological development; (2) the organizational problem involved in the proper constitution of the parts of the air force and their relationship with each other and the other armed forces; and (3) the question of doctrine or conceptual utilization and employment of the force in a strategic and/or tactical sense. Though all these factors are interrelated, the major treatment here is confined to certain aspects of the evolution of military air power doctrine in the

⁶Charles De F. Chandler and Frank P. Lahm, How Our Army Grew Wings (New York: Ronald Press, 1943), 279.

⁷Holley, 10.

United States from 1920 to 1935. Objectives include (1) identifying the predominant concepts of employment; (2) determining how and from what sources those concepts were derived; and (3) ascertaining how and when they were adopted or adapted and applied. Within this general frame of reference attention is focused on the personalities, ideas, and theories of William Mitchell and Giulio Douhet--the two most important air pioneers of the period--and their influence on American air power doctrine, particularly as it evolved at the Air Corps Tactical School,⁸ the tap root of doctrinal growth in the United States Army's air arm during the twenties and early thirties. Their much debated interpersonal influence is likewise critically examined.⁹

Before undertaking any investigation of inter-war doctrinal development, however, it is deemed advisable to obtain some degree of perspective by viewing the problem in its historical context. The general treatment in this chapter is to sketch,

⁸The Field Officers School (1920) became the Air Service Tactical School in 1923, and in turn the Air Corps Tactical School in 1926. It was moved from Langley Field, Va. to Maxwell Field, Ala. in 1931.

⁹The study of air doctrine during the inter-war period is somewhat complicated by the fact that in practice formulation of doctrine occurred at several levels. Official War Department doctrine was expressed in the Field Service Regulations which were supposed to set the tone for the rest of the service. Then there were the Air Service Regulations, which, though prepared by the Chief of Air Service, were closely aligned with the thinking of the General Staff of the War Department. The teachings propounded by the ground and air service command and staff schools were supposedly in conformity with departmental dogma. See glossary for definitions of doctrine and concept.

briefly, the development of the air weapon and its employment in this country to the time of the involvement of the United States in World War I; to trace contemporaneous developments in Europe; and to show the origins of American doctrine and the extent of American experience during the World War.

Early History of the Air Weapon and Air Doctrine

The United States

While many fundamental scientific and technological achievements necessarily preceded the actual invention of the air machine, including the high speed internal combustion engine, the achievement of the Wright brothers on December 17, 1903, was monumental: sustained, controlled power flight became a reality at Kitty Hawk, North Carolina. In October 1905 Wilbur and Orville Wright made the first flight of substantial duration in a heavier-than-air vehicle--a record run of nearly twenty-five miles in a little over half an hour.¹⁰ In February 1908 the Wrights undertook, in a contract signed with the United States Signal Corps, to meet severe specifications for those days--an airplane with a speed of 40 miles per hour, 125-mile range, and a useful load of 350 pounds.¹¹ Two others who were awarded contracts failed.¹² Later that year the test of the

¹⁰Dept. of the Air Force, AFP 210-1-1: Historical Data--a Chronology of American Aviation Events (Washington: 1955), 54, 57. Hereafter cited as AFP 210-1-1.

¹¹Holley, 27.

¹²AFP-210-1-1, p. 59.

"Wright Flyer" proved successful at Fort Meyer, Virginia, and the United States Army had a new weapon.¹³

For some years thereafter progress was made at a snail's pace. By 1913 the Signal Corps had 15 aircraft on hand and seven on order.¹⁴ To man them, 19 trained pilots were available.¹⁵ Promising advances were made before 1914 by the aeronautical division of the Signal Corps in (1) airplane radio-telegraph testing; (2) flight testing of aircraft machine guns against ground targets; (3) development of a rudimentary bombsight; (4) experimentation with bomb dropping on a limited scale; and (5) artillery adjustment by aerial control.¹⁶ By the outbreak of war in Europe the airplane in the United States had already indicated its value for various military purposes, although the Chief Signal Officer, who was mainly responsible for the development of the aerial weapon at that time, was strongly inclined to value only its reconnaissance and artillery adjustment functions. Doubting very much the utility of the air weapon for offensive purposes, he told the House Military Affairs Committee in December 1914 that "as a fighting machine the airplane has not . . . justified its existence."¹⁷

¹³Chandler and Lahm, 152-53.

¹⁴Ibid., 267.

¹⁵Ibid.

¹⁶AFP 210-1-1, pp. 61-69.

¹⁷Quoted in Holley, 26.

Nor was it at all easy to learn at second hand lessons of value from the combat experience of the belligerent powers in Europe. Such lessons proved difficult to obtain, both because of the screen of secrecy with which they cloaked the performance of their aircraft and the Wilson administration's deliberate policy of strict neutrality. From August 1914 to April 1917 United States relations with the governments of the Allies were limited almost exclusively to diplomatic channels. War Department efforts to establish direct liaison at the front through assignment of qualified observers were repeatedly rebuffed until the spring of 1917. Conjoined with administrative neglect to pursue vigorous development of possible combat uses of aircraft, this situation resulted in our technical isolation, despite increased appropriations for aeronautics during this period of ostensible "preparedness."¹⁸

Accordingly, the American declaration of war in April 1917 found the air arm in critical condition. Not only was the Aviation Section of the Signal Corps seemingly inadequate to cope with the task of developing the air weapon but there existed "only the haziest notions regarding the doctrines of aerial warfare."¹⁹ An Air Force study of the early history of the air arm concludes that one thing was certain: "At the outbreak of war little or nothing was on hand either of planes, fields, instructors, curricula, or--most important of all--

¹⁸Ibid., 37.

¹⁹Ibid.

experience that would indicate what was needed. . . . Consequently, the first men charged with the training program had to learn by the trial-and-error method before teaching others."²⁰ According to Colonel H. H. Arnold, who was second in command of the Aviation Section of the Signal Corps during 1917-18, the Air Service in May 1917 consisted of but 55 officers and 1100 enlisted men, including 26 actually qualified pilots, manning 55 airplanes of which 51 were obsolete and four obsolescent.²¹ In comparison with European air forces, the Army's Air Service was "a negligible quantity."²²

Early Development of Aviation in Europe

A glance at the following tables shows the relative pre-war position of the United States and other countries with respect to funds appropriated for aviation purposes, number of aircraft available, and number of pilots:

²⁰USAF Historical Studies, No. 98: The United States Air Arm, 1867-1917 (Maxwell AFB, Ala.: 1958), 197.

²¹Henry H. Arnold, Global Mission (New York: Harper, 1940), 50; Benedict Crowell, America's Munitions: 1917-1918 (Washington, 1919), 240, avers that there were 200-odd airplanes on hand, mostly trainers.

²²Mason M. Patrick, The United States in the Air (Garden City: Doubleday, 1928), 49. General Patrick was Chief of Air Service during much of the war period and later served in the same capacity from Oct. 1921 to Dec. 1927.

Comparative Aeronautical Appropriations, 1913 Fiscal Year²³

France	\$7,400,000
Germany	5,000,000
Russia	5,000,000
England	3,000,000
Italy	2,100,000
Mexico	400,000
United States	125,000*

*1908-1913 total expenditure of War Department for aircraft:
\$250,000

Aircraft and Pilots in Leading Countries, August, 1914²⁴

<u>Country</u>	<u>Number of Airplanes</u>	<u>Number of Pilots</u>
France	611	620
Germany	428	300
United Kingdom	168	135
Italy	153	175
Russia	200 (est.)	80
Japan	23	20
United States	17	19

As these data indicate, the French government was quickest to recognize and turn to national advantage the military potential of the airplane.²⁵ It was Henri Farman who took up the first passengers in an airplane and Louis Bleriot who first flew over the age-old barrier of the English Channel. As early as 1911

²³Holley, 29, citing Report of Secretary of War, Annual Report of the War Department, 1913, I, pp. 25-26.

²⁴Adapted from Major G. R. Perara, A Legislative History of Aviation in the United States and Abroad (Washington: Office of the Chief of Air Corps, 1940), 1, citing Report of Hearings on H. R. 5304, 63rd Congress, p. 7.

²⁵New Cambridge Modern History (Cambridge: Cambridge University Press, 1960), XII, 277.

France boasted possession of the first true aircraft factory. During those early prewar years the International Flying Meets at Rheims stirred world-wide enthusiasm, encouraged widespread participation, and promoted pioneering efforts in the air.²⁶ In the Michelin competitions for bomb-throwing held in France in 1912 Riley E. Scott, a former officer of the United States Coast Artillery, who had invented a bomb-sight in 1911 and experimented with aerial bombing as a civilian at the College Park, Maryland, air station in 1912, won a first prize, hitting his targets from an altitude of 2,600 feet.²⁷ As early as 1910 and 1911 France was using airplanes effectively for observation purposes during annual army maneuvers.²⁸ Elsewhere governments hastened to set up similar aviation sections in their armed forces. In the aircraft engineering field, construction and performance improved remarkably during the prewar years. "The fuselage was enclosed, landing wheels were added, and more efficient power units were installed."²⁹ Direct military application, however, was relatively slight prior to 1914.

During the Tripoli campaign of 1911 the Italians employed "quite a large number of machines" to advantage in reconnaissance

²⁶Air Force ROTC, Foundations of Air Power (Maxwell AFB, Ala.: Air University, 1958), 133-134; AFP 210-1-1, p. 61.

²⁷Chandler and Lahm, 206-207, 276-277; AFP 210-1-1, p. 66.

²⁸Claude Grahame-White and Harry Harper, The Aeroplane in War (London: Laurie, 1912), 228-235.

²⁹Air Force ROTC, Foundations of Air Power, 134.

work and dropped a few bombs with inconclusive results.³⁰ Spain also used the airplane in the course of her Moroccan campaign during 1913, bombing a few towns on the Haira River in tactical cooperation with ground forces in the area.³¹ Meanwhile, in the Balkan Wars Bulgarian and Greek forces carried out occasional bombing sorties.³² Thus by 1914 "the groundwork had been laid . . . for the airplane's eventual use as an offensive weapon," although military commanders remained generally skeptical of employing it in this capacity.³³

Wartime Growth of Military Aviation

The common aeronautical problem confronting the leaders of all the major belligerents from the beginning to the end of the World War was how to develop and apply the air weapon in their hands to the maximum national advantage. The problem embraced not only weapons technology and organization of forces but concepts or doctrines of employing them. Only the merest sketch of these aspects is here presented, and treatment is confined to the British and German air forces, for between them they covered the entire spectrum of capabilities demonstrated by the air weapon during World War I.

³⁰Grahame-White and Harper, 236-239.

³¹Lieut. Kenneth N. Walker, Lecture, "Doctrine of Employing an Aerial Force," ACTS, Langley Field, Va., Oct. 23, 1929, 3.

³²Isaac D. Levine, Mitchell--Pioneer of Air Power (New York: Duell, Sloan and Pearce, rev. ed., 1958), 82-83.

³³Walker, 3.

From the very beginning events bore out the prewar promise of the airplane's value as an ideal instrument for reconnaissance. For example, observers of the British Royal Flying Corps (RFC) were the first to report the wheeling movement of von Kluck's First Army to the southeast of Paris in August 1914.³⁴ In East Prussia the battle of Tannenberg was based in part on foreknowledge gained from air observer reports that the Russian Second Army was virtually isolated in the Masurian Lakes region.³⁵ Through such feats as these, the air arm "almost entirely replaced cavalry as a medium for distant reconnaissance."³⁶

Moreover, as the conflict in the West degenerated into trench warfare, the contending armies further discovered that the airplane provided the best means of close reconnaissance of enemy trench systems. Photographic rather than visual observation became the rule. They also used flying craft as a major means of spotting and adjusting ground artillery fire, first by means of light signals, later through the use of air-to-ground wireless or radio.³⁷ Through the performance of such functions--in addition to special transportation and fast liaison, the airplane quickly became indispensable to the effective operation of

³⁴"The Era of Violence, 1898-1945," New Cambridge Modern History (Cambridge: Cambridge University Press, 1960), XII, 278.

³⁵Gen. Ernst W. von Hoeppner, Deutschlands Krieg in der Luft (Leipzig: Koehler, 1921), 15.

³⁶Ibid., 16.

³⁷Ibid., 18, 20.

the ground forces. Hence, in a war characterized by almost static surface positions, by far the larger part of the military aviation effort on both sides was devoted to reconnaissance, trench photography, artillery adjustment, and protection of those functions. Ready execution of services for the ground forces hinged upon at least partial control of the air, that is, the provision of security from enemy air interference at a given place and/or for a certain length of time. Control of the air therefore became the prerequisite to effective use of the various branches of the air service working with the armies.³⁸ From almost the start of the conflict the rival air forces endeavored to stop hostile aerial prying and surveillance while assiduously seeking to carry out identical tasks for their own armies. As a result fighting in the air started in 1914. It rose steadily in pitch and volume as aviators intensified their efforts. Machine guns soon replaced rifles strapped to struts in Allied air forces in October 1914 and in the German in early 1915.³⁹

Tactical Employment: Pursuit

As early as 1913 and 1914 the Royal Flying Corps had recognized that "it was not by shooting from the ground but only by fighting aircraft with aircraft that decisive results

³⁸Evolution of Aerial Warfare, 19.

³⁹New Cambridge Modern History, XII, 278; Hoepfner, 23.

could be obtained."⁴⁰ Yet, it was the Germans who, despite their initial disadvantage in air armament, were first in the field with an effective specialized fighter plane, the Fokker, which permitted the pilot to shoot through the propeller.⁴¹ With machine guns affixed to the plane itself, there was no longer need of an observer. The resultant gain in speed, maneuverability, and ceiling was extraordinary and effected a revolution in tactics. The consequences which followed the Fokker's appearance in the fall of 1915 were aptly described by the eminent British military historian, H. A. Jones:

An order issued from Flying Corps Headquarters on the 14th of January 1916 . . . brought about, at a stroke, one of the drastic changes in the air war--formation flying, and crystalized the effects of the whole Fokker dominance. The order reads:

Until the Royal Flying Corps are in possession of a machine as good as or better than the German Fokker it seems that a change in tactics employed becomes necessary. . . . It must be laid down as a hard and fast rule that a machine proceeding on reconnaissance must be escorted by at least three other fighting machines. These machines must fly in a close formation.⁴²

⁴⁰Quoted in Air Marshal Sir Robert Brooke-Popham, "Development of RAF Doctrine," Royal Air Force Quarterly II, (April, 1950), p. 111, citing Royal Flying Corps, Training Manual, Part II, Proof # 7, March 1914, pp. 46, 49.

⁴¹Ibid.; Hoeppner, 39.

⁴²H. A. Jones, The War in the Air, Based on Official Documents, by Direction of the Historical Section of the Committee of Imperial Defence (5 Vols. II-VI; Oxford: Clarendon Press, 1928-37), II, 155-56. Vol. I was written by Sir Walter Raleigh, The War in the Air (Oxford: Clarendon Press, 1922), and the task taken over by Jones upon Raleigh's death.

This doctrinal decision by Royal Flying Corps Headquarters followed Anglo-French air staff conversations in the autumn of 1915 regarding means of shielding their air reconnaissance and artillery flyers from the Fokker. The commanding officers of the British and French air forces, Major General Trenchard and Commandant Du Peuty, respectively, after comparing the experiences of the two air services concluded finally "that the corps observation aeroplanes could best be protected by . . . offensive [means], that is, by fighting and subduing the enemy airmen far away from the aeroplanes flying in direct co-operation with the Army."⁴³

Such offensive employment of air forces contrasted sharply with the "barrage" system which had been widely used up to that time. The barrage system entailed the "stationing" of a number of aircraft over a given geographical area in order to drive away, defeat, or deter enemy airmen seeking to dominate it and thus permit friendly reconnaissance, photographic, and artillery adjustment craft to operate under their protective umbrella. Because its success depended largely upon waiting for the enemy to appear in a given area, it was extremely costly in terms of airplanes and pilots required to patrol and clear large stretches of the front.⁴⁴ The new concept called for pursuit forces to protect a given sector of operation by means of active forays into and attacks over the enemy's territory, thus engaging and pinning

⁴³Ibid., II, 165.

⁴⁴Brooke-Popham, 112.

down his air forces in defensive battle.

One of the consequences of this step in the evolution of doctrine was the further specialization and reorganization of Allied aviation. Between April and August 1916 General Trenchard transferred all observation craft to aviation units serving directly with the ground forces. "By the middle of August . . . no Corps squadron had fighters on its strength and the principle of differentiating between offensive fighting and Corps [observation] work was definitely established."⁴⁵ Thus as early as 1915-16 the Royal Flying Corps clearly recognized certain fundamental doctrinal tenets and tactical practices of aerial warfare, viz., that adherence to the offensive afforded the best defense in the air and that tactical realization of this concept required both the organization of specialized fighter squadrons and the adoption of new tactical techniques, notably formation flying.

The new doctrine was tested on the Somme in June. The effectiveness both of British fighter sweeps over the front lines and bombing attacks in rear areas during the early summer of 1916 was affirmed by General von Buelow of the German First Army engaged in the battle of the Somme.⁴⁶ Partially as a result of growing enemy counter-action, Trenchard felt compelled on September 22, 1916 to issue an important paper entitled "Future Policy

⁴⁵Jones, II, 167-168.

⁴⁶Quoted in ibid., II, 270-271; see also Maj. George P. Neumann, The German Air Force in the Great War, trans. J. E. Gurdon (London: Hodder & Stoughton, 1921), 219-220; Hoepfner, 72-73.

in the Air," in which he elaborated that principle:

It is sometimes argued that our aeroplanes should be able to prevent hostile aeroplanes from crossing the line, and this idea leads to a demand for a defensive policy. Now is the time to consider whether such a policy would be possible, desirable, and successful. . . . The aeroplane is an offensive and not a defensive weapon.⁴⁷ [Italics added]

This policy was subsequently sanctioned in instructions issued by the Royal Flying Corps in March 1917 under the title, "Fighting in the Air." The guiding principle of fighting in the air, it was emphasized, was "to seek out and destroy the enemy's forces."⁴⁸ [Italics added]

Meanwhile, the German high command--heavily committed to the offensive against Verdun--refused at first to divert any fighter forces to the Somme and only very gradually permitted some reinforcement.⁴⁹ However, in the wake of the major command shakeup of August 29, 1916, the new general headquarters quickly reversed command policy, suspended the offensive at Verdun, and relentlessly thinned out air forces on all other fronts in favor of the Somme.⁵⁰ At the same time "a vast reorganization and expansion of the German Air Forces was begun,"⁵¹ and General von Hoeppner was put in charge of the new centralized administration,

⁴⁷Jones, II, Appendix IX.

⁴⁸Ibid., III, Appendix XI, par. 2; see also Appendix Vol., Appendix XX, "Fighting in the Air," dated Feb. 1918.

⁴⁹Hoeppner, 74, 76.

⁵⁰Ibid., 76-78.

⁵¹Jones, II, Appendix VII, "Some Notes on the German Air Service on the Somme (1916)," Translated extracts from . . . Reichsarchiv, Potsdam.

with Colonel Thomsen, former chief of air forces in the field, as his chief of staff.⁵² As early as August Colonel Thomsen had recognized the need for reassessment of doctrine and organizational structure.

Up to that time fighters had either been allocated to escort various reconnaissance flights or had been temporarily echeloned for combat into special groups such as Boelcke's "Kommandos" at Verdun. To cope, however, with the persistent, aggressive British onslaughts over and behind the German lines at the Somme, more than centralized control was required. A fundamental change in unit organization and tactics was initiated, and integral pursuit squadrons, or Jagdstaffeln, were formed, beginning in August.⁵³ The need for more effective employment of air power was formally set forth in the following order from von Hoeppner in October 1916:

The present system of aerial warfare has shown the inferiority of the isolated fighting aeroplane. . . . Fighting squadrons must be trained most carefully to operate in close formation as a single tactical unit, which is the manner in which they must carry out attacks. Each Jagdstaffel must have its own area and length of front.⁵⁴

The sole duty of these new tactical units was to fight. Thus by the summer of 1916 both British and German air forces had formed

⁵²Ibid.; Hoeppner, 82-84; Air Marshal Sir Robert Saundby, Air Bombardment (New York: Harper, 1961), 15.

⁵³Ibid.; Hoeppner, 92-93.

⁵⁴Quoted in Jones, II, Appendix VII, par. c. The Germans also realized the futility of the barrage or aerial patrol system of protecting ground force activity. Hoeppner, 52.

regular, specialized pursuit units. Tactical air power was to assume still another form before long--one that directly affected the battle on the ground--attack aviation.

Tactical Employment: Ground Attack

Though the British had used aircraft at the Somme to great advantage in pressing attacks against ground troops, the Germans are generally credited with being first to make organized, systematic low-level attacks against enemy troops and guns on the battlefield.⁵⁵ During the winter of 1917-18 they conducted a war game with the idea of employing the full force of tactical air power directly on the battlefield itself, the object being to help the ground forces break the stalemate in the West. So much importance was attached to the positive results of this field exercise that the Germans, through reorganization of their air forces and transfers from Russia, established 38 units of a new type--attack or battle squadrons ("Schlachtstaffeln").⁵⁶ Great care was taken to avoid revelation of this force's composition and planned deployment. Largely as a result, the attack units scored great initial successes and contributed markedly to the progress of the early offensives of 1918.⁵⁷ This new function of air power was exploited to advantage by the Allies

⁵⁵Capt. George Kenney, Lecture, "History and Principles of Attack Aviation," ACTS, Langley Field, Va., Mar. 11, 1930. See also Maj. William C. Sherman, Air Warfare (New York: Ronald Press, 1926), 162.

⁵⁶Hoeppner, 146-147.

⁵⁷Ibid.

too, although comparably specialized planes and units were not yet in use by war's end. On the other hand, both sides had meanwhile developed aerial bombing well beyond the initial bomb-throwing stage, with crude bomb sighting mechanisms coming into general use during 1915.

Tactical Employment: Bombardment

Until the last year of the war almost all aerial bombing in the West was of a tactical nature, i. e., directed against enemy forces or nearby geographical targets essential to their operations, including depots, airdromes, and railheads. Practice, however, varied considerably for some time. While the Germans seemed to be persuaded "from the beginning" of the advantages of concentrating their bombing effort against a given target⁵⁸ -- though they did not always do so -- British aerial bombing was for the most part characterized by dispersion of force over a variety of targets, with generally inconsequential effects.⁵⁹ Though in practice real concentration was rarely achieved, there was growing doctrinal recognition at RFC Headquarters of the need to obtain mass, both over the target and for protection in the air.⁶⁰ A change became perceptible in late 1915. In November of that

⁵⁸Hoeppner, 20; see also Saundby, 20.

⁵⁹Saundby, 12-15, 17, 21.

⁶⁰Among the reasons for failure to achieve mass in bombardment effort were the following: division of the British air services, RFC (later RAF) and RNAS; decentralization of control over most of the RFC units, the Army insisting on observational and other front line tasks; division of opinion at RFC headquarters.

year the Royal Flying Corps dispatched nine airplanes on a particular raid whose most notable result seemed to be the confusion among the German anti-aircraft defenses, caused apparently by the size of the enemy force. The success of this mission and similar ones tended to dispel the hitherto common notion that to fly in groups offered enemy gunners an exaggerated target. Raids carried out in December 1915 and January 1916 were characterized by the "concentration of all the available aeroplanes of the wing to bomb one single objective together."⁶¹ The bombing forays of this period, then, bore witness to a change in bombardment employment concepts and operational tactics, with so-called "mass bombing of single targets"⁶² becoming more characteristic. These small groupings of airplanes assumed formation patterns and distance intervals of various kinds. By January 1916 formation and escort flying, which had been introduced initially to safeguard observational work, became standard practice in British bombardment missions. "The systems of formation varied . . . but all had this in common, that they aimed at compactness."⁶³ Nevertheless, differences of opinion continued with respect both to the effectiveness of bombardment behind the enemy lines and to the most judicious employment of available air power.

Whatever the merits of the respective cases, a directive

⁶¹Jones, II, 182.

⁶²Ibid.

⁶³Ibid.

from British air headquarters in February 1916 forbade bombing "done at a distance greater than a few miles from our front lines unless the results obtained and the object in view were . . . commensurate with the possible losses in pilots and machines."⁶⁴ To enhance bombing effectiveness and reduce losses, commanders were ordered shortly afterwards to take every opportunity to bomb at night.⁶⁵ The Germans had already turned primarily to night bombing and generally maintained that practice for the rest of the war.⁶⁶ Nevertheless, both sides continued day and night bombing throughout the war.

Surprisingly advanced bombing procedures were contained in the Royal Flying Corps headquarters memorandum of March 1917. Not only did it emphasize formation flying, but it underscored the true nature of the tasks of both bombers and escorting fighters: "The duty of the bombing machines is to get to their objectives and to drop their bombs on it, and the duty of the escort is to enable them to do so, and only to fight in the execution of their duty."⁶⁷ Bomber pilots were also warned of the necessity of keeping in close formation in order to provide mutual protection to and from the target. Contrary to earlier instructions, however, they were advised, upon approaching the target

⁶⁴Ibid., 183.

⁶⁵Ibid.

⁶⁶Hoeppner, 109-110.

⁶⁷Jones, III, Appendix XI, par. 18.

area, to change to single line formation in order to drop their bombs individually.⁶⁸ Apparently better results were found to be obtained in this manner (The Germans too had found this to be the case⁶⁹). Afterwards, they were to rally at a given point chosen beforehand in order to collect their forces and resume formation flying for the return to base. Such refinement of bombing precepts and tactics helped to pave the way for a different kind of bombing--more ambitious in goal, wider ranging in its field of action, and more vulnerable to enemy opposition in the air and hence more demanding of its pilots and crew--in a word, strategic bombing.⁷⁰

Origins and Development of Strategic Aviation and Air Defense

Which of the two opposing coalitions was first to conceive the idea of strategic air warfare remains debatable. If strategic air operations are viewed as aimed at the enemy's military as well as industrial, political, economic, and social systems,⁷¹ the available evidence would seem to indicate that the British Admiralty shared with German naval circles the distinction of conceptual leadership in this field. Jones asserts that "the question of long distance bombing raids against naval and military

⁶⁸Ibid.

⁶⁹Hoeppner, 119-120.

⁷⁰Strategic bombing is defined as "the bombing of a selected target or targets vital to the war-making capacity of a nation," in The United States Air Force Dictionary, editor: W. A. Heflin (Maxwell AFB, Ala.: Air University Press, 1956), 493. Consult glossary for related definitions.

⁷¹USAF Dictionary, 493.

centers in Germany had been constantly before the Admiralty from the outbreak of the war."⁷² Nevertheless, it was the German airship forces which, in early 1915, after much hesitation in the highest echelons of command, started systematic attacks against British targets, extending from Scotland to London.⁷³ Despite the great difficulty of high altitude operation and the inherent vulnerability of the hydrogen-filled dirigibles, the German naval and military air services continued to operate Zeppelins high over the North Sea against Britain throughout 1915 and 1916 until British fighters and antiaircraft batteries proved more than a match for them.⁷⁴ "As strategic bombers, the hydrogen-filled rigid airships of 1914-1918 failed, as in retrospect they were almost bound to do. . . . But for two years of war the rigid airship was the premier long-range weapon of airborne destruction."⁷⁵ In the meantime the evolution of the airplane had proceeded at so rapid a pace that during the latter half of the war it became possible through this means to strike directly at distant centers of enemy power.

By increasing the range and reliability of their airplanes and making good use of their advanced bases in the Channel area,

⁷²Jones, II, 451.

⁷³D. H. Robinson, The Zeppelin in Combat, 1912-1918 (London: Foulis, 1962), 54-56; see also K. Poolman, Zeppelins over England (London: Evans, 1960).

⁷⁴Jones, V, 153; see also Evolution of Aerial Warfare, 25-26.

⁷⁵Robinson, 350.

the Germans were able to conduct the strategic air war more efficiently, though still only sporadically. Their comparatively small attacks took the form of daylight raids in the summer of 1917 and night raids in late 1917 and mid-1918. For Britain these attacks carried important policy implications, both for air defense and air offense. Adequate air defense became imperative on June 13, 1917 when 14 German bombers flew with apparent impunity over London in broad daylight, bombed Liverpool Station and the dock area, and caused nearly 600 casualties.⁷⁶ Forced to devise and implement an effective means of combatting the new aerial threat, the British government from time to time diverted considerable pursuit strength from France. For the German government this proved to be one of the chief benefits of the strategic attacks.⁷⁷ To police the aerial portion of the key London defense area alone, the British government felt constrained by April 1918 to retain at home ten operational fighter squadrons with 282 combat-ready aircraft, while thousands of other officers and men stood by to operate searchlights, communications, gun batteries, and an elaborate "apron" of balloons.⁷⁸ Another important consequence of the raid of June 13 was the crystallization of the British government's attitude

⁷⁶Evolution of Aerial Warfare, 27-29. Strategic bombing account is based largely on Jones, IV, V, and von Hoepfner, Deutschlands Krieg in der Luft.

⁷⁷Jones, V, 153-154.

⁷⁸The latter forced raiders to fly either at more predictable altitudes and courses, or to bomb from much higher altitudes.

toward strategic bombardment.

For, meanwhile, despite the remarkable progress in the development of the new art, fighting in the air over the Western Front seemed--like the war on the ground--inconclusive, with the German air force tending to offset marked Allied superiority in numbers by managing generally to retain a slight technological edge and by maintaining their ability to shift their forces more rapidly to threatened sectors.⁷⁹ French circles realized by 1917 "that it was wrong to talk of command of the air being obtained so long as the enemy sources of supply remained intact."⁸⁰ A similar view was held in Italy.⁸¹ In the spring of 1917 the French government therefore proposed the creation of an independent or strategic bombing force to strike at the industrial centers of German power, but the British government, under pressure from Sir Douglas Haig, commander of the British expeditionary forces in France, opposed the proposal on the ground that it would divert needed air support from the army. At that time the Royal Flying Corps had in France 21 observation squadrons, 27 fighter squadrons, and but two bombardment squadrons.⁸² Meanwhile, the French aeronautical industry--despite its early European leadership--was

⁷⁹Jones, VI, 445; Holley, 131; James M. Spaight, The Beginnings of Organised Air Power (London: Longmans, Green, 1927), 293, established the ratio as 3 to 1 against the German air force.

⁸⁰Brooke-Popham, 113.

⁸¹Holley, 55.

⁸²Ibid., 154.

taxed even to supply the tactical air requirements of its large ground forces. This inability stemmed, apparently, from weakness in organizational and administrative structure.⁸³ Thus it was that Britain, under the pressures generated by the German daylight attacks of June 1917, assumed, albeit not without hesitation, the mantle of Allied leadership in this new domain of war.⁸⁴

In Britain the Air Board had already been created to formulate both air policy and doctrine; later in the year it was supplanted by the Air Ministry, which exercised control over both military and civil aviation and provided for procurement; in the following spring the Royal Air Force, embracing all land-based and sea-borne aviation, was created. By the middle of 1918 a special strategic task force was established within the Royal Air Force and designated the "Independent Force." Its purpose was described by Sir William Wier, the Secretary of State for the Royal Air Force, as "the continuous bombing of German industrial centers."⁸⁵ At the outset it was composed of five squadrons--of which two were of the long range, night bomber type. This independent air force, as it became popularly known, was placed under the command of General Trenchard. Although the

⁸³Spaight, 221-237.

⁸⁴Holley, 43, 54, 202.

⁸⁵Jones, Appendix Vol, Appendix VII, "Memorandum . . . on the Responsibility and Conduct of the Air Ministry," May, 1918.

independent air force never comprised more than nine squadrons, despite a much larger planned strength, it dropped 550 tons of bombs on a large number of German targets between June and November, 1918--more than the Germans had unloosed over Britain during more than three years of strategic bombardment and more than four times as many tons as the entire United States Army Air Service dropped during the comparable period of 1918.⁸⁶

The number of Allied bombings of Germany rose sharply during 1918, as indicated by the following data taken from Jones:

<u>Year</u>	<u>By Day</u>	<u>By Night</u>	<u>Estimated Nr of Bombs</u>
1915	44	7	940
1916	21	75	917
1917	45	130	5,234
1918	119	234	7,117
TOTAL	229	446	14,208

The major effects of the strategic bombardment campaign against Germany itself were listed by Jones in the following order of importance: (1) weakening of the national resistance; (2) decrease in manufacturing output of war equipment and materials, chiefly through loss of time occasioned by raids; (3) diversion of much aerial strength to the work of air defense.⁸⁷

⁸⁶Jones, V, 153-154; USAF Historical Studies, No. 89; Development of Air Doctrine in the Army Air Corps, 1917-1941 (Maxwell AFB, Ala.: Air University, 1955), 9. Hereafter cited as USAF Historical Studies, No. 89.

⁸⁷Ibid., 141.

Had the Inter-Allied War Council's plan of August 1918 for the strategic bombing of Germany materialized, these effects would no doubt have been accentuated. But as with the earlier hopes of the French government for strategic bombers from America, the inter-allied strategic bombing force, in which the United States Air Service might have played a leading role, never became a reality, largely owing to the inability of the United States to provide the necessary types of aircraft. Much of this failure stemmed in turn from the American government's failure to realize the importance of doctrine.⁸⁸

This deficiency, along with other difficulties encountered by the Air Service, may have derived largely from "one common source: . . . our unpreparedness and the necessity of preparing for war while hostilities were in progress." In any event, the poorly prepared air force experienced much "difficulty in keeping abreast of progress in this newest arm of warfare." Fortunately the American Air Service officers and men were finally free to utilize and draw upon the Allies' resources of doctrine, organization, and equipment.⁸⁹ Truly, as William Mitchell, the highest combat commander of the Air Service, later declared, "We were nurtured during the . . . war under the protecting skirts of the French Republic and the British Empire and . . .

⁸⁸Holley, 50, 63, 134, 136.

⁸⁹Final Report of the Chief of Air Service, AEF, to the Commander-in-Chief, AEF (Washington, 1921), 133-134, 157.

in everything we did they were our chaperons and mentors."⁹⁰

American Air Experience in World War I

Doctrinal Roots

While no doubt the evolving air power doctrines of the Allies impressed quite a number of American officers, very possibly the most important and lasting influence of Anglo-French ideas was exerted through the medium of that unique individual, William Mitchell. His temperament, outlook, and status in the military⁹¹ already predisposed him to act positively, quickly, and aggressively and to adopt a favorable attitude toward change.⁹² He was highly receptive to new ideas and new ways of doing things. During a visit to the French sector of the front in April 1917 the young American major readily perceived a contrast in French and American Army attitudes and mentality. He noted that whereas American Army officers were characterized by adherence to "peace-time efficiency based on excellence in paperwork," French officers were "men of quick and sure decision" which they were not afraid to act on, and which they carried into effect vigorously

⁹⁰Typescript, "Our Stamped Out Aviation," ca. 1925, p. 21, General William Mitchell Papers (Library of Congress, Washington, D. C.), Box 32. (Misfiled in 1920 Organization of Air Service folder). Hereafter cited as Mitchell Papers.

⁹¹Gerald E. Wheeler, "Mitchell, Moffett, and Air Power," Airpower Historian, VIII (April, 1961), 79-80. Mitchell's non-West Point status and his need to prove himself by deeds in competition with his fellow officers are underscored.

⁹²Infra, chap. II, for biographical data.

at once.⁹³ A few days later Mitchell flew over enemy lines--the first American serviceman to do so--⁹⁴ and was deeply impressed by the fact that he "could cross the lines of . . . contending armies in a few minutes in an airplane,"⁹⁵ while on the surface the rival ground forces had been locked in static trench warfare for three years. Were it not for the desperate plight of the Allies, he contended, time could be devoted to the building of "a suitable air force to hit the Germans where they are the weakest--that is, back in the interior of their country."⁹⁶

About the same time Major Mitchell formulated "with the aid of a few gifted French officers" a plan for an American air force to be built around three proven French types and intended for operation by the fall of 1917. When the proposed program, cabled to Washington on April 20, evoked no response, Mitchell besought the French government to exert pressure on ours.⁹⁷ His ensuing collaboration with officers in French General Headquarters was apparently instrumental in the dispatch therefrom of a communication on May 6 specifying air requirements the United States should be asked to provide. This, in turn, became the

⁹³Typescript, European Diary, Chap. I, 35, Mitchell Papers.

⁹⁴AFP 210-1-1, p. 73.

⁹⁵William Mitchell, Memoirs of World War I (New York: Random House, rev. ed., 1960), 59. Hereafter cited as Memoirs.

⁹⁶European Diary, chap. I, 105.

⁹⁷Levine, 98; Arnold, 50.

basis of French Premier Ribot's subsequent cable to Washington officially establishing such requirements. Out of the Ribot cable grew America's World War aeronautical program.⁹⁸ Mitchell's rapidly budding doctrinal concepts were soon stimulated greatly by contact with a British air leader who was to exercise a profound influence on him--⁹⁹ a leader who "had a complete philosophy of air power."¹⁰⁰

It was May 1917 when Major Mitchell fell under the apparently magic spell of the commander of the Royal Flying Corps, General Sir Hugh Trenchard. Commenting on his four-day visit to British air headquarters, Mitchell described Trenchard as "a man of about six feet in height, erect of carriage, decided in manner, and very direct in speech"; he related that they soon "became fast friends"; and added that he had never worked with or known a man he more greatly respected or in whose judgment he had more confidence.¹⁰¹

Asked by the British air chief what he wanted to know, Mitchell explained that he "desired to learn about his organization, his equipment, his system of supply, and . . . [operations]".¹⁰² His host related in detail the policies and doctrines

⁹⁸Ibid., 97-101; Arnold, 50-51.

⁹⁹H. H. Ransom, "Lord Trenchard--Architect of Air Power," Air University Quarterly Review (AUQR), VIII (Summer, 1956), 64.

¹⁰⁰Levine, 95.

¹⁰¹European Diary, 20.

¹⁰²Memoirs, 104.

which had evolved in the air force from the outset of the war.

As to strategic air warfare, General Trenchard declared "that aviation should be used over the enemy's country as far as possible. In his opinion it was perfectly practicable for airplanes . . . to attack the rear of the German army through the air and destroy all its means of supply, subsistence, and replacement."¹⁰³

Mitchell immediately commented in his diary in his usual enthusiastic manner:

With an increase in the radius of operation . . . Berlin could be reached, These things are perfectly possible of accomplishment from a practical standpoint. All that is needed is the development of the airplane and the method of handling them. . . . The ground troops do not yet realize that they are perfectly incapable by themselves of dealing a blow at the heart of the enemy's country, or his vital centers. . . . Aircraft can fly straight to these vital points, and if sufficient aircraft could be gotten together, a great decision could be obtained through the air alone [Italics added] by destroying all of the enemy's vital centers, his manufactures . . . supply points . . . railroads and roads . . . bridges and . . . his armies.¹⁰⁴

As late as April 1918 Mitchell apparently entertained the opinion that "if we had had sufficient bombardment aviation, we could have brought the war to a close by carrying it to the vital points in the interior of Germany and making the people sue for peace....."¹⁰⁵

¹⁰³Ibid.

¹⁰⁴European Diary, chap. II, 26.

¹⁰⁵Memoirs, 197.

Referring to those who stood in the way of independent air power, Mitchell did not overlook the British Navy's opposition to Trenchard, a parallel to his own later experience with the United States Navy:

Another element that militates against the development of air power is the navy. The . . . Naval Air Service . . . has organized squadrons that are fighting on land . . . [The Third Bombardment Wing at Luxeill in eastern France]. They have their own way of operating. . . . The navy also opposes any air operations against the enemy that are not under their control and wishes to control, for that matter, all air operations. It is General Trenchard's opinion that eventually air power will be much stronger than sea power. [Italics added] The old conservative elements in the navy see this and oppose any change.¹⁰⁶

When Trenchard asserted that "the only way to handle air power was to unify it all under one command," Mitchell found himself in complete agreement:

I thoroughly concur in General Trenchard's ideas on this subject, because we have had a terrible time in our own country in attempting to coordinate the interests of the army and navy, which are always diametrically opposed to aviation and which have resulted in holding up and practically wrecking American airpower. It is holding us up now in organizing our air forces for the European war. . . . What should be done in America is to establish an independent air department at once. . . .¹⁰⁷

In the course of the American major's stay at RFC Headquarters Trenchard read a paper representing "his opinions and policy at the time."¹⁰⁸ This was the British air commander's "Future Policy in the Air," in which he advocated incessant offensive as the tactical doctrine best calculated to insure

¹⁰⁶European Diary, chap. II, 27.

¹⁰⁷Ibid., 27-28.

¹⁰⁸Memoirs, 105.

unhindered operation of one's own observation aviation while keeping similar enemy operations over one's territory to the minimum. Regarding this concept, Mitchell made the following important entry as he reviewed the tactics which Trenchard had outlined:

This was all the bombardment aviation and pursuit he could get together so that he could hurl a mass of aviation at any one locality that needed an especial air attack. His idea was to send them across in one big formation, attack the objective with their bombs and machine guns, fight whatever air battles were necessary, and then get back. This, of course, is the proper way to use air power. I am sure the future will see operations conducted in this way by thousands of airplanes.¹⁰⁹

It was precisely this concept of tactical employment that Mitchell used to advantage in the air battle over St. Mihiel in the following year.

With reference to British tactical organization based upon specialization of function, Mitchell observed that "General Trenchard's method of handling the air forces actually with the troops was to place with each army the airplanes that were necessary for the use of the ground troops in action; for their own domestic use, as he put it. . . . General Trenchard assembled the bulk of the aviation in what he called a General Headquarters Wing or Brigade."¹¹⁰ From this fundamental principle of organization Mitchell never departed.

In February of the following year Mitchell made what he termed a "special study" of the German employment of aviation.

¹⁰⁹European Diary, chap. II, 28.

¹¹⁰Ibid.

What apparently impressed him most lastingly was the flexibility of the German system, that is, the rapidity of reflex action which it permitted. He observed that "the rear of the German army was well covered with good flying fields and airdromes, connected by telegraph to one another and with the supply points in their vicinity. Thus their air forces could be shifted from one side of the line to the other in a very short time. . . . They could almost always concentrate in one place more quickly than the Allies."¹¹¹ In later years Mitchell urged adoption of a similar system for shifting American air power from the interior to the coast or from one coast to another.

Despite the benefits to be derived from available European doctrine, the fledgling air force in Europe was unable to obtain the kind of force structure it wanted, even when its leaders in the Paris headquarters were in agreement. In the stern school of war it proved impossible to remedy quickly the results of years of neglect and unpreparedness. Both organization and employment of the Air Service, AEF were necessarily affected by the number, kinds, and quality of aircraft produced within the Allied coalition.

Other Limiting Factors: Equipment and Time

The Air Service's actual operational experience--itself destined to exercise a major influence on postwar doctrines of employment--was determined not only by contemporary concepts of employing aircraft in military operations but by the types of

¹¹¹Memoirs, 180-181.

airplanes actually supplied by the United States and the Allies. Availability of certain types of aircraft for operational use was in turn dependent to a great degree upon the structure and production emphasis of the American aircraft industry and the surplus capacity, if any, of Allied production.

In any event, the types of aircraft produced in America were considerably different from what either the Allies, especially the French, or the Air Service, AEF had expected. In his cable of May 1917, Premier Ribot had requested 4,500 planes, plus replacements of 2,000 a month, for operation by the spring of 1918; the greater part were to be bombing planes and pursuit escorts designed for strategic air operations. However, for some inexplicable reason, that portion of the cable dealing with types of aircraft was apparently deleted and never received in Washington.¹¹²

The decision as to types to be produced rested uneasily among a number of organizations of varying competence. Of these the Office of the Signal Corps remained critically important throughout that period in 1917 when decisions were made as to types finally put into production. The consistently conservative position of the Signal Corps was that the value of the airplane was limited to reconnaissance work. On the other hand, the Bolling mission--dispatched to Europe in June 1917 to gather data and report on types of aircraft to be produced--had seemingly been impressed by strategic bombing concepts, but it failed

¹¹²Holley, 42f.

nevertheless to emphasize this point in its report. Instead it recommended production priorities in the following order: (1) training aircraft; (2) tactical aircraft, largely observation and protective pursuit, to operate with army forces in the field; and (3) once the tactical requirements of the ground force in France had been met, bombers, protected by pursuit planes. Thus its influence was seemingly thrown in the direction of tactical rather than strategic type aircraft. The consequence was that 89 per cent of the total number of aircraft produced in the United States were designed either for observation or fighter defense of observation functions.¹¹³

The Air Service, AEF itself seemed to be aware of the implications of aircraft production facts and tried, persistently but apparently in vain, to influence from afar the scope and direction of the production program. In the end, however, the Air Service, AEF's final attempt at formulation of a program--the "202 Program"--seemed to stem more from a realization of the de facto situation prevailing in the production program than from its desire for a particular kind of force structure.¹¹⁴

That the programs of the Air Service, AEF were in themselves, however, lacking in internal consistency of conceptual aim and planned application of force was clear from the succession of air force designs, shown below, which emanated from its Paris headquarters over a scant ten-month period:

¹¹³Ibid., 55-56, 134.

¹¹⁴Ibid., 146.

Number and Types of Squadrons Requested
by Air Service, AEF¹¹⁵

	<u>Pursuit</u>	<u>Observation</u>	<u>Bomber</u>	<u>Total</u>
17 Oct. 1917	120	80	60	260
9 Apr. 1918	14	50	56	120
6 Jun. 1918	120	40	101	261
29 Jul. 1918	60	101	41	202

Obviously such fluctuations were hardly the product of combat experience, which dated only from April 1918. Rather they reflected to a considerable extent changing British and French views of the role of air power in war. Actual flying equipment in American hands bore little resemblance to these production plans.

In June 1918 the Air Service in France had five squadrons equipped entirely with aircraft of foreign manufacture, not one of which was designed for bombardment operations.¹¹⁶ By the end of the war the American flying force in France counted at the front and behind it 24 observation squadrons--some of which doubled as day-bombers--and but one squadron of long-range night bombers.¹¹⁷ Of the 6,287 aircraft on hand in November 1918, slightly over 1,200 had come from the United States. Of the latter, which consisted entirely of DH-4 observation craft--

¹¹⁵Ibid., 49. Aircraft actually on contract in April 1918: 2,000 pursuit, 1,050 bombers, and 8,000 observation craft. Ibid.

¹¹⁶Edgar S. Gorrell, The Measure of America's World War Aeronautical Effort (Northfield, Vt.: Norwich Univ., 1940), 30.

¹¹⁷Holley, 131.

already obsolete and sub-marginal in performance, 960 were at the front; the remaining 5,000 aircraft were composed of nine other types of Allied craft. The majority of the latter--4,791--came from French sources.¹¹⁸ Not a single United States-made pursuit plane or night (strategic) bomber reached the front by war's end.¹¹⁹ Moreover, the time within which experience could be obtained diminished steadily, and in early 1918 the pressure for direct American help exacerbated the problem of hammering together an effective air force.

Organization

Nowhere perhaps was the problem of organization reflected more dramatically than in the contest Mitchell waged for leadership of the Air Service in France. Though he had been appointed Aviation Officer, AEF as early as June 30, 1917,¹²⁰ Lieutenant Colonel Mitchell was superseded in November by Brigadier General Benjamin Foulois, Signal Corps, who was named to be the first Chief of Air Service, AEF. Foulois, a flying officer and an able, methodical administrator,¹²¹ had headed the Airplane Division (formerly Aviation Section) of the Signal Corps since July and had apparently risen rapidly in rank.¹²² The Air Service, AEF was distinct from the Air Service organization in

¹¹⁸Gorrell, 35.

¹¹⁹Holley, 132, 145.

¹²⁰AFP 210-1-1, pp. 73-74.

¹²¹Arnold, 79.

¹²²AFP 210-1-1, p. 73.

the United States. (The latter remained under direct Signal Corps jurisdiction until May 1918, when two separate air departments in the United States were created, the Bureau of Military Aeronautics and the Bureau of Aircraft Production.)¹²³ Although in January 1918 Mitchell, promoted to Colonel, had been made Chief of Air Service of the newly organized First Army Corps with headquarters at Neufchateau,¹²⁴ he apparently continued for some time to resent his displacement as de facto leader of the European force, a mood reflected sometimes in caustic comments committed to his journal during the winter and spring of 1918.¹²⁵

Finally, in May 1918 General Pershing decided to go outside the Air Service to find a commander capable of putting the air force house in order. When he appointed General Mason M. Patrick, an engineering officer, to be Chief of Air Service, AEF Pershing told him: "In this army there is but one thing that is causing me anxiety, and that is the Air Service. In it are a lot of good men, but they are running around in circles. Someone has got to make them go straight. I want you to do it."¹²⁶ Foulois controlled the air force supply services and training school, while Mitchell was placed increasingly in charge of air units.¹²⁷

¹²³Ibid., 75.

¹²⁴Ibid., 74.

¹²⁵Memoirs, 182-183, 190.

¹²⁶Quoted in Arnold, 80.

¹²⁷Ibid.; Memoirs, 205, 233.

Combat: Application of Doctrinal Lessons

At the height of the German advance in July, Mitchell, who "flew over the lines almost every day, keeping track of every unit, every commander,"¹²⁸ was responsible for the discovery that German units had started moving south across the Marne at five places in the Dormans area, though all the bridges were down, and gave AEF headquarters "exact knowledge" of it.¹²⁹ In the blunting of that crossing attempt, Allied tactical air power, including the American First Pursuit Group, played an important ground attack role.¹³⁰ In ensuing operations at Chateau-Thierry, where American air units operated with the French, Mitchell prevailed upon the French air commander to discontinue the use of small, defensive patrols for protecting the work of observation planes and, instead, to adopt Trenchard-like offensive tactics aimed at keeping the enemy pinned down over his own territory.¹³¹

By early September Mitchell was able to mass at St. Mihiel the **greatest** tactical air force assembled in the war--nearly 1500 aircraft, composed of American, French, British, and Italian contingents.¹³² In the intervening months he had persuaded general headquarters to endorse the concept of an

¹²⁸Levine, 112.

¹²⁹Memoirs, 221; Arnold, 71.

¹³⁰Memoirs, 222; Capt. George Kenney, Lecture, "History and Principles of Attack Aviation," ACTS, Langley Field, Va., March 11, 1930.

¹³¹Memoirs, 209, 211-213, 220.

¹³²Ibid., 238; AFP 210-1-1, p. 75.

inter-allied air striking force. On the ground the three-day operation (September 12-15) involved 400,000 men. To them Mitchell allotted the minimum force required for observation and its protection. These functions were performed by American observation squadrons, under the local protection of the American First Pursuit Group. The great bulk of the armada consisted of massed units which Mitchell was able to hurl in concentrated, systematic fashion against the German lines and rear areas, at first almost without air opposition. Two French air brigades, each containing about 400 planes, alternated in striking the flanks of the salient, executing ground attacks upon all possible targets. Meanwhile, Trenchard's Independent Force struck airdromes to the rear and forced the fighting in the air. Similarly, the American 96th Bombardment Squadron, though relatively weak, attacked the key point of Vignuelles, 30 miles distant from the front; air combat was joined by the pilots of the accompanying Second and Third Pursuit Groups. So successful was the over-all effort of the Allied air force that the Germans, who were already in process of evacuating the exposed salient on the tenth, soon experienced great difficulty in extricating themselves without excessive losses of prisoners and guns. The German air force was thus "forced . . . to measure strength" with Mitchell's air army and to concentrate in the St. Mihiel area to cover the safe withdrawal of their ground forces.¹³³

¹³³Memoirs, 241-246.

The "successful and very important part taken by the air forces" under Mitchell's command in this first offensive of the American Army was noted by General Pershing in a letter to Mitchell on September 16. He commended the air leader upon "the organization and control of the tremendous concentration of air forces."¹³⁴ Trenchard, too, in congratulating Pershing on the operation, was of the opinion "that of all the air operations in his experience this was the first in which no hitch had occurred, no order had been misunderstood, and no mission had failed."¹³⁵ For Mitchell this was indeed "praise from the master himself."¹³⁶

Shortly afterwards, however, the scope of the tactical air task confronting Mitchell increased appreciably. In the 47-day campaign of the Meuse-Argonne, which began in late September, the American air leader was faced with the typical World War I problem of stalemate on the ground. Not only was the enemy ground position well fortified and organized for defense, but their posture in the air was much stronger than it had been at St. Mihiel. At the same time, Allied air power was weaker in that it was once more divided into fragments. With some notable exceptions, only Air Service aircraft were available during the protracted, inconclusive campaign. Under such circumstances Mitchell deployed his air power along the central axis of the

¹³⁴Quoted in Levine, 135.

¹³⁵Quoted in ibid.

¹³⁶Ibid.

ground advance and sought to attack and engage the enemy behind his lines wherever possible. Despite numerous enemy incursions into AEF air space, the American air commander was able, through offensive employment of his units, to furnish general protection to the ground units along the 30-mile-long stretch of front.¹³⁷ Still, he was not satisfied.

To break the stalemate, Mitchell suggested to Pershing the preparation and use of an airborne army to be landed by parachute behind enemy lines and proposed tactics for its employment. The war ended, however, before the scheme could be implemented. Mitchell subsequently referred to such forces as "independent . . . aviation, which acts by itself directly against the enemy aviation and its ground troops" and predicted that "in this class of war . . . the greatest development may be expected in the future as it will be able to attack not only enemy air forces but enemy ground troops and enemy naval formations."¹³⁸ Clearly, Mitchell's dominant conception of air power had shifted from the realm of the strategic to that of the tactical between April and November 1918. This phenomenon paralleled and was part of the larger experience pattern of the entire Air Service, A.E.F., which was formed during the seven-month period of combat operations, April to November 1918.

But once the victory had been won, even the tactical

¹³⁷Memoirs, 250-260.

¹³⁸Quoted in Levine, 151, citing Aircraft Journal, July 5, 1919.

role of air power seemed to drop out of sight. As for strategic air power, certainly it had not been exercised to any appreciable degree during the war. At best it remained an unknown quantity, fit largely for speculation and theory. Certainly there was no body of strategic experience in the American air arm which could be pointed to as a basis for ready development of heavy bombardment.¹³⁹ The extreme handicaps which had limited the experience of the American air force in World War I were but dimly perceived, if at all; a conception of the potential of air power was visible but to a gifted few. Consequently most postwar discussions revolved around what actually did happen, and not what might have happened, or what could happen in the future. As within the Army as a whole, so within the Air Service itself--so largely conditioned by the experiences of the war, there was a tendency to relate the future role of air power to an elaboration of the tactics employed in the last months of the war.

The opinion of the majority of air officers in the higher echelon of the Air Service was typified by Colonel Thomas DeWitt Milling, who commanded the air units of the First Army. He emphasized that the postwar air arm's value to the military establishment depended upon proper correlation with the infantry and artillery. Both he and Colonel Frank P. Lahm, who occupied a comparable position with the Second Army, agreed that observation

¹³⁹Capt. Laurence S. Kuter, ACTS, Lecture, "American Air Power--School Theories versus World War Facts," World War History Course, 1937-38. See also ACTS, Bombardment, 1933 (Maxwell Field, Ala.: 1933), p. 9.

and other services to the ground arms constituted the main functions of the air service. Apparently because of differences of opinion within the War Department and Air Service over the role air power had played and the role that it might play, the report of the Chief of Air Service was held up until 1921. In that report General Patrick declared that the most important function of the air force was observation. The document contained no systematic appraisal of air power in the winning of the victory; little in the way of significant lessons was culled from the costly wartime experience. There was a recognition of the need for development of tactical ground attack aviation, and a recommendation for the development of this type of aviation as a specialized function of the air force. However, neither here nor in any other official publications of the early postwar air service was there any formulation of concepts that was at variance with the prevailing doctrine of the primacy of observation. Despite the claims made for strategic bombardment for a time during the war, there was little evidence to indicate the persistence of that point of view among professional airmen at or shortly after the end of hostilities. In any event, almost nobody in the Air Service seemed to be aware of the need for an objective, systematic, and sustained study of concepts of employment and tactical methods of operations, and there was no established organization within the Air Service to which such a task might have been routinely assigned.¹⁴⁰ No doubt because of

¹⁴⁰Holley, 157-158, 160, 168-169.

the void thus formed, serious students of the art of air warfare turned increasingly to the ideas of air leaders like William Mitchell and Giulio Douhet in the 1920's.

PART II

EARLY POSTWAR AIR THOUGHT IN EUROPE
AND THE UNITED STATES

CHAPTER II

WILLIAM MITCHELL AND HIS AIR POWER

DOCTRINE, 1921

While serious as well as fictional accounts of military aviation and aerial conflict had appeared in public print before 1914, it required the cataclysm of the First World War to bring forth the two greatest exponents of air power in the first half of this century--William Mitchell and Giulio Douhet.¹ In this and the following chapter their major, formative experiences are set forth and compared, followed by a functional exposition of their doctrinal positions in 1921.

Though born in 1879 in Nice, France, William Mitchell grew up in Milwaukee, Wisconsin where the family was so prominent that "Mitchell landmarks" were a familiar sight. Son of Senator John Lendrum Mitchell, an anti-imperialist who nevertheless supported the resolution for war with Cuba, William Mitchell belonged to a generation which "went to war the way a championship team goes to a tournament." Leaving George Washington University to enlist as a private in a Wisconsin regiment,

¹H. G. Wells, The War in the Air (New York: Macmillan, 1908); Claude Grahame-White and Harry H. Harper, The Aeroplane in War (London: Laurie, 1912).

Mitchell soon obtained a commission in the Signal Corps and rapidly showed his superiors that he was "a man of ability, energy, and intelligence," his detachment laying more miles of telegraph lines than any other in Cuba. Arranging to be re-assigned to the Philippines upon the pacification of Cuba, he distinguished himself during the campaign against Aguinaldo by improvising and building emergency telegraph communications under extremely formidable circumstances. Upon returning home in 1900 via Japan, China, India, Egypt, and Europe, he obtained a regular army commission and was soon assigned to Alaska where he spent two years constructing telegraph lines finally linking Nome with the United States. Leaving the northland as the youngest captain in the army, he served as an instructor in signal communications at the Army Staff College at Fort Leavenworth and then attended successively the army's School of the Line and Staff College. Reassigned as Chief Signal Officer for Luzon in 1909, he found time to map various off-shore islands, investigate purported Japanese activity therein, observe military maneuvers in Japan in 1911, and tour Korea and Manchuria. By 1912 he was back in the United States, stationed on the Mexican border. Before long he became, at the age of 32, the youngest officer on the General Staff, in charge of military intelligence emanating from the Balkan area, where war was blazing.²

When the First World War broke out in August 1914 his

²Unless otherwise noted, data on Mitchell's life are based on Levine, which remains the most reliable and complete biography available despite its tendency toward hero-worship.

task was to keep up war maps in the White House, Congress, and the War Department. With excellent sources of data to guide him and the experience of Europe before him, Mitchell in 1915 wrote a paper for the Army War College entitled "Our Faulty Military Policy." Criticizing America's desuetude after each major war, he called for the creation of a Council of National Defense comprising the top leadership of both services; asked that the military establishment be given a greater voice in the government; and recommended the adoption of a modern military program based on adequate preparation for war in time of peace on a scale commensurate with the possible military strength of our enemies, and compulsory military service.³ This marked the first of Mitchell's indefatigable labors to modernize the American defense system. During these years he was also instrumental in the early application of radio and motor transport in the Army⁴ and soon decided to take up flying, the newest application of science. By 1916 he could see that we would soon be involved in the war and that aviation's star was rising. He learned to fly on weekends at a school near Washington. Though his first solo resulted in a crack-up, "his flying experience was enough to gain him an appointment as head of the aviation section of the Signal Corps and a promotion to

³"Our Faulty Military Policy," Washington, Army War College (July, 1915), 21.

⁴Edward Warner, "Douhet, Mitchell and Seversky," in Makers of Modern Strategy, ed. E. M. Earle (Princeton: Princeton University Press, 1943), 488.

major."⁵

Encountering difficulty in this new type of assignment, he soon arranged to go to Europe as an observer instead. Apparently he had inadvertently speeded his departure from Washington by outspoken criticisms of the handling of the aviation program.⁶ Within a week after Mitchell's arrival in Spain, the United States entered the war, and he proceeded to France where he soon became a popular American hero.⁷ Despite the vicissitudes of fortune, he rose rapidly in rank from major to brigadier general, and during the closing weeks of the war commanded all the aerial operations of the Air Service. On November 7 he received the Distinguished Flying Cross in recognition of extraordinary heroism displayed on several occasions.⁸

After a brief stay in Germany with the occupation forces, Mitchell returned home and on March 10, 1919 became immediate assistant to the new Director (later, Chief) of Air Service, Major General C. T. Menoher, under the title, Director of Military Aeronautics.⁹ For six long frustrating years, he was to remain the number two man in the Air Service in Washington.¹⁰

⁵Brig Gen Dales O. Smith, United States Military Doctrine (New York: Duell, Sloan & Pearce, 1955), 131.

⁶Arnold, 49.

⁷Levine, 112-115; Arnold, 49, 85.

⁸Levine, 127, 143.

⁹AFP 210-1-1, 76.

¹⁰Ruth Mitchell, My Brother Bill (New York: Harcourt, 1953), 307.

Mitchell had returned in 1919 in anticipation of taking over command of the air force.¹¹ In this position he undoubtedly hoped to arrest the deceleration so painfully evident in the course of military aviation. More than once in these years, therefore, Mitchell attempted to recast the organization of the air force with a view toward creating a more important place for himself in the operational or tactical part. In April 1919 he proposed to General Menoher a new structure comprising two major divisions, one of an essentially personnel and support nature to be called the "Air Service," and the other, a tactical organization, to be called the "Air Force," the latter of which none but a flying officer might be eligible to command.¹² This recommendation was strongly rejected by Lieutenant Colonel Oscar Westover, the executive officer to the Director of the Air Service, and one who was to serve as Commandant of the Air Service Tactical School in the mid-twenties and as Chief of Air Corps in the mid-thirties. In his reply of April 18, Westover called the "proposition of a separate U. S. Air Force charged only with tactical operations . . . entirely out of the question at present," and cited the experience of split organizations within the Air Service during the war as more than sufficient reason not to establish two "co-ordinate activities, neither of which knows definitely what it wants."¹³ But the shrunken state of aviation in the

¹¹Arnold, 86-87.

¹²Memo to Director of Air Service, Apr. 16, 1919.

¹³Memo to Director of Military Aeronautics, Apr. 18, 1919.

immediate postwar era continued to appall Mitchell, and despite this rebuff he sought by every means in his power to restore and reinvigorate aviation.

By March of 1920 Mitchell had become convinced that his role was to be that of a national savior. He wrote:

In view of the rapid disintegration of the Air Service, it became a vital necessity for some prompt action to prevent the destruction of a valuable agent in the National Defense beyond the point that is necessary due to peace conditions. . . . In this emergency General William Mitchell felt it his duty to his country to enter into the effort to save as much as possible of the assets remaining and with these to build on a new but sound foundation the structure of a revived Air Service that will . . . be a great national asset as well as the nation's foremost line of defense.¹⁴ [Italics added]

To carry out this self-imposed task, Mitchell devised a strategy which aimed at forcing a solution on the War and Navy Departments from without. While continuing to proselyte within the service,¹⁵ he placed increasing reliance upon instigating and building up a "swelling tide of pressure, inspiring public hearings and wide discussion, and forcing the issue of air power into the open."¹⁶ The other mainspring of his strategy was to demonstrate in all ways possible the superior properties and overwhelming power of the air arm. The sinking of several heavy naval vessels off the east coast was one of the most important aspects of his program.

During the course of preparation for the tests of the

¹⁴Typescript, WD, ODAS, Mar. 2, 1920, no subject, Mitchell Papers, Box 32, filed under "Plans for Aeronautics."

¹⁵Wheeler, Air Power Historian, VIII (Apr., 1961), 79-80.

¹⁶Levine, 175.

summer of 1921 which he finally arranged after applying intensive pressure upon the navy through various channels, an incident occurred which Mitchell characteristically used to attack those whom he considered responsible for the lamentable condition of aviation. In late May there had been a widespread furore in the press over the circumstances surrounding a serious airplane crash and related mishaps during a severe electrical storm near Indian Head, Maryland which Mitchell blamed in part on the absence of a radio service to furnish flying directives and weather bulletins. He argued that only a unified air department could furnish efficiency and safety. Soon there were some publicly voiced demands that Mitchell be placed in charge of a reorganized air service, but in early June the Chief of Air Service instead requested Secretary of War Weeks to remove Mitchell from his staff. Fortunately the latter occupied a strong position, being in charge of the impending bomb tests. Mr. Weeks, who had previously been quoted in the press as saying that Mitchell had "greatly annoyed the Navy on several occasions," stood by him, announced that the bombing tests would be held under all circumstances, and assumed the role of peacemaker between Mitchell and Menoher, but administered "a mild reprimand to Mitchell who was asked to offend no more by talking out of school."¹⁷

In July Mitchell's air bombing exercises off the Virginia Capes culminated in the sinking of the ex-German cruiser Frankfort and the dreadnought Ostfriesland, events revolutionary in

¹⁷Ibid., 229, 231-39.

their implications for air and sea power. The latter ship, according to Captain Hollweg of the German navy, who had brought her to the United States, had been constructed to be "as nearly unsinkable as possible" and had proved her sturdiness during the Battle of Jutland. Yet before the unbelieving eyes of many on-looking dignitaries and high-ranking army and navy commanders, the Ostfriesland went down under the attack of the First Provisional Air Brigade, personally directed by Mitchell, within 21 minutes from the beginning of ordered bombing on July 21.¹⁸

Though the Joint Board of the Army and Navy in its official report of August 21, signed by the Chief of Staff, General Pershing, admitted that the air weapon might play a possibly decisive role in coastal defense,¹⁹ it insisted that the airplane had not made the battleship obsolete and continued to maintain that the latter remained the "greatest factor of naval strength" and hence of national defense.²⁰ Thereupon Mitchell apparently leaked to the press his own report on the bombing tests which General Menoher had pigeonholed. This created another sensation. Mitchell's critique would have removed the navy from the coastal defense mission entirely. The intrepid

¹⁸Ibid., 240-263.

¹⁹Joint Board, "Report of Aerial Tests," Aug. 21, 1921, quoted in War Department Statement by Brig Gen Hugh A. Drum, Ass't Chief of Staff, WDGS, before the President's Board of Aviation Inquiry, Sep. 21, 1925, 22.

²⁰Ashbrook Lincoln, "The United States Navy and the Rise of the Doctrine of Air Power," Military Affairs XV (Fall, 1951), 153.

aviator asserted that, had his bombing brigade been fully employed, it could have put the entire Atlantic fleet out of action in one attack, and demanded a revamping of the national defense.²¹

When General Menoher, a former commander of the "Rainbow Division," asked to be relieved as Chief of Air Service unless the Secretary of War backed him up in disciplining Mitchell, he was advised to take another command if he could not handle Mitchell, and on September 17 he resigned. Mitchell, who initially offered to resign also, quickly changed his mind and agreed to stay on under the new Chief of Air Service, Major General Mason M. Patrick. The latter had been prevailed upon by General Pershing to put the air force in order just as he had the Air Service, AEF in May 1918.²² A generally satisfactory relationship was established between Mitchell and Patrick.²³

In 1921 Mitchell's first major book, Our Air Force--Keystone of National Defense, was published. Aimed mainly at evoking public support for the claims of air power, it was also directed at persuading and convincing the military elite of the validity of a new concept of defense based on the leading role of the air weapon.

Mitchell's Concept of War

Mitchell's thought on war and the role of air power in

²¹Levine, 269-270.

²²Patrick, The United States in the Air, 73, 82-89; Levine, 269-273.

²³Patrick, 89, 178.

war varied over the years and was not always consistent, even at a given time. Although his early acceptance of the theory of strategic bombing did not outlast the war, he nevertheless continued to make occasional references to the related theme of total war, an admittedly popular one, without giving it a specific tactical or strategic orientation. For example, in 1921, he wrote that the next war would be ruthless, one of "all against all," with the dominant air power stopping at nothing to win a decision, one that might, he inferred, come quickly.²⁴ Yet, his major contributions to military thought in the very same year indicated almost a contrary position.

In point of fact Mitchell continued for several years to see war in the relatively limited terms of direct combat between armed adversaries. Undoubtedly he was influenced to some degree by the fame gained by the ground forces--which had decided the issue--and the official endorsement of the view that tactical support of surface forces, centered around observation, was the true role of air power. At the same time there was also a growing popular antipathy toward mass bombardment, and this view was supported in some of the highest military and civil echelons of government, Secretary of War Baker being a prominent example.²⁵ Officially, the Joint Board in its statement of mission for the air arm rejected any strategic role for it in December 1919.²⁶

²⁴Mitchell, Our Air Force--Keystone of National Defense (New York: Putnam, 1921), xxi-xxiv.

²⁵USAF Historical Studies, No. 89, 14-15.

²⁶Typescript, WD, ODAS, "Notes on the Functions of the Air

In Mitchell's writings during the early 1920's the predominant thought was that war was a struggle between armed forces, not between peoples. In January 1921 he asserted that the ultimate answer in war was determined by man-to-man combat and that the air force supplemented the army.²⁷ In the spring of the same year he wrote that an air force would work its will initially through joint operations with the army and later through occupation.²⁸ In 1922 Mitchell stated emphatically that "defeat of the enemy forces is the purpose of the conduct of war."²⁹

Mitchell's Concept of Air Power Employment

The Role of Pursuit Aviation.---Harking back to the words of Trenchard, Mitchell started from the premise that "there is no defense against an air force except an air force." Because of its speed and mobility an air force could not be adversely affected by surface weapons such as antiaircraft artillery.³⁰ At the same time the offensive power of the war plane, constantly being augmented by advances in engineering and chemistry,

Service," Feb. 10, 1920, in NA, RG 18, CDF 321.9, Box 478; cf. "Tactical Application of Military Aeronautics" (1919). Hereafter cited as "Tactical Application."

²⁷Mitchell, Statement on Needs of Air Service, Jan. 4, 1921, 31, in USAFHA 248.211-16E91.

²⁸Typescript, "Air Supremacy and What It Would Mean," Mar. 31, 1921, p. 2, Mitchell Papers, Box 24.

²⁹Mitchell, Notes on the Multi-Motored Bombardment Group, n.p., ca. 1922, 108.

³⁰Our Air Force, 14; Statement on Needs of Air Service, Jan. 4, 1921, 3.

was such that no surface operations could proceed effectively without assurance of control of the air.³¹ Upon this basis he proceeded to erect the structure of his air doctrine.

Accordingly, Mitchell declared, the doctrine of aviation must be "to find out where the enemy air force is, to concentrate rapidly on that point with pursuit aviation, to attack and destroy the hostile aviation, and then to attack the enemy organizations, whether on the land or on the sea, with attack and bombardment units." Provided that it had obtained control of the air, the air force could then very largely select "the time, the place, and the method of attack" that it desired to use against a navy or an army. The problem was to gain mastery of the sky. Mitchell was emphatic in his conviction that this could be gained "in no other way" than by the air battle of pursuit aviation.³² [Italics added] Its mission was nothing less than to achieve such control. By means of enveloping and attacking other aircraft--functions which they alone could perform--the fighter planes were destined to rule the sky.³³ He wrote:

Nothing can resist the attack of pursuit aviation properly handled. . . . The only aviation capable of challenging the supremacy of pursuit aviation is other pursuit aviation. A large lumbering airplane or collection of airplanes, no matter how well armed, cannot

³¹"Air Supremacy and What It Would Mean," 5, 19.

³²Typecript, "Mission of an Air Force," n.d., ca. 1921, pp. 2-3, Mitchell Papers, Box 25.

³³Ibid., 3; "Tactical Application," 11.

resist the surrounding attack of pursuit aviation.³⁴

Necessarily, then, the other components of an air force were dependent upon support from the fighters. Mitchell asserted:

All other branches of military aeronautics are helpless without an adequate, strong, well-trained and well-equipped pursuit aviation. . . . All kinds of bombardment aviation are completely at the mercy of pursuit aviation. Observation aviation cannot act without its protection, while the heavily armored attack airplanes, no matter how well protected, will be shot down without the assistance of pursuit aviation.³⁵

It logically followed that pursuit aviation constituted "the basis of an air force." When questioned in Congress as to the types of airplanes most needed, Mitchell answered that "of course, the pursuit ship is the most essential always. . . . And the next is the bombardment ship."³⁶ Of the three branches of the air force, defined as the tactical organization used to attack an enemy, Mitchell therefore put pursuit first, bombardment second, and attack third. If pursuit were successful, it could "communicate back to bring up attack and bombardment aviation, and direct these to the objectives." Because of its primacy in aerial warfare, the pursuit arm would have to be "equipped with the fastest, the most maneuverable, and the best armed airplanes possible to devise," and the future would see even greater development of that arm, particularly in speed and

³⁴Our Air Force, 46.

³⁵Ibid., 53.

³⁶Statement on Needs of Air Service, Jan. 4, 1921, 3, 25.

gun power.³⁷

The Role of Bombardment and Attack Aviation.---In 1921 Mitchell viewed bombardment as an almost entirely tactical function. Reflecting upon his war experience, he regarded bombing mainly as a means of preventing the enemy from bringing up supplies and reinforcements to the field of battle in time to have an influence on the decision. Strategic bombing was seemingly incidental. "The effect of interfering by air bombardment with the delivering of supplies along lines of communication was very great, and also of interfering with the manufacture of military equipment."³⁸ [Italics added]

To achieve important results, however, tactical or day bombers required support from a screen of friendly fighters. They risked destruction if they attempted to rely for protection solely upon the fire action of their machine guns. Mitchell wrote:

Many thought for a long time that bombardment aviation could protect itself by its own fire in a manner similar to that employed by battleships on the water. . . . Theoretically, fire is the best protection. . . . Of more importance, however, is the fact that battleships act only in one dimension, that is, on top of the water. Bombardment airplanes . . . cannot resist . . . rapid attack . . . in three dimensions.

Moreover, to avoid anti-aircraft fire, tactical bombers were forced to climb to altitudes of 12,000 to 15,000 feet, thereby

³⁷Our Air Force, 14, 46; "Tactical Application," 2; Typescript, "Air Power over the Water," Mar. 15, 1921, 3, Mitchell Papers, Box 24.

³⁸Our Air Force, 55-56.

decreasing normal bomb loads to 300-500 pounds while compounding the difficulty of hitting the target. For these reasons, among others, it was essential that they assume compact formation patterns affording both a measure of protection to and from the objective and enhancing the chances of striking the target by achieving a "sort of shot-gun effect."³⁹

As to night or strategic bombing, Mitchell confined his treatment of this doctrinal area largely to a simple enumeration of the advantages of night operations. As night bombers relied chiefly upon the darkness to mask themselves from the enemy, they needed little speed. Slower airplanes permitted lower fuel consumption or greater bombloads and radius of action. Moreover, greater accuracy was attainable at night as the aircraft "could fly low down, very close to their target."⁴⁰ It is probable that Mitchell's reticence reflected both his greater familiarity with and faith in daytime tactical operations--the only Air Service night bombing squadron was organized at war's end and quickly demobilized--and his disillusionment with strategic bombing.

As for attack aviation or light bombardment, the newest development in the tactical realm, Mitchell was enthusiastic. The main function of this component was to scatter or retard advancing columns of troops and to attack artillery, tanks,

³⁹Ibid., 50-58.

⁴⁰Ibid., 62-63.

machine gun nests, and hostile airdromes. Based upon his combat experience, Mitchell's tactics called for low-level, surprise attacks timed for execution while offensive pursuit patrols held off enemy air attempts to interfere.⁴¹ While he went to some length in describing the heavy armament, protective armor, and capabilities of attack planes, he did not make it clear that the Air Service had not yet developed an aircraft of this type and continued to rely upon pursuit and observation craft for light bombing and strafing functions, a practice that persisted for some time.

To those functions of aviation which serviced the army and navy directly Mitchell accorded relatively little significance, deeming them simply auxiliaries--visual reconnaissance, aerial photography, adjustment of artillery fire, infantry liaison, scouting and patrol.⁴²

Air Power Doctrine and National Policy

Since the entire success of the air force, including the bombers, hinged on the effectiveness of pursuit, it followed that "without an adequate and efficient pursuit aviation, a nation is helpless."⁴³ This doctrine led Mitchell to a consideration of what American military policy should be with respect to aviation. At a congressional hearing on January 4, 1921, he stated:

⁴¹Ibid., 69-70, 73.

⁴²Ibid., 76-85; see also "Tactical Application," 3-7.

⁴³Ibid., 54.

Our policy should be to keep as large an air force as we need for local defenses behind the Atlantic Coast, a similar force behind the Pacific Coast, and, between the two coasts, as much as is necessary so that, when it reinforces either coast, it will be sufficient to secure and maintain our ascendancy in the air. . . . What we need behind the Atlantic Coast is a brigade of 600 airplanes--60% pursuit, 20% attack, and 20% bombardment; behind the Pacific Coast a brigade of 600 airplanes similarly organized, and, throughout the country in general, an air division of two brigades of 1200 airplanes that can be shifted either way--or an offensive force of 2400 airplanes.⁴⁴

A united air force, Mitchell argued, was the most efficient way to assure the nation control of the air. It was imperative that all air forces be concentrated under a single central jurisdiction. Fighting in the air, he insisted, was the same everywhere--land or sea, the only difference being the type of airdrome used. Inter-service competition should not be allowed to break up the unity, coherence, and mass required for effective war operations.⁴⁵ It was essential therefore to avoid division of the nation's air power between the services, except that auxiliaries such as observation aviation would be assigned to the navy and army on a permanent basis by units, supplied from a large, central "reservoir of planes and personnel."⁴⁶

⁴⁴Statement on Needs of Air Service, Jan. 4, 1921, 25-26.

⁴⁵Mitchell Testimony, General Board of the Navy, Apr. 3, 1919, 23 in Typescript, WD, OCAS, Mar. 2, 1920, Mitchell Papers, Box 32.

⁴⁶Mitchell Testimony, Hearings, Senate Committee on Military Appropriations, Jun. 16, 1919, 56-57 in Typescript, WD, OCAS, Mar. 2, 1920, Mitchell Papers, Box 32.

Moreover, Mitchell contended that responsibility for air defense should not be divided at the shore line between the naval and military provinces of air power, and therefore advocated creation of a separate but unified air force under a department of aeronautics comparable to the British Air Ministry. Unless the blurring of rival jurisdictions at the shore line were corrected, he predicted that "we are going to catch it all over the country in a way that has never been done before."⁴⁷ The only way to handle air power was to unify it all.

Wherever air power could be applied, Mitchell was firmly convinced that no naval craft could survive.⁴⁸ Under his scheme of national defense, centrally directed air force units deployed along the coasts would be responsible for detecting and repelling any hostile fleet that ventured within range. They would establish air control over the armada and proceed with its demolition.⁴⁹

By 1921 Mitchell's air power doctrine required not only substantial numbers of shore-based aircraft, apportioned on a 60-20-20 basis among pursuit, bombardment, and attack aviation, but also 20 airplane carriers which were to be provided for planes operating over the water. "The whole thing should be known as the Air Force." This composite military air organiza-

⁴⁷Statement on Needs of Air Service, Jan. 4, 1921, 20.

⁴⁸Typescript, "Has Air Power Made the Battleship Obsolete?" ca. 1921, 1, 53, Mitchell Papers, Box 32.

⁴⁹"Tactical Application," 11.

tion would constitute the first division of his proposed department of aeronautics, the other two being those of supply and civil aeronautics. Thus the air force would directly control all combat aircraft, including those on carrier airdromes. The navy would depend upon the air force for aerial protection of its fleet. Of course this scheme never was accepted at naval quarters. After 1921 Mitchell was to place less and less faith in the aircraft carrier and to rely increasingly upon the powerful aid of his long-range aerial artillery to drive the navy from coastal defense out to the high seas beyond the range of aircraft. He was certain that future control of the seas would rest upon the outcome of air battles between the opposing pursuit forces, and that a successful issue depended upon concentration of the nation's combat aviation at the decisive point.⁵⁰ Certainly, with the size of forces then existing and the demand for economy in government as well as for disarmament, Mitchell's fears were not without foundation.

In any event, Mitchell's bombing tests of the summer of 1921, though executed generally at altitudes of only a few thousand feet, demonstrated beyond any doubt the enormous striking power of land-based aircraft against the most heavily armored ships. Further tests made by the Air Service in September sank the Alabama.⁵¹ Truly air power, if not the air force, was rapidly

⁵⁰Our Air Force, 161-62, 201-203.

⁵¹AFP 210-1-1, 78.

becoming America's first line of national defense. Mitchell's thought, however, was not limited solely to defense of continental waters and territories, however much he felt it necessary to appease isolationist sentiment.

Transoceanic Employment of Air Forces.--By 1920, apparently, Mitchell already contemplated in adumbrated form the possibility of an overseas offensive campaign based on air power. He declared that a nation conducting an offensive war and having control of the air should throw its whole air force "across the sea to attack the enemy air service in the hostile country and, the ascendancy having been gained, . . . attack his formations on the ground."⁵² In the same year he thought he had solved the problem of logistics for such a campaign by means of an airship shuttle. The answer lay in the use of large rigid airships of the Zeppelin type, each carrying 10 tons of supplies--an amount he believed sufficient to keep many airplanes in operation for one day.⁵³ Mitchell therefore believed it to be "perfectly practicable to keep up the train for the heavier-than-air units by means of dirigibles," and thought that in this way the air

⁵²Typescript, "Notes on General Policy of Air Service," 1, Mitchell Papers, Box 32, 1919-1920 Organization Folder; see also "Notes on Development of an Aeronautical Policy for the United States," loc. cit., for a similar statement.

⁵³Typescript, WD, ODAS, "Notes on the Functions of the Air Service," Feb. 10, 1920, in NA, RG 18, CDF 321.9. Though not signed by Mitchell, these notes were undoubtedly prepared by him owing to the exact or identical wording, in many places, of this paper and his lecture, "Tactical Application of Military Aeronautics."

service would be independent of communications, either on the land or on the water, "making it possible to carry on an extended campaign through the air alone."⁵⁴ (No such offensive mission for air power was prescribed by the Joint Board in its statement of tasks for army aircraft, as approved by the Secretaries of War and Navy December 29 and 27, 1919, respectively.) Even in his book, Our Air Force, in which he carefully noted the unique, self-sustaining nature of the American economy and developed a predominantly isolationist plan of national defense, Mitchell observed:

In case an offensive war is necessary, the air organizations will fly across the water to their destinations. . . . They will be able to force a landing in a hostile country through their own power, protect it, and transport enough personnel there to defend the position, and maintain their own aircraft.⁵⁵

This prediction occupied less than one page of the book; such overseas operations were obviously highly fanciful when related to the technological possibilities of aircraft at that time. Nonetheless, it was indicative of a line of thought that he was to develop much further in later years.

Whether for defense of the continent or for the conduct of offensive operations overseas, Mitchell was already convinced that air forces were the very keystone in the arch of national security, and that the national defense would therefore have to be reorganized around air power.

⁵⁴Ibid., 4.

⁵⁵Our Air Force, 221.

During the same year, 1921, similar proposals for re-organization of national defense based upon the primacy of the air arm were being advanced by Mitchell's contemporary, the Italian soldier and air theorist, General Giulio Douhet. Strikingly different, however, were his conceptions of how that power should be used.

CHAPTER III

GIULIO DOUHET AND HIS AIR POWER DOCTRINE

1921

In 1909 an Italian field artillery officer wrote:

To those of us who have only armies and navies, it must seem strange that the sky is about to become another battlefield no less important than the battlefields on land and sea. But from now on we had better get accustomed to this idea and prepare ourselves for the new conflict to come. . . . The struggle for the command of the air will be bitter. . . . The army and navy should not then see in the air-plane merely an auxiliary arm of limited usefulness. They should rather see in the plane a third brother, younger of course, of the powerful family of War.¹ [Italics added]

Who was this remarkable army officer who even at the dawn of the age of flight could perceive so clearly the implications of warfare in the air and the necessity of commanding that realm?

Giulio Douhet was born in 1869 in Caserta, Italy, though his people were from the Piedmont.² Like Mitchell, he entered the army as a youth. Significantly, however, Douhet intended from the first to become a professional soldier and received his

¹Maj. G. Douhet, "Il problemi del' ario navigazione," La Preparazione, Rome, 1910, cited in G. Douhet, The Command of the Air, trans. Dino Ferrari (New York: Coward-McCann, 1942), 27-28.

²Gen. Celso Ranieri, "Biographical Notes," in G. Douhet, The Command of the Air, trans. Sheila Fischer (Rome: Revista Aeronautica, 1958), xi. Unless otherwise noted, all biographical references are to this source.

second lieutenant's commission upon graduation from the artillery academy, where he ranked first in his class. Showing such marked intellectual ability, Douhet was soon assigned to attend an advanced course in electrotechnics at the Turin Polytechnic. There his study, "Calculations of Rotating Field Engines," was later adopted for use as a textbook. His subsequent work at the School of Warfare was likewise brilliant. As an officer representing the General Staff, Douhet was next assigned to various army units and headquarters. His continued keen interest in technical developments led him in 1904 to write a pamphlet, "Military Heavy Automobilmism," and a study, "Outlines of Electrotechnics." Not long afterwards he read a paper at the Sorbonne dealing with the separation of oxygen and hydrogen from air. Displaying a keen interest in technical matters and motorized transport, Douhet, now a major, was made commander of the first motorcycle battalion formed in Italy.

Meanwhile, Douhet's unique faculty of conceptualization of the future became evident. As early as 1909, upon the occasion of Wilbur Wright's visit to Rome³ to start an Italian pilot training program, Douhet anticipated the formation of a military air force and an air ministry as well as the need to command the air. Two years later, he formally proposed to the Army Chief of Staff the establishment of "a competent organ" to deal with all matters concerning the application of air power. In recognition of his remarkable aptitude for aeronautics,

³AFP 210-1-1, 61.

Douhet was appointed in 1912 to be commander of the air battalion in Turin. There the already middle-aged officer threw himself into his new task with such fervor and dedication that "he soon came into conflict with the cautious and conventional mentality of his environment." During the next two years, despite the General Staff's repeated rebuffs of his proposals for aircraft construction, he assumed personal and financial responsibility for ordering the battalion workshop to proceed with the construction of Italy's first three-engined plane, the Caproni 300. Though this aircraft was the prototype of the famous Caproni bombers of World War I--technically adjudged the best available in the opinion of the Bolling mission of 1917,⁴ Lieutenant Colonel Douhet was removed by his superiors from the field of aviation and reassigned to the ground forces just before the outbreak of war because of his "dynamic tendencies" and "strange initiatives."⁵

With Italy's entry into the war in late May 1915 against Austria-Hungary, Douhet was assigned as Chief of Staff of an important unit in the mountainous Carnatic zone on the frontier. As early as July 1915 he recognized the enormous difficulties of a successful ground offensive in this area and officially proposed the creation of a force of 500 Caproni bombers of 450 horsepower and its employment against "the most vital, most

⁴Holley, 55.

⁵Ranieri, xii.

vulnerable and least protected" points in Austria.⁶ This was probably the earliest enunciation of the strategic air bombardment idea. However, almost all of Italy's combat effort during the first two years of the war was devoted to the fighting of eleven successive battles on the Isonzo, a river near the northeastern border. The first Italian attempt to force the 60-mile wide front on the Isonzo lasted from June 29 to July 7, 1915. At the end of the eleventh battle of the Isonzo in September 1917, the Italians were not even half-way to Trieste--only 30 miles inside the Austrian border--and had lost nearly a million men. These events forced one cabinet out of power and led to the court-martial and imprisonment of Colonel Douhet for venturing to criticize so sharply the employment of Italian forces. For while he was Chief of Staff in Carnia in 1916 he wrote a memorandum to a cabinet member who had previously asked him for advice on military matters. In it Douhet severely criticized the conduct of military operations and the misuse of aviation. When the matter came to the attention of high military authorities, the latter deemed it a violation of security regulations and insisted upon a court-martial. Sentenced to a year's imprisonment, Douhet bore the bitter burden with fortitude. In 1917 he composed and dispatched from his prison cell in Forte di Fenestrelle a memorandum to the minister of war in which he proposed that an inter-allied air force be formed with the object of gaining

⁶Quoted in Ranieri, xii, xiii.

command of the air and executing decisive mass attacks against Austria. Though his conception of employment was not realized, it is only fair to point out that by 1917 Italy alone of all the Allied powers was carrying out large-scale strategic air operations of any consequence, using up to 250 Capronis in a single raid,⁷ and that, in the opinion of a respected military historian, "air power had been spectacularly successful" on the relatively short, deadlocked Italian front. Both sides were very active in the air; the Austrians, for example, dropped 80 tons of bombs on and nearly destroyed the small Italian city of Treviso--more than the Germans dropped on London, while the Italians repeatedly bombed the Austrian naval base at Pola. These were among the conditions which served to evoke the air power doctrine of Douhet, whom Theodore Ropp calls "the greatest military writer of the Long Armistice" (1919-1939).⁸

After the Italian disaster at Caporetto in 1917 the entire question of the 1916 memorandum which had led to his downfall was re-examined, and Douhet, released from prison just before that time, was exonerated. It was found that he had not only accurately predicted the disaster but had also proposed a counter-strategy which might have prevented it.⁹ Early in 1918 he became Director of Technical Services in the Aeronautical

⁷Holley, 55.

⁸Theodore Ropp, War in the Modern World (Chapel Hill: Duke University Press, 1959), 230, 272.

⁹Smith, U. S. Military Doctrine, 139.

Bureau. In only a few months conflict broke out between the ideas which sprang like sparks from his keen intelligence and fertile imagination, and bureaucratic resistance to the intrusion of innovations dealing with the new air weapon. As a result, he resigned from the bureau,¹⁰ giving as his reason:

I believe that the nation has the right to demand that its resources be exploited in the best possible manner and therefore I cannot pretend to remain indifferent when I am convinced that such is not the case.¹¹

Clearly Douhet was, in the words of his biographer, "an exceptional personality, with unshakable convictions, . . . and a dauntless conscience struggling, above all, for the affirmation of a truth--which did not yet appear as such--but which he considered as the very pivot of his country's defense: air power."¹²

In 1921 Douhet was given a post-service promotion to the rank of general. Not long after the Fascist coup, he was appointed commissioner of aviation.¹³ Again the familiar pattern appeared, and Douhet retired once more--this time permanently--to devote the remainder of his life to the development and refinement of his military theories.

¹⁰Ranieri, xiii-xiv. Ranieri is not clear on this point, but one can infer from the absence of subsequent army assignments that Douhet had resigned from or had left the service either in June or upon the conclusion of the Armistice; Ropp, 273, asserts that Douhet retired in 1921.

¹¹Quoted in Ranieri, xiv.

¹²Ibid.

¹³Ibid.; Ropp, 273.

His first major work, The Command of the Air, was published by the Air Ministry in 1921. It aroused so much controversy that Douhet prepared further studies: in 1923, "Difesa Nazionale," and in 1926, a revision of The Command of the Air, published, however, in 1927. In the former work he outlined a unified organization of national defense, which later was established and included a separate air arm. In 1928 he published a monograph, The Probable Aspects of the War of the Future; in 1929, Recapitulation or Summing Up; and in 1930, "The War of 19--," which appeared in its entirety in Revista Aeronautica, in March 1930, one month after his death. Thus Douhet's major publications occurred in the last decade of his life.

Like Mahan and Clausewitz, Douhet formulated ideas which were already in the air. That was one reason for his influence, though his works, like those of Clausewitz and Du Picq, were to become more famous after their author's death than during his lifetime.¹⁴

Mitchell and Douhet Compared

From the foregoing account, it is clear that there were striking parallels between the largely contemporary lives of Mitchell and Douhet: both came from well-to-do, established families; both entered upon a military career early in life and rose rapidly, largely through sheer ability and intensive effort; both displayed keen interest in scientific and technical matters, and sought with lively imagination to apply the new technology to military uses, first in motorized transport and

¹⁴Ropp, 275.

and communications, later in air transport and air weapon systems; both were acutely nationalistic, accustomed to the tradition of public service, and dedicated to modernizing the country's national defenses; both saw air power as the key to national defense; and both were willing to pay any price, including court-martial, in maintaining their radical conceptions of the truth as they saw it.

Nonetheless, important differences between Mitchell and Douhet were also clearly discernible, some of which affected the course, direction, and outcome of their respective battles for the recognition of air power and its proper employment. Probably the most significant difference was that in temperament. Where Mitchell was inclined to be direct, positive, active, outspoken, impetuous, insubordinate, and increasingly resentful of what he considered to be the undue conservatism of the military hierarchy, Douhet was characteristically thoughtful, reflective, detached, deliberate, logical, and systematic in his thinking, and convinced of the superiority of reason over argumentation. Thus, while Mitchell remained constantly in the arena, fighting to win recognition for the cause of air power, finally going so far as to take the fight to the people and the Congress, Douhet, while clearly seeing and facing the issues, stated his case in incontrovertible prose; once the war was over, he chose to resign and pursue the battle on a purely intellectual and literary plane. But Mitchell continued in active service, for flying was his very life's blood, and activity, restlessness, and boundless

energy characterized his physical being; but the combination of the obligations of the military service, on the one hand, and those of popular appeals to the public on the other--which appeared at times seriously to question and undermine the hierarchy in Washington--proved impossible of successful reconciliation. Time and again Mitchell, stridently critical, cast caution to the winds, only to be saved by his friends and gotten out of Washington in time, first in 1921, and again in 1923-24. For reasons which are not entirely clear, Mitchell's recriminations in 1924 became more intense, and in 1924-25 he waged an all-out, no-holds-barred contest against the military departments in Washington. Never, apparently, did he face squarely, coolly, and logically the inevitable consequences of the dual and contradictory course that he attempted to pursue, whereas Douhet clearly perceived the impossibility of continuing to serve his country in a given official capacity once a fundamental clash of principles was involved in the serious matter of national defense. Truly Douhet came to believe more in the power of the pen than the sword. While Mitchell's writings were often polemical in nature, Douhet's were characterized by the presence of reason and logic. "It is not for me," he wrote, "nor for General Bastico nor for anyone else, to assign the predominant role in war to a particular arm. Indeed, if any one arm has an overshadowing importance, it is not by any human desire, but because the discoverable facts so indicate. If the aerochemical-arm is to be decisive in future war, it will be not my doing, and I shall

deserve neither praise nor blame."¹⁵

Douhet's Concept of War: The Character of War

Douhet insisted that any doctrine of war, to be valid, must adhere to certain criteria: the realities of war obtaining at the time and the peculiar characteristics of the nation it refers to.¹⁶ Accordingly, in his first major treatise, which presented for the first time a complete theory of air power, he probed into the question of war in modern society. War Douhet defined as "a conflict between two wills basically opposed, one to the other," and saw the object of war, then, as a nation's imposition of its will on another through means of force. Modern conflict was between nations, not military forces. In the past force was expressed through organized surface units, war being necessarily restricted to the surface of the earth. Thus one had to break through the fortified defenses of the other country or overcome the army defending the homeland behind it. Normally, then, the battlefield was strictly delimited and the status of the military and civilian elements sharply defined on a functional basis. People could go about their work undisturbed and safe behind the strong shield of the nation's surface forces and fortifications. Under such conditions the army or navy came to be seen as the true objective. These conditions prevailed as long as it was impossible to invade the enemy's territory without

¹⁵Quoted in Warner, 498; cf. Command of the Air (Coward-McCann ed.), 251-53.

¹⁶Command of the Air (Coward-McCann ed.), 263.

first breaking through his defensive line. Now, however, air power made it possible to go far behind the fortified lines of defense without first breaking through them. In future wars, therefore, neither army nor navy could assure the nation of victory, for they were no longer capable of guaranteeing the security of the homeland. As the air arm waxed in strength, the relative effectiveness of surface weapons in national defense waned. Douhet did not, however, minimize the absolute power of surface arms, particularly on the defensive.¹⁷

Resistance on the Ground.--Primarily because revolutionary developments in rapid fire weapons strongly favored the defensive over the offensive, the World War had been unduly prolonged. Future technological advance would, Douhet believed, continue to favor the defensive on the ground, "since the nature of development is dynamic, not static." Hence, on land, future conflicts would display the same general characteristics as the First World War. In this mistaken conviction was rooted one of Douhet's chief strategic maxims, defense or resistance on land. Here the military model he held up for emulation was that of the Germans, who long used the defensive to advantage, thinning out their extended lines on several fronts, in order to mass for the offensive at single, critical points.¹⁸

Concepts Governing Employment of Air Weapon Systems

Offensive Air Operations.--Since the key to victory lay

¹⁷Command of the Air (Faber ed.), 13-14. Subsequent citations are to this edition, unless otherwise noted.

¹⁸Ibid., 15-18.

in the offensive, the problem in an age which favored the defense in conventional warfare was how to obtain and apply the necessary preponderance of force entailed. To win it was necessary to gain and to hold the initiative, to be able to plan and execute blows at points of one's own choosing, while the enemy, thrown upon the defensive, had to spread his forces thin in order everywhere to be prepared for the main blow. Ready to hand lay an instrument almost perfectly suited to this need--the airplane--a weapon independent of surface operations, operating at incomparable speed, and capable of dealing sudden and "mortal blows at the heart of the enemy." Truly air power was the offensive weapon par excellence, for it constituted

a threat to all points within its radius of action, its units operating from their separate bases and converging in mass for the attack on the designated target faster than any other means so far known.¹⁹

Thus Douhet was led to conclude that a nation's ideal military strategy was to concentrate its strength for offensives in the air while its ground force assumed the defensive, resisting the enemy on land. From these two cardinal tenets he never departed. They constituted the very basis of his strategic thought.²⁰

The Airplane as a Defensive Weapon.--Superlatively adapted as the air weapon was to offensive purposes, Douhet--like Trenchard--thought it a serious misconception to believe

¹⁹Ibid., 18-19.

²⁰Ibid., 19; Recapitulation (1929) in Command of the Air (Coward-McCann ed.), 283.

that it could be used effectively as a protective shield. To use air power defensively was most uneconomical and utterly impracticable. For example, to defend successfully twenty bases against attack from a given enemy force in the air, he judged that it would be necessary to station at each of the twenty bases a force equal or superior to the size of the attacking force.²¹ Lamenting the prodigal waste of energy, material, and resources entailed by the basically defensive methods of air warfare characteristic of the First World War, Douhet insisted that the only practical way to prevent the enemy from attacking one with his air force was to destroy his air power before he had a chance to strike. Experience had demonstrated that all the means of defense--antiaircraft guns and pursuit planes--were inadequate, and that "every time an aerial offensive was carried out resolutely, it accomplished its purpose."²² Instead he placed his chief reliance upon the bombers.

Principles of Aerial Bombardment.--The basis of Douhet's new model air force was the bomber, which coupled a delivery system, the air vehicle, with one or more agents, incendiaries, gas, and explosives. These would be apportioned as the situation required. In general, Douhet suggested the use of explosives to prevent fire-fighters from extinguishing the flames. Attacks of this kind would include the use of gas to permeate the target over a period of several hours or a few days. This effect could

²¹Ibid., 20-21.

²²Ibid.

be obtained either by applying a particular type of gas or by alternating standard gas bombs with delayed-action fuses. He concluded that it was "easy to see how the use of this method, even with limited supplies of explosives and incendiary bombs, could completely wreck large areas of population and their transit lines during crucial periods of time when such action might prove strategically invaluable." Hence proper objectives for bombing were always large in size. Small targets he expressly eliminated from consideration. Though Douhet never thought aerial bombardment would attain a high degree of accuracy, he considered this "unimportant because such accuracy is unnecessary." The truly important principle which must guide all bombing operations was the necessity for complete destruction: "The objective must be destroyed completely in one attack, making further attacks on the same target unnecessary." Through complete destruction great morale and physical effects could be achieved, the repercussions of which might be tremendous.²³

To achieve such destruction, Douhet calculated that, based on contemporary practice, to destroy a surface 500 meters in diameter, ten tons of material would be required; that this amount in turn required an equal weight of metal casing or shell, hence 20 tons; that, figuring two tons of bombs per airplane, ten such aircraft could accomplish the necessary destruction. Thus he arrived at his concept of what he called "the basic unit of

²³Ibid., 11-12; 22; 39.

power needed for effective bombing operations."²⁴ If one accepted the magnitude of destructiveness posited for the aerial weapon by Douhet through the employment of his 10-plane units of bombardment, it followed that this system was indeed a most efficient way to achieve a preponderance of power for the offensive.

With 1,000 bombers of the type described--a type he claimed to be in actual use--100 operating units or squadrons could be established, and, if only half of these were operational, an air force could, with proper employment, destroy daily fifty centers of 500 meters diameter. Such offensive power was incomparably greater than any other offensive means known. Having identified a weapon with overwhelmingly potent offensive qualities, Douhet's next problem involved questions of its proper employment.

Command of the Air.--Douhet strongly recommended--as a general rule, though not an invariable one--that the enemy air force be singled out as the first objective for attack.²⁵ Success required correct employment of the "Independent Air Force," as he chose to call the air force constituted along his doctrinal lines. However, he argued, this did not mean aerial battle primarily or even necessarily:

But . . . it is not enough to shoot down all birds in flight if you want to wipe out the species; there remain the eggs and the nests. The most effective method would be to destroy the eggs and the nests systematically. . . . Similarly, destroying an enemy's aeroplanes by seeking them out in the air is, while not entirely useless, the least

²⁴Ibid., 23.

²⁵Ibid., 34, 46; Coward-McCann ed. 50-51, 246.

effective method. A much better way is to destroy his airports, supply bases, and centers of production. In the air his planes may escape; but, like the birds whose nests and eggs have been destroyed those planes which were still out would have no bases at which to alight when they return. Therefore, the best means of destroying such objectives is by aerial bombardment.²⁶

Bombardment would always succeed; nothing could stop a determined, massed bomber attack. For its protection it would depend in part upon its defensive firepower, but primarily upon a powerfully constituted combat escort. Its combat planes would be entirely different from any pursuit aviation known. Unlike contemporary pursuit craft, his combat planes would not be designed to attain faster and ever faster speeds, but would be slow; they would be armored and extremely heavily armed--they would in short have superior firepower--the factor he deemed most critical in any combat. There was no theoretical maximum to the over-all size and strength of the bombing units in an air force; the more bombers, the greater the destructive offensive capacity of the Independent Air Force. On the other hand the number of combat planes protecting the bombers need be "only proportionately greater" than the enemy's combat strength.²⁷

Target Selection.--Once command of the air was gained, Douhet recommended, probably as a sop to antagonists, that the Independent Air Force cut off the enemy army and navy from their bases or sources of operation. Only then was it to undertake its main task, the strategic bombing of the enemy homeland,

²⁶Ibid., 34.

²⁷Ibid., 35.

spreading terror and havoc in the interior and breaking down the resistance of the people. However, he took care to qualify his statement on the ordering of these tasks and asserted that "as a matter of fact, the selection of objectives, the grouping of zones, and determining the order in which they are to be destroyed is the most difficult and delicate task in aerial warfare, constituting what may be defined as aerial strategy." Though objectives varied considerably in war, their priority would have to be determined by one's aim: "whether the command of the air, paralyzing the enemy's army and navy, or shattering the morale of the civilians behind the lines." Making this choice, commanders would of course be guided by many considerations of a military, political, social, and psychological nature. His own preference he clearly indicated: "I have always maintained that the essential purpose of an Air Force is to win command of the air by first wiping out the enemy's air forces." Quickly he added that such was not always the case and concluded by saying that "on this aspect of aerial warfare I do not believe it possible to lay down any specific rules. It will be enough to keep in mind the following basic principle . . . : inflict the greatest damage in the shortest possible time."²⁸

Principles of War.--If one were to compress the greatest damage within the shortest span of time it was imperative that the Independent Air Force operate in mass. This was "the first principle governing its operation." The greatest effects, moral

²⁸Ibid., 46-47.

and physical, could be obtained only if such aerial offensives were compressed in time and space. By adhering to the classical principle of mass in its operations, by cohering into compact formations, the Independent Air Force would be "able to force its way through aerial opposition successfully."²⁹

Its chances of success would be further enhanced by employing the traditional principle of surprise, a principle made almost mandatory by the maxim to inflict the greatest damage in the shortest amount of time. Surprise required the attack to be prepared "in complete secrecy and launched without forewarning the enemy." He thought that in this way "a really strong Independent Air Force . . . could inflict upon an unprepared enemy such grave damage as to bring about a complete collapse of his forces in a few days."³⁰

But even if a country were concerned only with self-defense, Douhet recommended that it build an Independent Air Force "capable of launching powerful offensives on land and sea," for the only possible defense was that of the offensive. Inevitably, then, "the fundamental concept governing aerial warfare is to be resigned to the damage the enemy may inflict upon us while utilizing every means at our disposal to inflict even heavier damage upon him."³¹

²⁹Ibid., 45-47.

³⁰Ibid.

³¹Ibid., 48-53.

Organization of Air Forces.--Deriding the conventional division of air power into military and naval components, Douhet insisted upon a more rational division of functions as the basis for allocation of air units. Any aerial means used by the army and navy to carry out or further their own actions in their specific fields of competence should be regarded as an integral part of their forces. Such auxiliaries, as he termed them, were to be budgeted for and directed by the surface forces. All other military air power was to enjoy separate and independent status. By definition, the Independent Air Force was designed to execute tasks in which land and naval units could not take part and which lay beyond their radius of action. Lastly, non-military or civil aviation merited support and encouragement from the state, particularly in all activities bearing directly upon national defense.³²

Whereas Mitchell conceived war between two countries to be essentially a tactical conflict between their armed forces--with the latter constituting therefore the primary objectives of aerial attack, Douhet viewed modern war as a clash of opposing peoples. He was sure that future conflicts would see air forces--properly organized and employed--gain command of the air and launch tremendous offensives against the people, wrecking their social and economic structure and thus disintegrating the national will to fight. Meanwhile, anticipating the use of a

³²Ibid., 52-63.

similar strategy by the enemy, patriots would be enjoined, not to rely on a vast but futile array of pursuit planes and anti-aircraft artillery, but to accept the offensive blows of the enemy, consoled by the thought that their Independent Air Force was dealing immensely more effective, telling, and decisive blows on the enemy. Mercifully, the end to this tragedy would not be long in coming. Victory would go to that side which had first anticipated the future form of war and had acted accordingly. Such a doctrine could not fail to appeal to all who sought an alternative to a protracted, grueling trench war. It appealed especially to American airmen who inwardly rebelled at the subservient, lackey-like figure that the United States Air Service cut in official military circles.

CHAPTER IV

THE AIR SERVICE TACTICAL SCHOOL AND ITS DOCTRINE, 1921-22

In recent times (1953) even so noted a scholar as Irving B. Holley, Jr., has maintained that the Air Service showed an "almost complete lack of interest" in doctrine during the 1920's.¹ In point of fact, almost the opposite was true, for an avid interest in doctrine characterized the more vocal elements of the air arm during the first postwar decade, particularly those officers assigned to instruct at the Air Service Tactical School (ASTS) at Langley Field, Virginia. It was primarily due to the efforts of those instructors that the institution gained a reputation in the 1930's as the leading center of military aviation doctrine in the United States.² What is not generally recognized is that the foundations of the doctrinal edifice were already securely laid during the preceding decade. That accomplishment was made possible largely but by no means entirely through extensive borrowing and adaptation of European ideas during the twenties.

¹Holley, Ideas and Weapons, 198.

²USAF Historical Studies, No. 89, 142.

The Question of the Relative Influence of Mitchell and Douhet

Mitchell rather than Douhet is generally credited with having exercised the greatest influence on the development of air doctrine in the Air Service (later Air Corps) Tactical School in the twenties and thirties, largely on the grounds that he was not only the leading exponent of air power in America but also the champion of the bomber and strategic air warfare. With all due respect to Mitchell, his sincerity, and his actual accomplishments, it is believed that this view cannot be successfully upheld any longer on the basis of all the objective evidence available. Samplings of the Mitchellian school of thought include the following:

If one person were to be singled out as having the most decided influence on the school, it would probably be Brigadier General William Mitchell. One of the first Americans to champion an independent air mission, Mitchell was also among the first to recognize bombardment as the basic arm of the air force.³

By 1926, 'Billy' Mitchell . . . planted the seeds of a new doctrine of war and air power. That doctrine in general terms was to become the American air doctrine for World War II.⁴

It is impossible to determine how much of Mitchell's thought is original and how much he owed to external influences.⁵

Douhet's book, The Command of the Air, might have provided some help to Mitchell, but it was not translated until 1933, and then it was produced only in manuscript form without publicity. Brigadier General Oscar Westover

³USAF Historical Studies, No. 100, 27.

⁴USAF Historical Studies, No. 89, 17.

⁵Ibid., 49-50.

and Captain George Kenney, both Air Corps officers, sponsored the translation by Miss Dorothy Benedict. This manuscript was studied in a somewhat clandestine way at the Air Corps Tactical School. The first public translation by Louis A. Sigaud did not appear before 1941, too late to have an effect on the strategy of the Second World War.⁶

In a similar but more positive vein Brigadier General Lawrence Kuter, formerly an instructor at the School, in 1942 unequivocally described Mitchell's influence there in these words:

Notes on the Multi-motored Bombardment Group . . . by Brigadier General William Mitchell . . . , 1922 . . . was the basis of instruction in the . . . School from its inception. . . . In 1932, the then Lieutenant K. N. Walker, who was one of General Mitchell's several very capable aides, became instructor in bombardment aviation at the . . . School. . . . Captain Robert Olds became responsible for extensive courses of bomber instruction. Between the two Mitchell's work has continued, expanded, augmented, and separated into its several components, including tactics and techniques of attack aviation, tactics and techniques of bombardment aviation, and the employment of air forces.⁷

An Air Force historian compared the relative influence of the two air leaders at the Air Corps Tactical School thusly:

Another person who could have had an influence on the Tactical School was the great Italian exponent of air power, Giulio Douhet. But it is doubtful that he had any profound influence on the thought at the school. . . . At ACTS only an imperfect translation was available and this not until 1933. By that time School concept had begun to take shape. . . . But Douhet was never really in vogue at the Tactical School. . . . General Lawrence F. Kuter and Major General S. Hansell, Jr., USAF retired, both have stated that Douhet had little influence at ACTS. Major General Donald Wilson, USAF retired, one of the leading theorists at Maxwell during the thirties, has said that

⁶Brig. Gen. D. O. Smith, United States Military Doctrine, (New York: Duell, Sloan, and Pearce, 1955), 144. General Smith is mistaken on a minor point: Sigaud did not translate Douhet's work but rather offered a convenient popular condensation.

⁷Quoted in USAF Historical Studies, No. 100, 27.

he had never read all of Douhet, and, in any case, disagreed with his idea of mass bombing. Actually, foreign influences seemed to have had little effect on the evolution of American air thought from the close of World War I until its final crystallization in the late thirties.⁸

The proponents of this school of thought, despite some shadings in opinion, maintain that Mitchell's influence predominated, and argue that whatever formative influence was exercised at the Air Tactical School must have been that of Mitchell, not Douhet, largely by virtue of the fact that since there was so much resemblance between the concepts of the two air prophets, Douhet's works could not have had a determining influence because they were not translated into English until 1933, by which time modern Air Corps doctrine had already assumed its familiar modern form.

However, it is submitted that careful comparison and analysis of doctrinal data available in the written materials prepared by Mitchell, Douhet, and ACTS show beyond any reasonable doubt that Douhet's influence, not Mitchell's, was paramount in the development of doctrine at the Air Corps Tactical School

⁸Ibid.; cf. Edward Warner, "Mitchell, Douhet, and De Seversky," in Makers of Modern Strategy. General H. H. Arnold goes further in giving credit to Douhet, but even he never realized the extent of Douhet's influence. He thought that "Douhet's theory came out in 1933." He also thought that "it came very close to conforming to the theory we had worked out from our bombing and our operations and maneuvers." (Italics added.) Global Mission, 131. Joe G. Taylor ("The Contribution of the Air Corps Tactical School to the Development of Aviation Tactics before World War II," a paper delivered at meeting, Southern Historical Assoc., Little Rock, Ark., Nov. 12, 1964) concurs in the standard appraisal.

as early as the mid-twenties and continued to dominate that development during the thirties, and that as a consequence American air doctrine was predicated upon and shaped by essentially Douhetian principles. It is believed, moreover, that the findings of this study shed much light on the related vexing question of the interpersonal influence of Mitchell and Douhet and demonstrate the latter's overwhelming dominance of thought.

Organization and Early Academic Status

Organized at Langley Field in the summer of 1920 by Major Thomas DeWitt Milling, former Chief of Air Service, First Army, AEF, the Air Service Tactical School opened inauspiciously enough late in the autumn of that year. There were but eight students. Among them were in fact several officers assigned to operate the school, including Milling, the Officer-in-Charge, and two of his instructors.⁹ The staff taught courses in combined aerial tactics and staff duties.¹⁰

However, classes were suspended in the spring of 1921 in order to participate in the planning, preparation, and conduct of the bombing tests of July and September 1921.¹¹ Major Milling, who had won Mitchell's confidence in France, served as his chief

⁹USAF Historical Studies, No. 100, 6-7.

¹⁰Semiannual Report, Field Officers Service School, Jan. 1, 1921-June 30, 1921, in USAF Historical Archives, 245.111. The report was submitted by a Major Hensley, who as Commanding Officer of the field was ipso facto Commandant of the school. This practice continued throughout the history of the school.

¹¹Annual Report, ASTS, 1922-23, 2.

of staff in the First Provisional Air Brigade, organized by General Mitchell at Langley Field expressly for the bombing exercises. The school's first spring and summer were therefore almost entirely devoted to the task set by Mitchell--bringing to Langley from all over the country the most skilled men in the Air Service, organizing them, and training them intensively for the tests of July and September.¹² This experience was not to be repeated until the test exercises of 1923.

During these early years the school's academic caliber was adversely affected by rapid turnover of instructor personnel--in the second year only three were left of the original contingent; varying lengths of assignment for instructors; an excessively inflated curriculum which soon included technical as well as tactical and administrative subjects; and the lack of a firm doctrinal base. The administrative deficiencies were noted by the Chief of Air Service, who, in a letter to the Commandant on August 27, 1924, approved in principle recommendations which had earlier been made by the school, including the following: (1) instructors were to be drawn from graduates of the Air Tactical School or the Army's General Services School; (2) officers when assigned were to report sometime prior to the departure of their predecessors; (3) officers so assigned were to be allowed to remain for extended tours

¹²Levine, 224-25; Report of the First Provisional Air Brigade, Langley Field, Va., Administrative Order No. 1, 21 Sept. 1921 (accompanying Operation Circulars 3 & 4, 1st Prov. Air Brigade), by command of Brig. Gen. Mitchell, signed T. D. Milling, Chief of Staff, in USAFHA 248.222-70 (1921).

of duty; (4) classes were to be held to a maximum of 25 including foreign students;¹³ and (5) the Commandant was to make every effort to prevent outside duties interfering with the scheduled conduct of the school.¹⁴ The most demanding and pressing of its problems was to be less easily solved--the interrelated one of doctrine, instruction, and textbook preparation.

Though the original instructional program had been approved by the War Department as laid down in 1920,¹⁵ Major Milling made the interesting observation in his report for the 1922-23 year that the new school was originating "most of its doctrines and theory."¹⁶ Yet, at the same time, he inexplicably referred to the need for disseminating, through a mailing list from the school, the "doctrine of the Air Service, prescribed by Washington and as taught in this school, which is the senior Air Service school." In the same ambiguous vein he promised that the forthcoming revision of courses would not deviate from the schedule laid down by the Chief of Air Service.¹⁷ In any event the school made sufficient doctrinal progress during its first years to permit

¹³Foreign students could continue to attend provided that they were selected by the State Department on a basis which included thorough qualification in the English language.

¹⁴Letter, OCAS to Commandant ASTS, Annual Report, 1923-24.

¹⁵USAF Historical Studies, No. 100, 6.

¹⁶Annual Report, ASTS, Officer-in-Charge to Commandant, 1922-23, 2.

¹⁷Ibid., 3-4.

Milling later to report that texts had been written which had "stood the test of a year's use in the school and . . . become recognized authority for the tactical work for the Air Service."¹⁸

Doctrinal Development, 1921-22: The Concept of War

The Air Tactical School's doctrine of air power in its early years, so far as written evidence is available, was very much ground-oriented in its view of war and the employment of air power. The major work produced by Air Service Tactical School during this period was Air Tactics, written by Major W. C. Sherman in 1921 and published early in 1922.¹⁹ This text also served tentatively as the first training regulation (TR) in the 440-15 series for the Air Service, though this particular one was soon to prove unacceptable to the War Department, apparently because of its differentiation between "air force" and "air service." Sherman had not only had considerable air experience²⁰ but was a good scholar and writer as well. An outstanding member of the faculty at ASTS in its early years, he later lectured at the Command and General Staff School at Fort Leavenworth, Kansas, and in 1926 published an important, authoritative book, Air Warfare. His earlier study, Air Tactics, was prepared under the direction of Major Thomas DeWitt Milling, Officer-in-Charge at

¹⁸Annual Report, Ass't Commandant to Commandant, 1923-24, dated 30 June 1924. In that year the title of Officer-in-Charge was changed to Assistant Commandant and was never again used.

¹⁹ASTS, Air Tactics, (Langley Field, Va.: 1922).

²⁰AFP 210-1-1, 68.

ASTS.

The true objective in war, wrote Sherman in Air Tactics, was the destruction of the armed forces or military power of the enemy. Hence the objectives were the same in wars on land and sea, that is, they were tactical, not strategic, in nature. Within this context, he attached fundamental importance to the human element and hence to considerations of morale, both in air and ground warfare.

Nevertheless, he asserted that the use of ground troops should not be the basis for determining the principles of employment of the air force--as maintained dogmatically in the War Department manuals. Rather, he declared, each service should seek its doctrinal principles "in the element in which it operates." On this basis Sherman, much like Mitchell and Douhet, divided the Air Service into two functional categories, an auxiliary "air service" and an "air force." Whereas observation was clearly subordinate or auxiliary to the infantry, pursuit, attack, and bombardment aviation constituted a true arm, an air force. Their missions were offensive and destructive in nature--bombardment and attack aiming at the destruction of materiel and personnel, while pursuit aviation existed to destroy hostile aircraft.

Employment: Concepts and Tactics

Pursuit Role.--The air force's first and most difficult problem, Sherman asserted, was that of protection against hostile aircraft. Without it observation units worked under a severe

handicap, while attack and bombardment units were prevented from operating effectively against "the hostile foot troops" and friendly ground forces were meanwhile completely exposed to the enemy air force.²¹ This view was typical of that of many air-men in the early and mid-twenties. But Sherman, who realized the importance of the offensive, immediately declared that, though the idea of shielding our own ground and air forces from hostile air activity was an essentially defensive idea, it did not mean that pursuit ought to adopt a passive posture. Such a course would be ruinous. Therefore he decried the methods of close protection--that is, continuous escort of a given unit, which he declared deprived pursuit not only of its offensive spirit but the advantages of surprise and initiative. In like manner, he dispelled the notion of resort to defensive techniques such as the aerial barrage or line patrol. Any attempt to employ the barrage technique over any considerable length of the fighting line "would require a number of planes that no nation [would] . . . ever be able to furnish in war, even were she so faultily indoctrinated as to employ them in this manner."²²

At best control of the air would be partial. Sherman thought it impossible for an air force to approach "the almost complete control that at sea the British navy exercised before the day of the submarine." Nevertheless, some degree of control

²¹Air Tactics, Sect. II, 9-10.

²²Ibid., 11.

of the sky was indispensable to successful air operations. Accordingly, "the doctrine of the air force--and of pursuit in particular-- [could] . . . be therefore but one thing: to gain and hold control of the air, by seeking out and destroying the hostile air force, wherever it may be found." Here Sherman not only followed Mitchell but went beyond him, touching a point in doctrinal development where it seemed he would be impelled logically to follow through and seize upon its implications as Douhet did. Failing to do this, however, he assigned primacy in the air force not to bombardment but rather to pursuit, which he likened to the infantry, queen of battles.

It is the branch of aviation whose success or failure will very largely determine the success or failure of all aircraft. . . . The backbone of the air force on which the whole plane of employment must be hung is pursuit.²³
[Italics added.]

Role of Attack Aviation.--Next in order of importance Sherman ranked attack aviation, not bombardment, for by definition it "intervened on the field of battle itself, making direct attacks with light bombs and machine gun fire upon the hostile ground element." Reflecting the importance he attached to the human element in war, Sherman saw the role of the attack plane as essentially that of shattering the morale of ground troops. The threat it posed was considerable, for its radius of action was wider than that of any other combat arm of the air force--150 miles from the airdrome as of January 1922. Commanders were

²³Ibid., Sect. II, 13. Cf. Tentative Manual for Employment of Air Service, 1919, 80.

enjoined to exploit fully attack aviation's great innate capability to reorganize rapidly after an attack, refuel, rearm, and reattack. Sherman predicted that those who made proper use of this arm in the future would open up great opportunities for an army.²⁴

Role of Bombardment.--In land warfare Sherman considered it absolutely imperative that all bombardment objectives be established and determined in accordance with the over-all plan of ground campaign. Again, predictably, the type of employment he envisaged was primarily tactical in nature. Railways and other lines of communication ranked highest on his list of objectives. Together with depots and headquarters, they would be attacked in the rear areas of the opposing army. Sherman pointed out too that the air force must not overlook "possibilities of . . . destroying hostile airdromes." Once more he seemed to be approaching a critical part of the Douhet theory of counter air force action, but again he failed to develop it systematically.²⁵

Against industrial centers strategic bombing should not be undertaken, Sherman declared, without "a definite objective in some war industry."²⁶ This was an early indication of the need for identifying and linking a given target with a larger war objective and as such constituted a forerunner of modern strategic air warfare concepts. In this respect he was more

²⁴Air Tactics, Sect. IV, 1, 9, 15, 29-33.

²⁵Ibid., Sect. V, 7.

²⁶Ibid., 9.

advanced in his thinking on bombardment than either Mitchell or Douhet, if one accepts as a criterion scientific bombing of specific military objectives rather than mass area bombings. (This thought he was to develop further in 1926 in his book, Air Warfare,²⁷ where he clearly outlined the doctrine of strategic, precision attacks.) He predicted that the future would see bombardment directed largely toward physical destruction of "hostile works of varied kind,"²⁸ as opposed to mass morale bombing of cities and towns.

Strategic bombing of civilian population centers, which Sherman treated separately, would undoubtedly adversely affect morale, but he warned that its importance should not be over-rated. Having in mind the example of London, he thought that for its part the government whose territory was thus attacked ought not permit its judgment to be swayed by the popular clamor for ever greater local defense. Nor should it seek to retaliate in kind. Rather it should constantly keep uppermost in mind that the enemy's armed forces, not his cities, were the true objectives.²⁹ He concluded that a decision as to the use of bombers against cities involved political questions and ought to be decided on a political, not a military, basis. As for Trenchard's estimate of 1919 that the morale effect of bombing

²⁷Air Warfare, 217-18.

²⁸Air Tactics, Sect. V, 3.

²⁹Ibid., 10.

compared with the physical in a ratio of 20 to 1,³⁰ he thought this statement applied in actuality not to bombardment per se but rather to attack aviation, especially after showing that most of the British independent air force's operations were primarily of a light bombardment nature.³¹ Bombardment's role, whether of physical or morale destruction, could be executed successfully by provision of adequate pursuit escort for bombers and defensive formation tactics.³²

Role of Bombardment at Sea.--Air fighting on land and sea would present essentially similar features. The chief disadvantage for air operations at sea would be that of the floating aerodrome. The fundamental doctrine of the Air Service would be the same: its first duty would be to seek out and destroy the hostile air force and thereafter to destroy the most important enemy surface forces.³³

Commenting on Mitchell's bombing tests of 1921, the author observed that the army, charged by law with coastal defense, possessed in the airplane a mighty offensive arm capable not only of the coastal defense function but also of intervening in battles at sea. Though Sherman--unlike Mitchell--believed in the permanency of sea power, he noted that the airplane had

³⁰USAF Historical Studies, No. 89, citing Trenchard in The London Gazette, Supplement No. 10, Jan. 1, 1919.

³¹Air Tactics, Sect. V, 1-2, 18.

³²Ibid., Sect. V, 5.

³³Ibid., Sect. II, 22.

certainly "altered the means by which that power [was] obtained." There was no longer any doubt as to the ability of aircraft to sink seacraft within range of shore bases. Although the tests were conducted about 100 miles from shore, he was not satisfied as to their conclusiveness. He saw that if bombing planes could be prevented from making their attack or interfered with sufficiently as to greatly decrease their accuracy, "the ships [might] be saved." Of the three possible methods by which this might be done--antiaircraft fire, changing of the vessels' course, and pursuit aviation attacks on the hostile bombers--only the latter could be regarded as practicable. "Were bombardment airplanes to attempt to attack seacraft amply defended by pursuit, the attack would be broken up before it could prove effective."³⁴ This led Sherman to conclude that not only was the question of air control as important over the sea as over the land, but that there was every reason to believe that "control of the air, while it may in land warfare--to use the phrase of Marshal Foch--only 'incline' victory to the side holding it, it will in sea warfare insure victory."³⁵ Oddly enough, however, Sherman in his later sections on bombardment at sea endorsed a view predicated on the assumption that bombardment aviation could successfully engage and sink a hostile fleet regardless of its counter-action.³⁶ Which of the two views, inconsistent as they

³⁴Ibid., 15-21.

³⁵Ibid., Sect. II, 22.

³⁶Ibid., Sect. V, 11-13.

were with one another, the school actually followed is not known.

Evaluation

In its concepts of war and the role of the aerial weapon, the Air Tactical School in the early twenties largely followed a tactical rather than strategic orientation. In this respect, it adhered to the basic pattern derived from the experience of the World War and the quite similar doctrine of air power put forward by General Mitchell. The objectives in Mitchell's doctrine and in ASTS's teachings on air power were in each case the same--the armed forces of the enemy and associated geographical positions. To carry out such tactical employment in conjunction with the ground forces, both insisted that the doctrine of the air force, and of pursuit aviation in particular, was to seek out and destroy the enemy air force wherever it was found. In practice this meant sky battle. Though ASTS made reference to the need of bombing airdromes, this was done in an incidental manner and did not constitute, as in the Douhet system, a part of an integral well-thought-out scheme of air force employment directed at gaining command of the air. With bombing at sea, employment was necessarily tactical--directed at surface forces once more. Here, however, ASTS followed Mitchell only part of the way. It recognized the superiority of shore-based aircraft but reserved judgment as to the absolute primacy of air power over sea power, a point on which Mitchell would not yield. It saw that a role for naval aviation existed which if developed could protect naval vessels at sea. As for strategic bombardment, that controversial

role of air power was treated circumspectly by ASTS, but in one respect ASTS nevertheless advanced a step forward in bombardment theory; it did call for adherence to the principle that all bombing be coordinated with the larger plan of campaign and insisted that bombing directed at industrial centers have a specific objective in view in some war industry. The bombing of cities, a hotly debated contemporary issue, was expressly treated with great caution; this was an area in which the decision would have to be made only at the highest echelon, the political. Thus it was clear that Douhet's influence had not yet penetrated ASTS. If anything the tendency was in an opposed direction, tactical rather than strategical, pursuit-oriented rather than bomber-oriented, and, if one may stretch the point, precision-oriented rather than area-oriented. So marked was the school's tactical orientation that it ranked attack aviation ahead of bombardment per se. In this respect it was in closer accord with the War Department General Staff than with Mitchell, whose position on air power was now beginning to shift perceptibly away from the tactical.

PART III

THE FORMATIVE PERIOD IN AMERICAN
AIR THOUGHT, 1922-1926

CHAPTER V

EVOLUTION OF MITCHELL'S CONCEPTS OF AIR POWER:

ATLANTIC INFLUENCES, 1921-1923

The five years after 1921 were years of flux and growth in American air thought. Though characterized by sharp controversy as to the value and role of the air weapon, that period saw American air power doctrine begin to take on its modern contours and hues at the Air Tactical School, largely under the influence of the foremost air thinkers. Mitchell's thought, stimulated by Douhet, not only broke out of the narrow confines of tactical employment in which it had been almost entirely absorbed and concentrated since 1918, but also departed from its essentially isolationist orientation in favor of a dynamic, intercontinental one. Moreover, the surface forces at this time found it advantageous to devise ways and means of employing the increasingly potent air vehicle to meet their respective needs. The period saw too the real beginnings of the growth of both civil aviation and the aircraft industry, both of which gained increasing recognition as indispensable supports for the nation's defense. But of all the events of this remarkable formative period in American military history, perhaps the most significant was the revolution

in air power thought at the Air Corps Tactical School in 1926 which inverted the pyramid of American military air power, with bombardment displacing pursuit as the principal element. The dominant element at the school thereby set the institution upon a new doctrinal path that was not to be departed from in later years except for minor deviations. Throughout the latter twenties and the early thirties the revolution in ideas continued until fully consolidated at the school and accepted within the Air Corps as a whole. Thus the history of air doctrine during the formative years of the twenties unfolds a panorama of swirling currents of thought; ideas and concepts with, at times, the power of tidal forces; and an intermingling of certain ideas and concepts, emanating from abroad for the most part and adopted and adapted by leading individuals or schools within the United States. In that process the evolution of Mitchell's thought was to play an important part, with him primarily as a transmitter of foreign thought conjoined to his own and evolved into an American product.

As early as 1920 a close observer, Major H. H. Arnold, had detected "a change in Billy Mitchell," noting that the experiences encountered in his crusade for air power "had given him an under-current of angry impatience."¹ Though it could fairly be said that the stature of air power had been enhanced by the long sought bombing tests of 1921, it may be recalled that following those tests there had been such a furore in the

¹Arnold, 96.

press (which had been instrumental in creating pressure for the tests in the first place)² over the radically differing interpretations of the results achieved that it led to a shake-up in the Air Service, with Major General Patrick coming in once more to handle the apparently intractable Mitchell. A somewhat similar series of events transpired in 1923, following the September air bombing tests against the New Jersey and the Virginia off Cape Hatteras. After both sets of tests--September 1921 and 1923--the new Chief of Air Service and other friends arranged assignments for the fiery but obviously overwrought aviator that would constitute useful duty while giving him a needed rest and change of scene. The first led to Mitchell's trip to Europe in the winter of 1921-22; the second to a prolonged sojourn in the Pacific, covering a period of nine months of 1923-24. So far as the evolution of air doctrine was concerned, both journeys proved eventful, particularly the latter. Also doctrinally significant was the intervening contest of air power versus sea power in 1923.

A note of caution may perhaps be in order at this point. Mitchell's thought, unlike Douhet's, was often expressed not only in generally unsystematic fashion but sometimes in ambivalent if not seemingly contradictory terms. Hence it should not be entirely surprising to find that Mitchell's thought during the period under review has been represented by some as primarily

²Lincoln, Military Affairs, XV (Fall, 1951), 151-152.

strategic and by others as essentially tactical, or again, as essentially defensive and isolationist, or, offense-minded and applicable to a world theater. The tendency has been to ascribe to Mitchell a consistency of strategic air thought he did not possess.³ An opposite view has also been presented showing Mitchell relying chiefly upon tactical air power--the pursuit plane in particular--for the nation's defense in the context of a narrow, isolationist-oriented strategy.⁴ Both views appear to be lacking in discrimination; ignoring nuances, changes, and trends of thought; and failing to probe questions of origins and influences. Closer to the mark but still insufficiently discriminating in the evolution of Mitchell's thought is the view showing him espousing strategic air bombardment concepts of an offensive nature while couching them in an isolationist setting.⁵

Based upon the available evidence, there is no doubt that Mitchell's own views of war and the role of air power in war underwent considerable change during this period. It has already been established that Mitchell was no doctrinaire. While the most significant change appeared in late 1923 and 1924 and can be dated with reasonable approximation, it is believed that the beginnings of this process date from Mitchell's visit to Italy

³USAF Historical Studies, No. 89, 17-18.

⁴Lester H. Brune, Foundations of American Air Power Doctrine, 1917-1933 (Ph. D. dissertation). University of Rochester: 1958.

⁵James L. Cate, "Development of Air Doctrine, 1917-1941," AUQR I (Winter, 1947), 11-22.

in the winter of 1921-22, though here the evidence is indirect and vague.

The stated purpose of Mitchell's mission to the leading air powers of Europe was to ascertain in each case, as he put it, the military "policy of the country and the way in which it was applied from an aeronautical standpoint, how the aeronautical activities were related to the military and naval activities, and the manner in which the problems were solved."⁶ The mission also was interested in the administration, tactical establishment, and the technical organization of the air forces and air services. Mitchell in his report made a particular point of establishing that "in each country visited great care was taken to visit all officers and officials and to deal with them with the utmost frankness." Mitchell added that, fortunately, "in every country the officers in charge of aviation were either old friends of mine with whom I had served . . . or whom I knew of and who knew me." The net result was that "in every case everything practicable was done for us, and the trip resulted in the gaining of a great deal of knowledge about the rearranged conditions as they obtain today in Europe and the application of aviation to those conditions."⁷ In light of this fact, it is interesting to observe

⁶Mitchell, Report of Inspection Trip to France, Italy, Germany, Holland, and Britain, 1921-1922 (Washington: 1923), 1-2. Hereafter cited as Report of Inspection, 1921-1922. In USAF Archives 167.404-13. Mitchell was accompanied by his aide, 1st Lt. Clayton Bissell, and Aeronautical Engineer Alfred Verville. Ibid.

⁷Report of Inspection, 1921-1922, 2.

that Mitchell, while mentioning names of people in almost every other country, studiously avoided mentioning anybody by name or professional position in Italy. The only person singled out in that country was identified by virtue of his status--the King. With a different doctrine of aviation which he carefully noted and a technically advanced aircraft industry, it is indeed strange that Mitchell made no reference whatever to Douhet or Caproni in Italy. On the other hand, the names of Junkers and Dornier appear in his report on Germany, and references to personalities are interspersed throughout his account of the inspections made during the visits to France and England.⁸ Yet, oddly enough, Mitchell asserted that "we met more men of exceptional ability in Italy than we did in any other country;"⁹ but he mentions no names.

Concept of War and the Role of Air Power--1922: European Influences

His European trip appeared to confirm Mitchell in his conviction that war would continue to be largely a tactical affair, and that air power's role in the next conflict would be directed initially toward control of the air. Certain applications and methods now emerge in his views, and they were later adopted by ASTS and incorporated in school texts:

⁸The distribution of weight by pages in the report is also interesting: France, 34 pages; Italy, 13 pages; Germany (no air force and no military aviation industry), 18 pages; Holland, 7 pages; England, 25 pages.

⁹Ibid., 40.

- (1) Regardless of the type of air force or army in Europe, all must mobilize;
- (2) Whoever was quickest to do so in the air gained a great advantage in time;
- (3) Air power should be directed initially against mobilization, assembly, and concentration points with the aim of disrupting or preventing effective mobilization of surface forces;
- (4) Realization of this goal was likely for that side which first gained control of the air;
- (5) With the air controlled and the enemy army immobilized, the war could be won virtually by air power alone.¹⁰

Thus a premium was put on offensive operations. From the French Mitchell incorporated in his recommendations, that, inasmuch as there would exist no functional need for observation aviation during the first two weeks of the war, observation aircraft--the mass of most air forces--should be prepared to assume a dual role and act offensively in a pursuit capacity from the outset.¹¹ This proposal entailed the recall of observation planes from army units and their placement under command of the air force during the early stages of a campaign. The planned augmentation of offensive uses of the air weapon is notable as a harbinger of the future; the function however remained tactical.

Mitchell also concurred with the French commanders (with

¹⁰Ibid., 5, 14-15, 104; infra, chap. 8.

¹¹Ibid., 8, 15.

whom he sat in conference in December 1921) in taking away tactical control of the central or GHQ air force from the supreme command, which had been the practice during the war, and decentralizing it by giving it to that commander in the field who was charged with the execution of a mission or operation.¹²

The GHQ air force itself would however still be handled through its senior commander, to whom would be transmitted orders from the field commander in charge of the operation. (Despite Mitchell's recommendation, American practice continued to favor retention of centralized control at the GHQ level.)

Mitchell was influenced not only by French aviation concepts but also by certain aspects of British and Italian aviation policy. Owing to facts of geographical location, Britain discovered herself at a comparative disadvantage in the new era of air power. Lacking continental bases, her air force found itself a long distance from most European strategic targets, while at the same time British centers, especially London and the Channel ports lay within much closer reach of potential enemies on the mainland. Hence during Mitchell's investigation, it became clear that British concepts of national defense had undergone commensurate change since the war. The greatest importance was now attached to air defense, with pursuit aviation organized for the "protection of localities." Air attack from the continent was the only thing of which Britain was "deathly afraid."¹³ At the

¹²Ibid., 9, 10, 13.

¹³Ibid., 82.

opposite extreme strategic bombardment was now de-emphasized in view of the navigational difficulties of reaching the vital centers of a continental foe with existing equipment. Because of the distances involved and the limited radius of action by existing aircraft, any attacks which might be undertaken would have to be night-time bombing ventures which did not require pursuit protection.¹⁴ Thus Britain viewed air warfare no longer in offensive but rather in defensive terms.¹⁵ Mitchell was also interested in the British practice of assigning air force units to duty at sea on aircraft carriers and attempted, unsuccessfully, to make it American practice too in subsequent years. From studying Britain's strategic position and problems of defense vis-a-vis the continent, Mitchell developed a keener appreciation of the intricacies of geographic location, noting how relatively easy it was for a continental enemy to strike the United Kingdom from nearby bases but how much more difficult it was for the British air force to attack the heart of a continental military power.¹⁶

The strategic situation confronting Italy was generally

¹⁴Ibid.; General Arnold in his memoirs, Global Mission, 160, makes the interesting observation that it was not until 1936 that the RAF, despite its separate and independent organization, developed large 4-engined bombers again, and that they were not ready until about the outbreak of World War II. However, it would appear that weakening of the strategic concept was also responsible for the delay.

¹⁵Ibid., 81-82.

¹⁶Ibid., 81-82, 85.

quite similar to that of Britain, but the Italian response was markedly different. To an even greater extent than the British, the Italians faced the age-old problem of defending their most important region under highly disadvantageous conditions. Industrially and agriculturally, North Italy was the heart of the country, but it lay within easy reach of potential enemies by both land and sea. Yet the important centers of her larger neighbors were comparatively distant from the Italian border. Moreover, Italy's entire coast was highly vulnerable to naval attack. The advent of the air age seemed to accentuate rather than relieve the defense problem.

Instead of finding within the context of this problem a solution similar to the one evolved by the British under roughly comparable but more advantageous circumstances, Mitchell learned that a new national defense policy had been recently determined on: resistance on the surface and attack in the air.¹⁷ This policy echoed Douhet's cardinal strategic maxims for Italy;¹⁸ of capitalizing upon the inherent offensive power of the air weapon and the supposed superiority of the defense on the ground, as well as favorable Alpine terrain. Mitchell noted that "the greatest stress is being laid on aviation, and it is regarded as their first line of defense."¹⁹ He observed that both bombardment

¹⁷Ibid., 42.

¹⁸Douhet, Command of the Air, Part I (Faber edit.), 15-19, 48. See also Command of the Air (Rome edit.: 1958), xv.

¹⁹Report of Inspection, 1921-1922, 42.

and pursuit aviation were being organized for taking the offensive and that the Italians were experimenting with delayed action fuses covering a time span of several hours with the object of dropping bombs so fused in "an area which is to be put out of business." He expressed the opinion that "the effect of this sort of bombardment on an industrial district can be easily realized, because bombardment of an industrial area not only destroys materiel but also has a tremendous morale effect."²⁰ It is notable that the example of delayed action bombs is given in Douhet's Command of the Air, 1921 edition, and that the morale effect of bombing is stressed throughout. Mitchell was also impressed with the Italians' technical performance, all their work "being of the highest order." As to the priority accorded aviation, Mitchell reported that its development was to take "precedence over any other national defense organization."²¹

Nevertheless, in his recommendations Mitchell continued to accord pursuit aviation top place in the air force triumvirate, thus following the British and French example rather than the Italian--the tactical rather than the strategic. His general conclusion was that the European consensus held the mission of an air force to be the destruction of the hostile air force

to a sufficient extent to allow free operation of one's own air force and then to attack and destroy the most dangerous of the enemy's elements either on the ground or on the water; that to bring this about all available air power should be

²⁰Ibid., 47. cf. Command of the Air, Part I (Faber edit.)
22.

²¹Ibid., 42, 49.

thrown into the offensive immediately upon the outbreak of the war, and that the nation inferior in air power at the beginning of the war will either lose the campaign at once or be placed in a very embarrassing military position.

As for the national defense structure in the United States--which should of course be based upon air power in the first instance--he concluded that pursuit aviation should be given first consideration as the air arm's primary mission remained the destruction of the hostile air force.²²

Thus his national defense scheme of 1921 was retained virtually intact in his report, based upon 600 planes on the East Coast, 600 on the West Coast, and 1200 planes in the central part of the country, though now one-fifth rather than one-sixth were to be on an active basis. The general proportions, as to types, were also to remain the same. However, he thought the United States needed to "more intimately associate [its] pursuit with bombardment and attack aviation." Hence two kinds of wings should be organized, bombardment and attack, in each of which the proportions would be two groups of pursuit to one group of the other component. Putting more emphasis on offensive flexibility in 1922, he also felt it desirable to combine the bombardment wing and the attack wing into a 600-plane brigade, thus enhancing the unit's ability to strike both at a distance from shore and nearby, in defense of localities.²³

Influenced by the European suggestion as to reorganization

²²Ibid., 104, 107.

²³Ibid., 108, 110-112.

of observation aviation for offensive employment during the initial period of mobilization and concentration of ground forces, Mitchell thought that future observation aircraft ought to be "designed as two-seater pursuit planes with superchargers so as to act at the highest altitudes, and should be trained to accompany the bombardment aviation on its raids at the beginning of a campaign."²⁴

Like his European contemporaries, he regarded observation aviation, which still constituted the bulk of most air forces,²⁵ as an auxiliary service within the United States' defense structure and recommended that it be "cut down to the lowest point possible commensurate with efficiency." Surprisingly enough, however, Mitchell, in specifying the types of airplane the country should adopt and develop, failed to include a two-place pursuit ship. In addition to three single seater pursuit types and a two-place armored attack type he listed among the three bombardment types a combination single engine bomber and surveillance airplane. This was the only reference to an observation craft in his aircraft requirements list.²⁶

All these ships were to be constructed of metal in their entirety as soon as possible--a feat already achieved in

²⁴Ibid., 114-115.

²⁵For the United States see table of aircraft acceptances by type of aircraft, 1920-1930, in Ch. II, AAF Historical Studies, No. 44: Evolution of the Liaison-type Airplane, 1917-1944 (Maxwell Field, Ala.: 1946). More aircraft of the observation type were accepted annually than any other.

²⁶Report of Inspection, 1921-1922, 115, 119.

Europe.²⁷ He was convinced that this country should develop airships "as airplane carriers for use over the high seas and over the land, as a means of combating other airships, for bombing, reconnaissance, and transport purposes."²⁸ However, he had little regard for the ordinary observation balloon, which had been used so widely in Europe during the late war, noting that it would "have very little application in a war of movement," presumably a reference to the initial phase. Since it was void of offensive power, the balloon could not be modified for offensive purposes as could the observation plane. Thus he advised that the balloon organization be reduced to a point where only instructional work would be continued.²⁹

The keynote of the entire report, then, is an insistence upon greater and more efficient offensive use of the entire air organization, but for tactical purposes as hitherto. For the time being at least, the Italian plan of strategic bombardment was muted. That the Continental nations in general were thinking in terms of air offensives and were adapting their air forces and national defense systems accordingly caused Mitchell to reiterate his plea for a national defense reorganization in the United States.

²⁷Ibid. But the first "all-metal, all-American-made" plane was not produced in the United States until the late twenties and "the first all-metal pursuit plane made its appearance in . . . 1931." Arnold, 129.

²⁸Ibid., 121.

²⁹Ibid.

Pointing out that "the organization along our coasts is so complicated . . . that we would be terribly handicapped and our hands almost tied in case we were attacked by a first-class power,"³⁰ the Assistant Chief of Air Service called for a congressional investigation to look into the entire question of national defense and to enact additional statutes to re-define, reallocate, and fix the duties and responsibilities for defense in the air, on the land, and over the water.³¹ Though this somewhat presumptuous and sweeping recommendation was hardly calculated to restore him to a position of favor within the War Department, it was couched in generally moderate language, quite unlike the report he was to issue two years later upon his return from the Pacific. During that latter interval Mitchell was not content simply to wait for the Congress, already deeply engaged in a spate of postwar investigations of the executive branch, to renew its earlier defense inquiries; rather, he threw himself into a number of projects which he hoped would enhance the stature of aviation and give the air arm a larger place in the national defense system.

While the most important of those projects was no doubt the preparation for and the conduct of the bombing maneuvers off Cape Hatteras in 1923, other notable ones included stimulation

³⁰Ibid., 122.

³¹Ibid.; see R. Earl McClendon, The Question of the Autonomy of the United States Air Arm, 1917-1945 (Montgomery: Air University, 1954), for documentary treatment of the organizational aspect of air power development.

of progress on airways throughout the country, in which Lieutenant Bissell, one of his aides, took a notable part; Mitchell's establishment of a world's speed record in October 1922; and staff planning and preparations for the first round-the-world Air Service tour scheduled for 1924. In the meantime the navy launched its first aircraft carrier, the USS Langley,³² and took other steps to incorporate air power within the traditional establishment. This sharpened competition for control of the air weapon in national defense served to intensify Mitchell's efforts to assure the primacy of air power in its own right. It was during this period that the Assistant Chief of Air Service, in addition to more highly publicized measures, found time to write an important and revealing manual of instructions for bombardment operations on land and on sea, entitled Notes on the Multi-motored Bombardment Group.³³ Composed sometime in 1922 or early 1923 following the European trip, Mitchell's manual long served as a major reference and guide for air officers.³⁴ Its special importance for this study lies in its revelation of the evolution of Mitchell's thinking.

Concept of War and the Role of Air Power--1923: Consolidation and Advance

Notes on the Multi-motored Bombardment Group.--The title

³²AFP 210-1-1, 79-81.

³³Mitchell, Notes on the Multi-motored Bombardment Group, Day and Night (Washington: n.d.). In USAFHA 248.222-57. Copy used bears ASTS's catalog date of Oct. 3, 1923.

³⁴USAF Historical Studies; No. 100, 27.

in itself is significant in denoting increasing emphasis on the offensive power of the aerial weapon. The air leader still insisted, however, that "the defeat of the enemy forces is the purpose of the conduct of war, and the destruction of enemy objectives is the function of bombardment." And even within this context bombardment aviation was no more than "a component part of the air force," constituting but "a part of the offensive air force of the nation." [*Italics added.*] Except in the rarest cases, operations of the bombardment force could not even be contemplated during daytime without the use of pursuit; hence the bombardment group commander was adjured to maintain the closest liaison with the pursuit forces.³⁵

Moreover, his discussion of targets to be attacked by bombardment reflected in part European influence and the experience gained during the 1921 bombing tests against vessels at sea. Speaking of targets on land, Mitchell used words strongly reminiscent of Douhet in the latter's discussion of the complexities of target selection: "With such a diversity of targets, each one requiring by its very nature the special consideration of the best method of attack, it is impossible to formulate general rules which may be universal in application. In a large measure each mission must be left to the discretion of the Group Commander."³⁶

³⁵Notes on the Multi-motored Bombardment Group, Introduction, 4, 18, 108.

³⁶Ibid., 85. Cf. Douhet, The Command of the Air, Part I (Coward-McCann edit.), 59-60.

Mitchell's adherence to tactical thinking and his mounting concern with counterforce problems were evident in the order in which he preferred to list possible targets for the bombardment group commander: "enemy airdromes, concentration centers, training camps, personnel pools, transportation centers, whether rail, road, sea, river, or canal, ammunition and supply dumps, headquarters of staff commands, forts and heavily fortified positions, trains, convoys, columns of troops, bridges, dams, locks, power plants, tunnels, telegraph and telephone centers, manufacturing areas, water supplies and growing grain." [Italics added.] Especially significant were the initial position he now accorded enemy airdromes in this carefully prepared categorization of targets and the placing of strategic targets at the very last.³⁷ In the ensuing discussion Mitchell therefore took up first the question of attacking enemy airdromes per se:

Attacks against enemy airdromes may be launched night or day and may be carried out by Bombardment alone or in conjunction with Pursuit or Attack. At all events, the mission of Bombardment is the same, to render the aircraft on the airdrome and its equipment useless for further attack against our forces.³⁸

Whereas in World War I such attacks were generally directed against pursuit dromes and occurred more or less haphazardly, this statement marked the first systematic identification of this type of target in Mitchell's thinking, together with the rationale therefor. Occurring soon after his European trip, it

³⁷Ibid., 84.

³⁸Ibid., 85.

is almost certainly indicative of Douhet's influence. Bombers (as well as other types) were to be stopped on the ground. After extended discussion of employing bombardment aviation against a great variety of other tactical targets, mainly in the battlefield area, Mitchell took up the question of strategic attack against cities--a matter which he had largely ignored since 1918 in his major concern with the tactical aspects of aerial warfare.

As in the preceding instance, Mitchell's thought was here quite likely influenced by the growing European interest in offensive employment of air weapons in future land warfare. And certainly not the least of his reawakened interest in the possible strategic uses of the air weapon derived from the bombing tests of 1921 which, though tactical of course, had nevertheless themselves served to do "more than anything else since the war to emphasize the importance of aircraft as an offensive . . . weapon."³⁹ Hence Mitchell probably felt strongly impelled to take issue with contemporary questioning of aerial bombing and proceeded to justify its use against industrial areas.

The ethics of attack on manufacturing areas in the rear is one which is engaging the attention of an International Tribunal convened at The Hague. The result . . . will probably be the formulation of a set of rules limiting attacks of this nature. Manufacturing centers produce munitions of war. Munitions of war are imperative to the continuation of the struggle. The destruction of manufacturing centers and material brings the conflict to a quicker termination. These facts cannot be controverted. Thus, manufacturing centers become military objects, even though they house non-combatant personnel.⁴⁰

³⁹Lincoln, 153.

⁴⁰Notes on the Multi-motored Bombardment Group, 93.

He suggested that residents be given sufficient warning of impending destruction, thus removing any justification for their remaining in the danger zone. It would be the height of folly, he said, to neglect the development of the long-range air weapon and be unprepared to use it in a future conflict. Thus, paradoxically, the airman who had done probably more than any other single person to demonstrate the feasibility of precision bombing seemed unable or unwilling to transfer that concept and practice from tactical operations at sea to strategic bombardment against war-making, industrial targets on land. Once more, however, Mitchell was coming to espouse strategic bombardment, but this time more gradually than in 1917-18. He suggested application of gases that might be developed to poison the water supply in arid lands for both man and beast; he proposed a similar use of gas against wheat in agricultural areas.⁴¹ Thus Mitchell, though continuing to emphasize the tactical, was moving perceptibly toward a doctrinal posture that would include strategic bombardment. However, the most efficacious use of the bombing arm Mitchell still saw in its employment at sea.

Experience in 1921 had proved that in comparable bombing of objectives at sea and on land, the former was more destructive because "any large bomb exploded at the proper depth within a reasonable distance of the vessel caused as much, if not greater, damage than a direct hit."⁴² Through application of this

⁴¹Ibid., 94.

⁴²Ibid., 61; Lincoln, 152-153.

"water-hammer" effect, the most powerful battleship afloat could be sunk by aerial demolition bombs alone. To counter the threat of air power against battleships there had been much talk about using aircraft carriers with the fleet, but Mitchell asserted that the floating airdrome represented by the aircraft carrier "would be one of the easiest ships in the fleet to put out of commission because even very light bombs would tear the landing deck to pieces and make it impossible to land or take off." In the event that hostile carrier pursuit proved troublesome, carriers would be singled out as the first target for attack.⁴³ But in his listing of principles for attacking seacraft, Mitchell as a general rule urged (1) concentration on battleships; (2) designation of each individual battleship for attack by a separate flight of bombers, with twelve flights per bombardment group; and (3) adherence to specific detailed tactics which he had worked out. Most of these tactics were adopted by the Air Tactical School in its manuals and texts.⁴⁴ Moreover, such tactics were further refined as a result of the important 1923 bombing tests off Cape Hatteras, in the course of which two condemned vessels, the Virginia and the New Jersey, were sunk on the fifth of September from the remarkable, required altitude of 10,000 feet⁴⁵--a further, astounding early instance of precision

⁴³Ibid., 63, 67.

⁴⁴Infra, Ch. 8.

⁴⁵AFP 210-1-1, 80; Arnold, 111; Lt. Clayton Bissell, Brief History of the Air Corps and Its Late Developments (n.p.: 1927), 91, says hits were scored against the New Jersey from 11,000 feet.

bombing which ranked with the sinking of the Ostfriesland.

The Bombing Tests off Cape Hatteras.--His report of the bombing tests of 1923 clearly reveals that Mitchell was strongly influenced by those events and that he remoulded his air doctrine accordingly:

1. Air Forces, with the type of aircraft now in existence or in development, acting from shore bases, can find and destroy all classes of seacraft under war conditions with a negligible loss to the aircraft.
2. Conditions of weather . . . do not alter the statement above..... There are no conditions in which seacraft can operate efficiently in which aircraft cannot operate efficiently. Aircraft therefore form an absolutely **positive system** of defense against seacraft within their radius of action.⁴⁶

Although the problem of air destruction of ships at sea had in Mitchell's view been "solved and . . . finished," there remained the necessity of providing "an Air organization and a method of defending not only our coast cities, but our interior cities, against the attack of hostile air forces." Mitchell was now convinced that an enemy in control of the air--which automatically gave it control of the sea--could establish its air forces on off-shore islands, using carriers to transport them thither.⁴⁷ Consequently it was imperative that America's "scheme of national defense . . . be revised at once."⁴⁸

But a final solution of the national defense problem could

⁴⁶Report of Bombing Maneuvers Conducted off Cape Hatteras, Sep. 5, 1923 (n.p.), 22. In USAFHA 248.222-71.

⁴⁷Ibid., 23-24. This theme was to recur throughout the years at ACTS in discussions of coastal defense problems.

⁴⁸Ibid., 24.

not be obtained until a Department of National Defense was established and organized with sub-secretaries for the army, navy, and air; only thus could aviation develop to its fullest extent, that is, under its own direction and control. Such a national defense structure would concentrate all air strength within the jurisdiction of the air force, though air units would be allotted to the navy for fighting operations on the high seas. However, all naval control would cease two hundred miles from the shoreline, and in that zone complete control and responsibility for defense against both ships and aircraft would reside in the air force. The army would be completely responsible for defense of the land.⁴⁹ Thus Mitchell believed that the great striking power of the air weapon--demonstrated anew by the bombing tests of 1923 and already acknowledged by Europeans in their defense policies--should be functionally recognized in a thorough-going, logical reorganization of the entire American defense system. Such a clear-cut demarcation of functions would of course deprive the navy of its shore establishments and bases for coastal defense, limiting it to a combat and patrol role on the high seas where it would operate under the protection of air detachments. Mitchell's doctrine on the superior place and function of air power in national defense was soon expanded in the course of his inspection of United States possessions in the Pacific.

⁴⁹Ibid.

CHAPTER VI

EVOLUTION OF MITCHELL'S CONCEPTS OF AIR POWER:

PACIFIC INFLUENCES, 1923-1925

Concept of War and the Role of Air Power, 1923-24

Even before he left the shores of the United States on October 23, 1923, Mitchell unwittingly revealed in a communication to the Chief of Air Service that he had taken a further significant step in the evolution of his air doctrine. On October 19 he wired General Patrick from the west coast, where he was inspecting air bases, that his impending study of the Pacific defense problem would not be approached simply in terms of defeating the enemy's armed forces but would encompass as well the destruction of the hostile nation's "power to make war, including production and supply of war material, transportation, etc., and . . . destruction of their morale."¹

Such objectives unmistakably connoted a Douhetian concept of war; with their acceptance, Mitchell clearly crossed the threshold from the tactical to the strategic realm. They represented no passing fancy but rather became integral to the future development of his doctrine. When, a year later, he reported upon

¹Levine, 293.

the results of his inspection he reiterated three cardinal points as essential to the successful conclusion of a war: "1. the destruction of the hostile armed forces; (2) the destruction of the hostile power to make war; and (3) the destruction of the morale at an early date."² By the power to make war Mitchell clearly meant the ability to produce, supply, and transport war material. Destruction of morale signified the ending of the people's will to continue the struggle, as opposed to that of the armed forces.

These statements marked the first time in years that Mitchell systematically added anything to his concept that the objectives in war extended beyond the tactical element, the destruction of the armed forces. Even here, the idea of complete or unqualified destruction was new in his thought. Formerly he had called only for the defeat, not the utter destruction of the surface force; only the hostile air force was to be sought out and destroyed--in the air, and beginning in 1922, on the ground. The new position first indicated in October 1923 represented, then, not only a significant and substantial--though not total--shift from tactical to strategic air warfare but also the acceptance of a philosophy of annihilation. In so doing, Mitchell committed the same error which Douhet had made earlier when in his discussion of war he deemed inevitable the destruction of the entire social and economic

²Report of Inspection of United States Possessions in the Pacific and Java, Singapore, India, Siam, China, and Japan (Washington: Oct. 24, 1924), 30. Hereafter cited as Report of Inspection in the Pacific. In NA, Air Corps Library.

fabric--a theme the Italian theorist continued to reiterate in more or less explicit fashion.³ Mitchell's new emphasis on destruction, therefore, was typically Douhetian. It was completely divorced from the Clausewitzian concept of graduated application of a state's force aimed at attaining a national object which could not be realized by peaceful means; certainly destruction was not an object of that kind.⁴ Thus did the American air leader apparently succumb to Douhet's admonition that "in this period of rapid transition from one form of war to another, those who daringly take to the new road first will enjoy the incalculable advantages of the new means of war over the old."⁵ Moreover, it is interesting to note that in his new concept of war the military objectives which Mitchell posed for a belligerent were ones whose realization was dependent in large part, in every case, upon the employment of air power; only the air weapon could exercise a significant and perhaps commanding role in the pursuit of the trinity of objectives--strategic as well as tactical--established as requisites to victory in the new Mitchellian doctrine.

Strategic Employment of the Air Weapon: Principles

As in his previous enchantment with strategic air warfare in 1917-1918, Mitchell now once more in 1924 recognized explicitly--

³Douhet, The Command of the Air, Part I.

⁴Hoffman Nickerson, "War," Encyclopedia Britannica (1946), v. 23.

⁵The Command of the Air, Part I, 30.

as if it were a new thing--that the advent of the air weapon had changed the old patterns of war. He used the standard Douhetian arguments that aircraft could strike anywhere behind the enemy's army and navy, and that air forces could carry operations to all parts of the hostile country, being restricted only by the airplane's radius of action.⁶ Nothing was immune to the striking power of the air arm.

Such exposure, Mitchell continued, would be the fate of any country that had lost the initiative and was forced on to the defensive.⁷ Once in that posture, defeat in modern war became inevitable. To avoid such a catastrophe, it was imperative for a country to assume the offensive and maintain it until the issue had been successfully resolved. Agreeing tacitly with Douhet's conclusion as to the necessity for command of the air, Mitchell expressly stated that under the changed conditions of warfare it was now "necessary to gain the ascendancy first with air power before a decision can be obtained over an enemy."⁸

Such predominance could be achieved by adherence to correct doctrinal principles in the organization and employment of air power. Like Douhet he placed the greatest stress upon mass, but in applying the principle Mitchell emphasized the pursuit role.

⁶Report of Inspection in the Pacific, 31; cf. Douhet, Command of the Air, Part I (Faber edit.), especially 14.

⁷Ibid.; cf. Douhet, Command of the Air, Part I, 13-19, 45.

⁸Ibid., 31, 311-12; cf. Douhet, The Command of the Air, Part I (Coward-McCann edit.), 25.

Though his objectives entailed attack by bombardment, such destruction could not be achieved without the skilful assistance of pursuit aviation, even as Douhet's bombers remained largely dependent upon their combat escorts. To be successful in the new warfare, one had to mass pursuit aviation at "the decisive points at the inception of the operation." If an air force did not act in "concentrated compact bodies," it could be defeated in detail regardless of the size of the opposing force.⁹

Comparative lack of mass was the main reason that aircraft stationed on a floating airdrome could not normally operate successfully against an opposing land-based force. For this reason he thought that any invading air force from overseas would attempt first to seize or establish land airdromes on our off-shore islands and thence launch fresh attacks against the mainland of this country. Hence in his choice of primary targets for attack, the hostile air force complex loomed large, on the ground as well as in the air; due attention was to be paid to the "hostile air power, its airdromes, shops, supply points, and communication systems." Here then was an explicit reiteration of Douhetian thought on counter air force strategy.¹⁰

While defeat of the rival air force insured command of the air, it still could not be equated with victory; only if one's air power was deliberately planned, organized, and used

⁹Ibid., 46-47, 313.

¹⁰Ibid., 47, 311.

to exploit the opportunity afforded by one's control of the skies, could an air force decide an armed contest. Here Mitchell insisted--like Douhet--that the basic principle underlying the organization of a nation's total air power must be an offensive one; this entailed the building of an air force "capable of the greatest radius of action practicable." Conveniently ignoring Britain's postwar switch to a defensive posture in the air, Mitchell justified this policy on the ground that "all of the great countries . . . are now organizing their air power for striking their adversary as far away . . . as possible." While this policy of course accorded fully with Trenchard's war-time precept of keeping the fighting at a distance from the frontier, the American was now clearly thinking of offensive striking power in terms of inter-continental warfare. "Aircraft of certain classes," he asserted, were already "able to traverse the air, all over the world."¹¹ The enemy he had in mind lay across the Pacific.

The Threat in the Pacific.--The policy of the United States, Mitchell believed, was "to keep its soil, institutions, and manner of living free from the ownership, the dominion, and the customs of the Orientals who peopled the shores of this greatest of all oceans." He saw this as a common policy among all the "white" powers of the Pacific. Sooner or later, the white and yellow races would clash in an inevitable conflict.

¹¹Ibid., 311, 313, 323.

Japan was the best organized and the most aggressive of the nations of the "Mongolian race" which Mitchell described as a "capable, strong, and virile people . . . perfectly able to defeat economically, possess and eventually absorb any other races crossing their paths." The Japanese, now a great power, wanted equality of position and freedom to live, move, and labor where they wished on a basis of full equality with the whites. Already they were beginning to organize the continent of Asia; this attempt might, through their powers of organization, "easily lead to a recreation [sic] of the greatest military machine the world ever saw." Hence the problem facing the United States was not simply one of political supremacy but involved the "very existence of the white race." Mitchell, accustomed since the days of the Spanish-American War to seeing America take a leading role in the affairs of the world, thought it "quite evident that the struggle must be taken up by the white inhabitants of the New World, and . . . by the inhabitants of North America primarily." He predicted that eventually the diplomatic means of handling these questions would fail, and that war would be our only recourse.¹² And in war the aerial weapon would be supreme.

Strategy in the Pacific.--Although air power would prove the most effective weapon in the American arsenal for war against the Eastern power, hostile, land-based air forces would conversely

¹²Ibid., 26-30.

make it impossible for our surface vessels to transport in time of war very many men or much equipment across the southern line of advance over the Pacific. The surface navy would be inhibited from operating offensively because carriers simply could not compete for control of the air against land-based aircraft, owing to the limitations of their decks. These he described as "so small, contracted, unstable, and exposed to hostile air attack that neither sufficient nor suitable air craft [could] be launched from them, to cope with air forces acting from shore bases." Hence he reasoned that the navy could not control the air over the fleet. Other possible measures were inadequate to sustain the fleet: concealment was impossible, and antiaircraft batteries, balloon barrages, and evasive action were ineffective. Yet the arsenal of land-based aerial weapons--bombs, mines, chemical weapons, air and water topedoes, and gunfire--could destroy or completely inactivate any surface vessel that "has been built or that can be built." In the face of such superior land-based power, overseas surface expeditions were no longer in the realm of strategic possibility. With Japan dominating the central and southern lines of advance across the Pacific, a conventional naval offensive against her was therefore completely out of the question. Navy operations, as far as offense was concerned, would be limited in the future to submarine warfare. Inability to maintain water communications with the Western Pacific caused Mitchell to recommend writing off the Philippines as indefensible.¹³

¹³Ibid., 23-24, 323.

Alternatively, Mitchell proposed that "all plans for offensive operations against Japan . . . be based on an advance through Alaska, the north Pacific, Kamchatka, . . . the Kuriles." In this way air power could be projected along a line of land bases from which direct operations against the main islands of Japan could be launched. Such an air offensive against Japan would be decisive, because all Japanese cities and centers of population were highly constricted, congested, easily located, and highly inflammable. Other arms might contribute, but clearly strategic air bombardment would play the paramount and decisive role.¹⁴

To permit effective joint operations, the American command structure in the Pacific would have to be greatly strengthened, particularly by instituting unified direction and control. Mitchell observed that in sharp contradistinction to other countries in the Far East we had no single command in "Hawaii or the Philippine Islands. . . . Our present system will be provocative of a greater amount of friction in time of war than . . . in time of peace. There should be a single commander charged with the complete defense of these possessions." A similar type of unified control was recommended for the defense of the continental United States embodying all operating units--land, sea, and air. If the air factor in the national defense equation was to be developed to its full potential, it was incumbent upon the nation's leaders to recognize the imperative

¹⁴Ibid., 24, 324.

need for drastic reorganization.¹⁵

Asserting, in terms reminiscent of Douhet, that "air forces must be designed primarily to attain victory in the air," Mitchell once more recommended that air forces be separated from surface establishments since they had no necessary relation to ground forces and warranted an entirely separate budget. Through autonomous budgetary control, the air arm could maximize prospects for the fullest development of aviation. Moreover, the functions and responsibilities of the air, ground, and water forces required redefinition and clarification; it was especially necessary that the air force be assigned a definite mission in its particular sphere of responsibility. Mitchell believed it should be charged with "responsibility for the complete air defense of the nation." Such a mission would give the proposed air department centralized control over all functions of air power, and terminate the contemporary dissipation of aerial operations among the several services which so reduced defense efficiency.¹⁶

As for the protection of the coasts and interior, Mitchell reiterated that the navy's mission in coastal defense had "ceased to exist"; while admitting that the mission of the army remained much as usual, he asserted that fixed coastal artillery, except at those few points where important centers could conceivably be threatened by submarine fire power, had become superfluous, and

¹⁵Ibid., 311, 323-324.

¹⁶Ibid., 313, 321, 325.

recommended that appropriations for unnecessary coastal gunnery be devoted to air power instead. The nucleus of the Mitchellian defense system remained air power, built as before around an offensive air force comprised of two-thirds pursuit and one third bombardment, but the tactical element of greatest importance on the battlefield, attack aviation, was subsumed under bombardment, provided the former continued to be an element in the American Air Service.¹⁷

Thoughts on Air Power in Future War, circa 1924

Not long after his return from the Pacific in July, Mitchell amplified, in the preparation of manuscripts and printed matter, some of his thoughts on war and the influence of air power in future wars. The more important ones are summarized or excerpted below. Especially significant is the stress upon the Douhetian concepts of the offensive nature of the air weapon, the necessity of attacking first, and the decisiveness of air power.

Putting an opponent on the defensive in the air is much more valuable comparatively than putting him on the defensive on the ground. Armies may dig trenches. . . . This cannot be done in the air . . . for if . . . they [airplanes] are not in the air when the hostile air force appears, they will have no effect on it. . . . In the future, the country that is ready with its air force and jumps on its opponent at once will bring about a speedy and lasting victory.¹⁸

To know what to jump on was certainly important too. More and more Mitchell seemed to see destruction of the air force on

¹⁷Ibid., 312-313, 316-317.

¹⁸Typescript, "The Influence of Air Power in Future Armed Contests," n.d., ca. 1924, 6-7. Mitchell Papers, Box 24.

the ground as the key to the speedy victory he prophesied:

Once an air force has been destroyed it is almost impossible to build it up . . . because all the places capable of building aircraft will be bombed, all the big air stations that train pilots and flyers will be destroyed.¹⁹

Logically this led him once more to the concept of strategic bombardment, for the factories supplying the engines and aircraft frames constituted parts of the nexus of war industry. Therefore air power would normally have to strike at a considerable distance. Aircraft plants would be among the targets Mitchell categorized for strategic attack, once opposing air forces were vanquished:

"centers of production, means of transportation, agricultural areas, and shipping, not so much the people themselves."²⁰

[Italics added.] In an age of popular pacifism, the latter qualification was no doubt deemed appropriate.

Moreover, air power employed on such an extensive basis would "make the contest much sharper, more decisive, and more quickly over with, which, in all cases, will result in much less loss of life and treasure." Thus Mitchell, like Douhet, saw strategic air warfare as short, decisive, and cheap. Consequently a war so waged would be, he believed, a "benefit to civilization."²¹

In terms remarkably similar to the later arguments of the nuclear age, Mitchell declared that air power, in fact, offered

¹⁹Ibid., 7.

²⁰Ibid., 13. Cf. 1922 listing in Notes on the Multi-motored Bombardment Group, 84.

²¹Ibid., 13-16.

"the one great hope" of eliminating war through its ability to make war "so terrible that nations will hesitate to engage in it." This property, together with other unique characteristics, had already given air power "complete mastery over sea power, within the radius of its operation," and had made it for the future "the deciding factor in military operations." Truly our first line of defense would be in the air, whether against hostile air or transwater attack.²² Until these fundamental principles were recognized, however, the air power of the United States would "continue to flounder in the slough of aeronautical despond."²³

Concept of War and the Role of Air Power--1925

1925 marked the climax of Mitchell's intensive efforts in the arena of national defense and in the realm of air doctrine. He refined the intertwined themes of continental defense built around air power, and offensive overseas war based on the air element. Though Mitchell in Winged Defense placed the greater emphasis on continental defense and couched much of his language in appealing isolationist terms and concepts, the note he struck on offensive overseas warfare was nevertheless clear and unmistakable.

Seemingly heeding Douhet's admonition on formulation of doctrine, he advised that "underlying thought and reason must

²²Typescript, no title, Sep. 20, 1924, 2-3, Mitchell Papers, Box 24.

²³Report of Inspection in the Pacific, 324-25.

govern, and then the organization must be built up to meet it." Recognizing that "to follow blindly what another nation does is merely to invite disaster," he saw that every state must solve the problem of security within the particular context of its geographical, military, political, and other circumstances.²⁴ In hostilities between major powers, however, Mitchell remained convinced of his new view as to the role and decisiveness of air power. Air power would prove decisive because war was now primarily a strategic--rather than tactical--struggle:

The destruction of individuals and property beyond the fighting zone becomes a function of air force which is, or should be, unaffected by the swaying of the battle line. This work of destruction by bombing and other methods should be continued from the outbreak of hostilities until the war is finished, and should be waged primarily . . . [against] those industries and equipment that form part of or are auxiliary to, the enemy's military establishments.²⁵ [Italics added.]

As future war would therefore involve the entire nation in combat, like Douhet he thought that the old ideas, treaties, and conventions inspired by humanitarian impulses to mitigate the cruelties of war would necessarily be altered, changed, or, he implied, rejected.²⁶

The Mitchellian Synthesis.--By 1925 Mitchell had clearly adopted the main outlines of the strategic bombardment thesis

²⁴Winged Defense (New York: Putnam, 1925), 19, 181.

²⁵Typescript, Reports, "Internal Operation," n.d., ca. 1925, 6 (Folder--1925: Organization of Air Service), Mitchell Papers, Box 32.

²⁶Ibid., 4; Winged Defense, 214.

propounded by Douhet. Yet, while observing that advances in bombardment aviation had been "phenomenal" since the World War,²⁷ in response to a question in November 1924 as to the relative value of pursuit planes against bombardment planes flying in formation, he maintained that "the bombardment planes haven't any chance."²⁸

But he did not accept the contemporary Douhetian solution to the problem of bomber protection--a screening formation of slow, heavily armed combat planes. Instead, Mitchell continued to place chief reliance upon specialized fast pursuit aviation which in the aggregate stood in the forefront of his ideal air force, in the ratio of two to one.

Recognizing clearly that the effectiveness of air power on an opponent varied inversely with distance,²⁹ Mitchell sought to make the radius of action the same for bombers and pursuit escorts.³⁰ His proposed solution (an actual operative one, according to his testimony) was the one ultimately adopted in 1943 when fighter protection became imperative after unescorted Eighth Air Force bombers proved unable to make deep daylight penetrations

²⁷Winged Defense, 164.

²⁸Mitchell Testimony, Nov. 10, 1924, pp. 1324-25 in Proceedings of the Board, Enclosure to Report of Special Board to Secretary of the Navy . . . , Jan. 17, 1925. In U. S. Naval History Div. (General Board File). Hereafter cited as Eberle Board Proceedings (after Admiral Eberle, Chairman).

²⁹Winged Defense, 182.

³⁰Eberle Board Proceedings, 1324-25.

against such targets as Schwinfurt without excessive losses. It was a notable observation when he explained in late 1924 that "we are attaining this greater radius of action for pursuit planes by means of auxiliary tanks which can be dropped."³¹ While varying rates of speed between the two types remained a problem,³² such planes could attack at a distance calculated to "keep all aircraft away from our borders."³³ These long range, heavily armed fighters would make use of the closely-spaced land masses and islands in the Northern Hemisphere. "With a pursuit aviation of this kind, our bombardment aviation could be accompanied and protected on its missions whenever necessary."³⁴

In addition to the long-range fighter escort, Mitchell called for another category of pursuit aviation to defend large population centers of critical importance. Planes of this kind were to be capable of "very great and rapid climb, of great maneuverability and ammunition capacity." He also foresaw the need for an extremely high altitude fighter to combat hostile aircraft "trying to break through . . . from 25,000 to 30,000 feet." These interceptors were to have an effective ceiling of 35,000 to 40,000 feet,³⁵ a capability hardly attained two decades

³¹Ibid.

³²Ibid.

³³Winged Defense, 182. Range in 1924 was about 550 miles, but was being projected to 750 miles, Mitchell told the Eberle Board. Proceedings, 1325.

³⁴Ibid., 184.

³⁵Ibid., 182-84.

later. Besides insisting upon the development of several functionally specialized types of pursuit craft, Mitchell also differed from Douhet with respect to techniques of employment for obtaining control of the air.

Mitchell's own concepts for gaining command of the air evolved into a unique synthesis during the years 1924-1925. Though he had recognized since about 1922 the full implications of destroying the enemy air force on the ground,³⁶ the American airman was no doubt acutely conscious of the fact that the geographical location of the United States made it unlikely that surprise could be achieved against a hostile force approaching the United States. Similarly, in the event of an offensive air campaign, his composite strike forces³⁷ could hardly count upon surprising a transoceanic enemy air force on the ground. The problem, then, was how to defeat the enemy air force if it could not be surprised on the ground. Mitchell's doctrine was to press attacks on critical targets using long range fighter escort for the bombers;³⁸ by attacking an indispensable installation, he expected not only to demolish the target but to force into the air even an unwilling enemy air force, whereupon the fighters would undertake air battle while bombardment proceeded apace.³⁹

³⁶Notes on the Multi-motored Bombardment Group, 84-85.

³⁷Winged Defense, xviii.

³⁸Eberle Board Proceedings, 1324-25.

³⁹Typescript, "The Influence of Air Power in Future Armed Contests," n.d., ca. 1924, 6, Mitchell Papers, Box 24.

Hence Mitchell repeatedly pointed out the need to combine bombardment attacks with fighter offense forces for the control of the air. As late as 1925 he harked back to his tactical experience in the war, though he exaggerated it, and combined that lesson with the new concept of counter force strategy of attack on the ground:

It was proved in the European War that the only [italics] added effective defense against aerial attack is to whip the enemy's air forces in air battles. In other words, seizing the initiative, forcing the enemy to the defensive in his own territory, attacking his most important ground positions, menacing his airplanes on the ground, in the hangars, on the airdromes, and in the factory so that he will be forced to take to the air and defend them.⁴⁰

Once the potential for command of the air had been attained, he foresaw, like Douhet, that nothing could impede the operation of the air arm in a future conflict.⁴¹ For the present, however, the most important requirement was to obtain the right kind of national defense structure; one that would arrive at the correct decisions on tasks, force structure, and employment.⁴²

The most immediate and pressing need was to determine the necessary types of aircraft and to get them into production. For example, Mitchell at that time questioned the need for ground attack airplanes. Since American aviation should be designed rather to strike at great distances, heavy bombers and pursuit

⁴⁰Winged Defense, 199.

⁴¹Ibid., 203.

⁴²Cf. Douhet, The Command of the Air, Part I (Coward-McCann edit.), 76.

escorts were most needed. Therefore, it was vitally important to resolve the national defense wrangle, and to get authoritative decisions on what kinds of aircraft to build for both coastal defense and overseas warfare. Decisions were especially necessary because of the lead time required for development and production. Mitchell felt that the program of aircraft development should be planned at least seven years ahead. Under the existing service arrangement, with the army and navy controlling the defense establishment, he considered it impossible for the Air Service to obtain the required decisions which would permit it to build up its offensive aviation sufficiently to ensure command of the air against an enemy.⁴³

His basic plan for national defense continued to center around air power, but it had to be an independent air force. Greater strategic mobility was to be promoted through improved airway communications from coast to coast, permitting more rapid shifting of forces. Airways and communications were also to be developed to and from Alaska and along the Aleutian chain to Attu. His recommended deployment of aircraft within continental United States remained the same as in previous years, but notable additions were made for outlying territories-- 300 planes for Alaska and 400 for Hawaii, including a special complement of 100 for defense of the Pearl Harbor area. However, no airplanes were to be stationed in the Philippines, as

⁴³Winged Defense, 134-35, 188-89, 198, 216, 218, 221-22.

Mitchell regarded them not only as indefensible but also useless for offensive operations in the Western Pacific.⁴⁴ This deployment, featuring a preponderance of pursuit craft, together with Mitchell's references to the relative economic self-sufficiency of the United States, constitute the basis for the view that he advocated at that time a passive, isolationist policy for American air power.⁴⁵ Nothing could be further from the truth. Not only did he in his preface repudiate isolationism per se, but in various places throughout the book considered the question of overseas invasion in explicit language.⁴⁶ Mitchell saw national defense as consisting of four phases: (1) maintenance of internal security, (2) protection of the country's borders; (3) control of sea communications; and (4) prosecution of offensive wars overseas. In the first two phases air power and land power would work together; in the third phase aircraft and submarines would divide the tasks, the line of demarcation being the aircraft's effective radius of action; in the fourth air power would be the primary agent, assisted by submarines and ground forces. A string of land bases would have to be seized for air bases and held by ground troops; aircraft carriers could not possibly compare with air forces based on land. Mitchell clearly and prophetically envisaged a war of invasion across the seas based upon establishment

⁴⁴Ibid., 218-19.

⁴⁵Supra, chap V, n. 4.

⁴⁶Winged Defense, 101-102, 126, 134.

of the necessary control of the air.⁴⁷ Thus air power in his doctrine included both continental defense and overseas campaigns. Only air power could carry the war directly to the heart of the enemy country, ignoring its surface forces and striking directly at its power to make war! It was perhaps inevitable that the staking of such a large claim for air power would fan further the glowing flames of controversy over service roles in the War and Navy Departments.

⁴⁷Ibid., 101-102.

CHAPTER VII

EVOLUTION OF OFFICIAL CONCEPTS OF AIR POWER

The return of the stormy petrel of the Air Service from the Pacific in the summer of 1924 and his report in the fall signalled the beginning of a series of events which, within little more than a year, stirred and heated to white-hot intensity the struggle between him and the War and Navy Departments. From the tenor of his writings in the fall of 1924 it would appear that he was confident of achieving favorable changes in the national defense structure. It is surmised that his optimism derived in part from the efforts of the Lampert Committee, a select committee of inquiry into aviation matters. One of numerous Congressional investigations of the executive branch during the early twenties, it had begun by looking for an "air trust" and ended by probing into the entire relationship between air power and national defense. Two steps which Mitchell took did much to dramatize the issue of air power which had apparently slumbered during his absence. One was his appearances and pronouncements before the Lampert Committee in December 1924. The other was a series of articles which he prepared after receiving special, required permission

from President Coolidge--who conditioned it upon approval by Mitchell's superiors--and, consequentially General Patrick. Mitchell's intent of course was to stir up the public to pressure Congress into enacting new defense legislation. But in his testimony of February 6, 1925 he overplayed his hand. That proved to be the beginning of his undoing, as it led directly in March to his transfer to the Fort Sam Houston Air Station at San Antonio, Texas.¹ Mitchell's "sin" lay, apparently, in attacking as "confusing" or misleading to Congress and country certain testimony and statements made by some departmental officials, including General Patrick--who had endorsed the concept of a separate air force as the ultimate, but not immediate, solution of the defense problem. Mitchell soon recanted, but apparently this maneuver did not impress the War Department sufficiently to spare him severe consequences for his rashness.² Yet, even at a farewell luncheon attended by Patrick and other ranking colleagues in April 1925, Mitchell kept up the attack on the two "old executive departments," blaming them directly for holding up the prewar and postwar development of aviation in the United States. He remained firmly convinced that a change would come about "only through

¹Levine, 302-318. Mitchell, upon receiving a lower assignment, reverted to his permanent rank of colonel.

²Typescript, "Memorandum of Recommendations Submitted by General Mitchell and Not Acted Upon," p. 27 in Folder, Army and Navy Air Services, Recommendations, Mitchell Papers, Box 32.

the pressure of public opinion or war."³ During his subsequent sojourn in Texas Mitchell completed his book, Winged Defense, which came out for publication in August. At that point, fate seemingly intervened.

The reported loss of a navy seaplane on September 1, en route from San Francisco to Honolulu, and the crash of the naval airship Shenandoah on September 3--the flights of which were launched under questionable, debatable circumstances--provided an opening for another attack. Within forty-eight hours after the Shenandoah disaster, Mitchell launched a sharp, telling, and deliberate broadside against the Navy and War Departments. He charged nothing less than that these accidents were "the direct result of the incompetency, criminal negligence, and almost treasonable administration of the national defense by the Navy and War Departments."⁴ Mitchell's insubordination of course led to his court-martial, in November and December 1925, but the immediate and significant effect of his denunciation was to precipitate on September 12 a full-scale presidential inquiry into the role of the air weapon in national defense. The air power views of the Navy, the War Department General Staff, and the Office of the Chief of Air Service are described and compared in this chapter.

War and Navy Departments: Defense Policy and Organization

Throughout the entire inter-war period persistent and strong efforts were made to establish a separate air force and a

³"General Mitchell's Parting Address," National Aeronautic Assoc. Rev., III (June, 1925), 84, 87.

⁴Quoted in Levine, 327.

unified department of defense. Between 1919 and 1937 there were no less than 19 investigations into these two problems. The two questions were closely related and by 1941 were "indissolubly married." The major impetus for change emanated from the Air Service and evoked a generally sympathetic response from Congress. As might be anticipated, the existing major services consistently opposed both these proposals.⁵

From 1920 to 1935 for the first time in American history pacifism as well as peace was popular. War, militarism, armaments, alliances--all fell under the ban of popular disapproval if not outright indictment. The retreat from the League, the Washington treaties, and the Kellogg Pact were part and parcel of this expression of the nation's sentiment during the 1920's. Nevertheless, the widespread hunger for peace had only the most limited and indirect effects upon American military policy. Neither the popular vogue of isolationism nor the naive faith of a mesmerized public in the possibility of everlasting peace struck a responsive chord in either the military departments or the State Department. "The citizen's desires were something that had to be catered to and, at the same time, evaded."⁶

Likewise, the military successfully resisted heretical attempts at self-assertion and independence on the part of their

⁵Louis Morton, "Political-Military Collaboration," in Harry L. Coles (ed.), Total War and Cold War (Columbus: Ohio State University Press, 1962), 139-140.

⁶Arthur A. Ekirch, "The Popular Desire for Peace as a Factor in Military Policy," in ibid., 161-62.

"semi-services," the Air Corps and the Marine Corps. Though in general the two services rarely went out of their way to help one another, they seldom fought each other politically and achieved much inter-service success in a few areas such as strategic planning.⁷

Despite drastic postwar demobilization and budgetary retrenchment in the twenties, the peacetime army, already larger than its ante bellum predecessor, looked to rapid expansion from its professional nucleus in the event of full scale aggressive war. Not only did it have a carefully planned reserve training program and a good public relations staff, but its leadership, expressed through a strong general staff, was more influential than before the war. As for the navy, Senator Claude Swanson declared in 1924 that its power made the United States the strongest and the most threatening of nations.⁸ This situation obtained largely because of the figure which the navy cut in world affairs. It was not merely larger than the prewar navy; by the early 1920's it was second in the world and in process of implementing its 1916 building program of 10 battleships and six battle cruisers which, when completed, would give it equality with Britain by 1924.⁹ Largely as a consequence, the Washington

⁷Samuel P. Huntington, "Inter-Service Competition and the Political Roles of the Armed Services," in ibid., 180; Wheeler, Air Power Historian, VIII (Apr. 1961), 79.

⁸Ekirch in Coles, Total War and Cold War, 154-156, 164.

⁹Ropp, War in the Modern World, 259.

Naval Disarmament Conference of 1922 formalized American naval parity with Great Britain. As for relations between the armed forces, inter-service cooperation was institutionalized through the Joint Army-Navy Board.

The Joint Board had lapsed into desuetude under the later administration of Theodore Roosevelt and the subsequent ones of Taft and Wilson, and was practically defunct by the end of the World War. As it was the only official body established to coordinate the planning activities of the army and the navy, it was decided to revive and strengthen it in 1919. A measure of its effectiveness was provided in 1924 by Secretary of War Weeks who told a joint committee of Congress that, with the exception of one case which had to be referred to the President for final and prompt decision, the board had since 1919 treated over 300 cases involving joint action with unanimity. During the next decade and a half, another 300 cases were disposed of, with generally satisfactory results to both services. Nevertheless, there were some thorny matters which proved highly resistant to ready solution, notably the role of air power, joint operations, and Far Eastern strategy.¹⁰ And even here the two services were usually able to work out a compromise arrangement.

Concepts of Employment of Air Power: The Navy View.--The missions officially prescribed for the navy by the Joint Board were as follows: (a) "Battle-Fleet: to gain and maintain

¹⁰Morton, in Coles, Total War and Cold War, 135-39.

command of vital lines of communication by sea, thus insuring freedom of movement on the sea in one's own vessels and denying such freedom of movement to enemy vessels. . . . (b) Naval Coast Defense: . . . control the sea communications within the area to which assigned. (c) If the navy is inadequate to the task indicated above, it must be used to prevent the enemy from obtaining control of vital lines of communication."¹¹ Airplanes had not affected these traditional functions of the American navy during the World War nearly as much as the submarine. Certainly "they did not exercise any serious influence upon the conduct of the war at sea."¹²

It took Mitchell's demonstrations of air power against heavily armored sea ~~vessels~~ in July 1921 to jar the Joint Board into admission soon thereafter that aircraft in adequate numbers might prove the decisive factor in coastal defense operations.¹³ Following the September 1921 air tests, in which the Alabama went down in 30 seconds after being hit by a 2,000-pound bomb, the Naval Board of Observers decided, in their report to the Chief of Naval Operations, that aircraft constituted the best defense against air attack and that therefore aircraft carriers were

¹¹War Department Statement, by Brig. Gen. H. A. Drum, Asst. Chief of Staff, Opr. and Trng. Div., W. D. General Staff, before the President's Aircraft Board, Sep. 21, 1925, 22. Hereafter cited as War Department Statement.

¹²Navy Department, Report of Special Board, "Result of Development of Aviation on the Development of the Navy," Jan. 17, 1925, 28. Hereafter cited as Navy Aviation Report.

¹³Quoted in War Department Statement, Sep. 21, 1925, 22.

"absolutely necessary."¹⁴ Though the air service was assured a role in coastal defense, it had to share it with the navy. But the navy's view was that coastal defense was something which involved all branches of the army and navy and that there was "no sound reason why such army or navy air forces as happened to be available should not cooperate . . . to repel an attack."¹⁵ Air power thus accentuated an already existing problem. Although Congress in 1920 had assigned control of all land based bombardment aircraft to the army and given control of all fleet air operations to the navy, "the dispute over coastal air defenses remained unsettled until well into World War II."¹⁶ This chronic, running dispute over coastal defenses of the continent had its parallel in the overseas possessions, notably in Hawaii. There it was exacerbated by the problem of joint operations, another sensitive area for the army and navy, and one in which air power was to play an increasingly significant role.

Both military services, but particularly the navy, viewed with serious concern the American strategic position in the Western Pacific following the World War. Committed politically to the defense of the Philippine Islands, the United States government nevertheless refused to provide the military forces

¹⁴Lincoln, Military Affairs, XV (Fall, 1951), 155.

¹⁵Navy Aviation Report, 10.

¹⁶AAF Historical Studies, No. 6: The Development of the Heavy Bomber, 1918-1944 (Maxwell Field, Ala.: revised ed., 1951), 131, 136.

and installations necessary to hold them.¹⁷ The problem was compounded by the islands mandated to Japan in the Caroline and Mariana groups. Lying athwart the United States' lines of communication to its possessions in the Western Pacific, they threatened the security of fleet communications with the Philippines and Guam. Moreover, the Washington Naval Disarmament Treaty limited American strength in the Western Pacific vis-a-vis Japan and served more or less to equalize naval strength in that area. Furthermore, the United States fleet was not well balanced for Pacific type operations, being deficient in fast cruisers. Nevertheless, the naval treaty did allow fairly high limits for aircraft carriers, Britain and the United States each being permitted 135,000 tons and Japan 81,000 tons. With such relatively high carrier ceilings out of a total naval tonnage of 525,000 for the United States and 315,000 for Japan, both countries rapidly developed the carrier as a striking weapon.¹⁸ In this context, the strategic plan adopted by the Joint Board of the Army and Navy--War Plan Orange--posed a highly ambitious mission which the two services could fulfill only with extreme difficulty, if at all.¹⁹

¹⁷Morton, in Coles, Total War and Cold War, 142.

¹⁸Ropp, War in the Modern World, 260-61.

¹⁹Morton (Coles, Total War and Cold War, 142) believes that the Orange Plan, "the product of the best minds of a whole generation of planners, . . . set a task that was clearly incapable of achievement."

Faced with a virtually insoluble problem of war-time operations in the Western Pacific, a number of high naval officers were not entirely averse to utilizing the air weapon to assist the fleet. The general strategy enunciated in Orange, finalized in August and September 1924 (just after Mitchell's return from the Pacific but before his report was rendered) proposed to resolve the Pacific problem by carrying the war to Japan with both sea and air power. Following the imposition of a blockade, a strategic offensive by sea and air was to be mounted. Air attacks on Japan were to be launched initially from carriers, but were gradually to be superseded by army aircraft as bases were established. Japan's naval forces were to be the first object of attack; next, her economic life. Landings were to be made only if necessary.²⁰ The basis for this strategy had been established during the preceding year when the General Board of the Navy, comparable to the Army's General Staff, came out in favor of the use of naval air power in a war with Japan, aiming at the conduct of an intensive air campaign over Japanese territory.²¹

So important had military aviation become, not only for reconnaissance at sea and control of the air above the fleet but for tactical air strikes against enemy territory, that the Navy's Eberle Board in 1924 concluded that aviation was an

²⁰Report, Joint Army and Navy Basic War Plan--Orange, JB File No. 325, Serial No. 228, Aug. 15, 1924, pp. 1-2.

²¹General Board to Secretary of Navy, JBR File 425, Serial No. 1136, Apr. 26, 1923, quoted in Brune, 186-187.

integral element of the fleet and should not be separated from it. If, notwithstanding, separation were to be effected and an independent air establishment created, the navy's considered opinion was that such a development "would be most injurious to the continued efficiency of the fleet in performance of its mission."²²

In this connection, the navy rejected as unsound Mitchell's proposed offensive strategy against Japan--to be applied primarily though not solely by land based air power--even though it had just secretly endorsed a generally similar strategic concept utilizing air power as an integral part of the fleet. Nevertheless, it did recommend further development of both military and naval aviation. It called for a thorough-going, progressive, and long term aviation program in the navy involving aircraft construction up to the full limit permitted under the 5:5:3 ratio in naval air strength.²³

Despite some disarray within its ranks as to the relative importance and place of the air weapon in the surface fleet,²⁴ the navy remained on record as unalterably opposed to losing control over an arm which promised to augment its offensive

²²Navy Aviation Report, Jan. 17, 1925, 75-76.

²³Ibid., 10, 79-80.

²⁴Naval air enthusiasts and pioneers such as Admirals Sims, Fullam, Moffett, and Fiske thought naval air the most vital aspect of air power. See, e. g., Rear Admiral W. F. Fullam, "Aeronautics in the Navy," National Aeronautic Association Review III (Jan., 1925), 9-10.

power²⁵ in a critical, potential theater of operations. Thus the navy, despite its lack of a body of war experience in naval aviation, nevertheless proved flexible and realistic enough to benefit materially from the new air technology in general and from the aerial bomb tests of 1921 and 1923 in particular.

Concept of Employment of Air Power: War Department View.--

The army, comparatively familiar with the capabilities of the air weapon, proved even less willing than the navy to dispense with control over a military air organization whose maximum contribution to national defense, it felt, could be effected on the battlefield as an integral part of the army team. The tasks of the army as prescribed by the Joint Board comprised (a) the coastal defense of continental United States and its possessions; (b) the conduct of offensive operations against enemy possessions or homeland, once the navy had established control over lines of communication thereto; and (c) the relief of marine garrisons at temporary bases taken and secured by the fleet. In carrying out these missions, all components were expected to be guided by the army's doctrine on employment of forces. Training Regulation 10-5 identified the infantry as the basic arm of the army and stated unequivocally that its role was the crucial, decisive one for the army, all other arms or branches functioning only to support the

²⁵By 1930, the Chief of Naval Operations, Admiral Pratt, could proclaim that "the primary purpose of naval aircraft is the development of the offensive powers of the fleet and of advanced base expeditionary forces." [Italics added] Quoted in Brune, 247.

infantry.²⁶

War Department policy, premised on the inseparability of air and land operations, asserted the virtual impossibility of defining a separate, coordinate defense role for an air establishment. To buttress this contention during the fierce intra-service fight of 1925, it drew upon the findings of both the Dickman Board of 1919 and, especially, the Lassiter Board of 1923. As to the former, it is sufficient to note that the so-called branch board of the Air Service itself, headed by Brigadier General Foulois, had not recommended the Air Service be made a separate and independent organization; the War Department board, which reviewed all the subordinate branch board reports, concurred emphatically.²⁷

However, the War Department's Lassiter Board, convened in March 1923 by Secretary of War Weeks to consider reorganizational proposals by Major General Patrick, agreed in several respects with the Chief of Air Service.²⁸ This favorable attitude toward air power bore no immediate fruit, owing to protracted failure of the two military departments to agree upon proposed legislation required to put the recommended changes into effect.²⁹ Consequently the War Department had not formulated a program for congressional consideration by the time Mitchell's verbal bombshell

²⁶War Department Statement, Sep. 21, 1925, 45.

²⁷Ibid., Sep. 21, 1925, 45-47.

²⁸McClendon, Autonomy for the Air Arm, 1907-1945, 63.

²⁹War Department Statement, Sep. 21, 1925, 10.

precipitated the presidential investigation of national aviation in September 1925. As the Morrow Board was to resurrect and adopt some of the principles of air organization urged by the Lassiter Board two years earlier, a review of the latter's findings is in order.

The Lassiter Board called for a progressive development of military aviation extending over a ten-year period, based upon a minimum peacetime establishment, a maximum of reserve officers on active duty, and a long term program of military aircraft procurement. The ten-year expansion program was aimed at bolstering the sagging aircraft industry and restoring the vigor of the air arm--so sapped by reductions in men and planes as to be declared in critical condition. Equally important was its modified endorsement of General Patrick's recommendation to reorganize the air component into two groupings, one consisting of observation and balloon units which would function strictly with ground combat arms; the other comprising pursuit, bombardment, and attack units--to be called the Air Force--which would operate more or less independently.³⁰ The Lassiter Board believed that the latter

³⁰McClendon, 63. The parallel to Douhet's Independent Air Force is arresting. Whether such a connection existed has not been established; it is surmised that the Assistant Chief of Air Service may have had a hand in inspiring or formulating this particular recommendation made in early 1923, a time when Mitchell was in the country and displaying other evidence of Douhetian leanings. It is interesting to note McClendon's further comment on the GHQ air force idea: "Two decades later an Army Air Force historian pronounced it as the concept of the strategic air force which was hailed as a new type of aerial combat unit when introduced in the North African campaign during the spring of 1943." (*Italics added*) Ibid., 64.

object could be achieved through establishment of an air force under General Headquarters (GHQ) control comprising bombardment and pursuit forces, but rejected the proposal to take control of attack aviation and protective pursuit from the field armies.³¹ The GHQ air force would operate under General Headquarters for assignment to "special and strategical missions," which might be executed "either in connection with the operation of ground troops or entirely independently of them." It was therefore to be organized into "large units, insuring great mobility and independence of action."³² In his final report in 1924, just prior to his retirement as Chief of Staff, General Pershing also acknowledged that the air service should remain available "for independent use in mass or otherwise wherever necessary, but always under the orders of the Commander-in-Chief of the armies."³³

While thus making some accommodation to the demands of the Air Service, at least on paper, the War Department nevertheless remained fixed in its conviction that war was essentially a matter of coming to grips with a foe on the ground. In 1925, contending that in future wars aviation would not be the deciding factor, Brigadier General Hugh A. Drum, then Assistant Chief of Staff and destined to serve into the 1930's as one of the War Department's chief authorities on aviation matters, set

³¹Ibid.

³²War Department Statement, Sep. 21, 1925, 11.

³³Ibid., 12.

forth the official view of the department on the role of the air weapon: "Military aviation is primarily an important and new means of transporting weapons and securing information. As such it has been and will be an auxiliary to the decisive element of the ground battle."³⁴ [*Italics added*]

Countering the demand for a separate air organization, the War Department further argued that the GHQ air force (under its Lassiter plan), if directed by an air officer, could "function as an independent air force and execute all air missions which might be assigned to the proposed independent air force." The army needed air units of all types, and they were either to be integrated with its ground units or come directly under control of its General Headquarters. It expressly rejected as "unsound tactically and strategically" the associated argument of the separatists that autonomy might alternatively be achieved by dividing military aviation into "service" and "combat" functions, with the army retaining control only of the former. On the contrary, air operations could not be divorced from land and sea operations, and there could be therefore no place whatsoever for any separate air command independent of the army and navy.³⁵

As events transpired, these arguments of the War Department, together with similar ones of the Navy Department, before the Morrow Board (as the President's investigating board was

³⁴Ibid., 60.

³⁵Ibid., 61; War Department Statement (also presented by Gen. Drum), Oct. 13, 1925, 2, 21, 38, 43, 49.

called, after its chairman, Dwight Morrow) in the fall of 1925 impressed the members much more deeply than did those of "the principal exponent" of an independent air establishment whose testimony, to the disappointment of sympathetic observers, consisted almost entirely of reading his book, Winged Defense,³⁶ published August 29, 1925 and described by The New York Times as an attack on the nation's air policies.³⁷

National Aviation Policy: Morrow Board

After a thorough series of hearings during September and October, the Morrow Board prepared its report, issuing it in early December before the Lampert study was finalized. Through this tour de force the executive branch's board of inquiry scored a distinct psychological advantage over the Lampert Committee whose legislative hearings had revolved largely around the testimony of General Mitchell.³⁸ This bold stroke added much to the impact of the report itself, largely nullifying the effect of the subsequent congressional report.³⁹ Initially directed by President Coolidge to determine the "best means of developing and applying aircraft in national defense" and to supplement the studies already made thereon by the military departments, the board in its report reflected generally the policy of the Coolidge administration and the War and Navy Departments. The Lampert

³⁶Arnold, 119-120.

³⁷Levine, 322.

³⁸McClendon, 65.

³⁹Ibid., 68; Arnold, 119; Levine, 332.

Committee--which submitted its report about a week or so later (though it had concluded its hearings nine months earlier)--sharply differed with the administration on defense matters, expressly calling for a unified department of defense containing an independent air establishment.⁴⁰ But it was the presidential board which set the tone and determined the direction of national aviation and defense policies for the coming decades.

While the President's Board of Aviation Inquiry in its report recommended a moderate, constructive governmental policy to put the civil aviation industry on firm foundations for future growth, it viewed national defense as a whole in conservative, narrowly defensive terms. It found no evidence to support the conclusion that there was any threat to the United States of invasion from overseas directly by way of air either at that time or in the foreseeable future. It regarded the fleet as the first line of defense. Naval aviation was to be maintained "in due relation to the fleet." The army's aviation requirements were to be determined in light of its function as an agency of defense. To bring air strength of the services up to an acceptable level the board recommended the adoption of a systematic five-year aircraft procurement program. Effective prosecution of modern military and navy operations made it mandatory for the army and navy to operate and control directly their own auxiliary

⁴⁰McClendon, 67-70. Air units would be provided the Army and Navy to meet their tactical requirements, but the air force would have its own separate establishment and independent mission. See also AAF Historical Studies, No. 25, 12-13.

aviation. As to whether we had need of a separate air force over and above the air components required for use by the army and navy, the board concluded that aviation had not "yet demonstrated its value--certainly not in a country situated as ours for independent operations of such a character as to justify the organization of a separate department." However, board members deemed it important to distinguish functionally between the efforts of air troops acting in an auxiliary capacity and those of an air force acting alone on a separate mission. It therefore recommended that the designation, Air Service, be changed to Air Corps.⁴¹

Air Service-General Staff Consensus: TR 440-15

At the same time that Morrow's investigation was launched, the War Department hierarchy took rapid steps to put its aviation affairs in order. Protracted discussions between the General Staff, particularly the War Plans Division, and the Air Service as to the role of the air component within the army structure were quickly terminated.⁴² These focused around the proposed Training Regulation 440-15, "Fundamental Principles for the Employment of the Air Service." Because of the nature of this document as well as its bearing upon the relationship between

⁴¹Study, no title, attached to letter, War Dept., AGO to Secretary, Federal Aviation Commission, Aug. 14, 1934, 15-17, in Air Corps Library. For details consult Report of the President's Aircraft Board (Washington: 1925).

⁴²Letter, War Dept. Gen. Staff, Op. and Tr. Div., Brig. Gen. H. A. Drum, Asst. Chief of Staff, to Chief of Staff, Training Regulations No. 440-15, Fundamental Principles for the Employment of the Air Service, Oct. 27, 1925. In NA, AGO, CDF 321.9.

the Air Tactical School, the Office of the Chief of Air Service, and the War Department General Staff, it is instructive to trace the history of its formulation before examining the regulation itself.

The original paper was prepared at the Air Service Tactical School under the title Air Tactics and was submitted by the Chief of Air Service informally to the General Staff in May 1922.⁴³ When subsequently circulated for comment to the Army's General Service Schools at Fort Leavenworth, Kansas, it was sharply criticized by the Commandant, General Ely, who deprecated the proposed regulation as "largely an argument for the recognition of the aviation service as an independent force, on a parity with the land and naval forces."⁴⁴ In April 1923 the Chief of Air Service submitted a redraft to the War Department under the title, "The Air Service--Fundamental Conceptions,"⁴⁵ but it too was rejected by General Smith, the new General Service Schools' Commandant, who asserted that the anticipated functional division of the air arm into air force and air service was "not only unsound but . . . extremely dangerous." He was concerned lest such a doctrine serve to remove the bulk of the air arm from its primary role as an auxiliary to a new mission of waging warfare

⁴³Ibid., Enclosure No. 2.

⁴⁴Quoted in ibid.

⁴⁵OCAS to Commandant, Army General Service Schools, through AGO, Apr. 26, 1923 (signed [Major] W. H. Frank, Executive). In NARG 94, AGO 062.12 (1923).

independently of either army or navy.⁴⁶ A subsequently revised manuscript submitted by the Air Service in early 1924 presumably also met with disfavor and was "returned at the request of the Chief of Air Service on May 24."⁴⁷ In June the Office of the Chief of Air Service (OCAS) again changed the title and submitted the "first tentative draft" of "... . Fundamental Principles for the Employment of the Air Service," adding that it "was prepared by Major Milling at Langley Field."⁴⁸ General Patrick desired General Drum to read the rough draft so that he might criticize anything he considered "fundamentally wrong," after which the training regulation would be rewritten.⁴⁹ After repeated shuffling between the General Staff and OCAS,⁵⁰ this draft was suddenly expedited in September 1925. The War Department accepted all the 74 changes made by the Chief of Air Service when he returned the manuscript on September 21. After minor alterations, General Drum on October 27 informed General Hines,

⁴⁶Ibid., Second Ind., General Service Schools to AGO, Nov. 6, 1923, 2-3, 5.

⁴⁷Drum to Chief of Staff, Oct. 27, 1925, Enclosure No. 2, p. 3.

⁴⁸OCAS, Trng and War Plans Div., Maj. B. K. Young to Lt. Col. W. C. Johnson, Gen. Staff, June 19, 1924. In NARG 94, AGO 062.12 (1924). Persistent efforts to locate the Milling or ASTS draft have not been successful, either at N.A. or USAF Archives.

⁴⁹Ibid.

⁵⁰See also criticism by Army War College. The Army War College, Washington, D. C., to AGO, First Ind., Jan. 20, 1925, Trng. Reg. 440-15, 2.

the new Army Chief of Staff, that the manuscript of TR 440-15 was ready for publication, both "the Air Service and the Operations and Training Division being in accord."⁵¹

In view of the persistent opposition within leading army circles to any autonomous mission for the air arm, the final version of TR 440-15 was comparatively progressive for its time. Such, however, is not the prevalent opinion among air historians.⁵² Certainly the regulation went well beyond the restrictive defensive thinking which pervaded the report of the Morrow Board. TR 440-15, finally printed on January 26, 1926, was a composite based largely on the Lassiter Board findings, the priority of the army ground mission, and a skilful blend of Douhetian doctrine then being developed at the Air Tactical School.

Concepts of Employment of Air Power: The Air Service View.--In TR 440-15 the Air Service declared its mission to be twofold: (a) "to assist the ground forces to gain strategical and tactical successes" by destroying enemy aviation, attacking enemy ground forces and associated objectives, and protecting friendly forces from hostile observation and attack; and (b) to furnish aerial observation for information, adjustment of artillery fire, messenger service, and special transportation. All air units were to be organized and trained on the fundamental principle of helping the ground forces to achieve a decision.

⁵¹Drum to Chief of Staff, Tr. Reg. 440-15, Oct. 27, 1925.

⁵²Cate, Air Univ. Qrtly. Rev. I (Winter 1947), 14; USAF Hist. Studies No. 89, 40.

The nature of air support varied from close tactical coordination on the battlefield to more remote strategic cooperation against distant enemy targets.⁵³

Very much as in the Lassiter formula, "Air Service troops" were assigned to functional units comprising:

- (a) observation aviation as an integral part of divisions, corps, and armies;
- (b) an army air force of attack and pursuit aviation, also organized as an integral part of each field army; and
- (c) a General Headquarters (GHQ) air force of bombardment, pursuit aviation, and airships forming a part of General Headquarters.

Pursuit aviators, in the army air force, acting under direct army command, were to protect "ground forces from aerial attacks" as well as furnish cover for aerial observation and attack forces. They were to do this primarily by seeking out, destroying, or driving off enemy air forces. Attack planes were to direct their fire against troops and enemy establishments. A noteworthy innovation in official American attack doctrine appeared here with the Douhetian injunction to neutralize or destroy antiaircraft defenses when they seriously interfered with air operations.⁵⁴

An over-all GHQ "air service" comprised a general reserve of air units for the field army as well as a GHQ air force organized into "large units capable of effective action within

⁵³War Dept., Air Service, TR 440-15: Fundamental Principles for the Employment of the Air Service, Jan. 26, 1926, 1. This regulation was not superseded until Oct. 1935.

⁵⁴Ibid., 5-7, 9. Pursuit forces were to act in an attack capacity when necessary.

the theater or against distant strategic objectives." This air force was supposed to be a "self-contained" entity, highly mobile and flexible in operations, able to shift the focus of its action from one theater to another and to transport all necessary associated personnel and equipment. Organized into air divisions, its objectives were (1) to obtain "command of the air" by defeating, destroying, or neutralizing enemy aircraft in the air and by the "destruction of enemy air bases on the ground"; [italics added] (2) to attack enemy ground forces and establishments within the theater of operation; (3) "to carry the war into the enemy interior by attacking his important strategical centers"; and, (4) when necessary, to attack enemy naval forces operating against the coast. The enemy's strategical centers were listed in the following significant order: (1) military and industrial centers, (2) mobilization and training centers, (3) military shipping and transportation centers, (4) bridges, dams, locks, power plants, etc., (5) war material depots. Both in the description of the GHQ air force and in the listing of target systems, there appeared the first clear indication of Douhetian influence on official doctrine. Accepted as the key to winning "command of the air," destruction of the enemy air force now meant systematic destruction on the ground as well as in the air.⁵⁵

For its guiding concept of employment, the GHQ air force was enjoined in terms reminiscent of Douhet to have its offensive

⁵⁵Ibid., 8-11.

power in readiness "for instant use" and to seize the "offensive in the air immediately" in order "primarily to secure control of the air, and secondarily, to disrupt and delay enemy communications and ground establishments" [sic]. Once the hostile air force was defeated or neutralized, "critical areas of the enemy's country" might lie exposed, and aerial forces could then be employed "freely against the enemy's lines of communications or other strategical objectives." Until that time arrived, however, targets would be selected in accordance with the general situation or plan of campaign.⁵⁶

Tactical bombing would be directed against objectives on and to the rear of the battlefield, but it is notable that airdromes ranked first among recommended immediate targets, followed by depots, transport, and troop columns.⁵⁷ Strategic bombardment was to penetrate deeply into enemy territory "with the object of destroying sources of military supply, main lines of communications, mobilization, concentration, and military industrial centers." [Italics added] Such bombing was also intended both to weaken the enemy by causing discontent and alarm and to impel him to divert a significant portion of his fighter and anti-aircraft forces from the combat zone. These long range air missions, derived from the "broad plan" of military operations, were to be undertaken like all important bombing tasks "only after

⁵⁶Ibid., 8, 11.

⁵⁷Ibid., 11.

carefully prepared plans" for fighter protection had been arranged. It was anticipated that this would have the further advantage of forcing enemy fighters into the air to defend vital installations-- a key Mitchellian concept. This proviso in effect would limit large-scale operations to daylight hours, as fighters would operate only by day and for relatively limited distances.⁵⁸

In coastal operations, the GHQ air force was seen to be of special value, attacking such enemy vessels as might venture within its radius of action.⁵⁹ The sections on air defense of the coast, written almost entirely at the Air Service Tactical School in the spring of 1925,⁶⁰ were based upon the Mitchellian doctrine of aerial attack against surface vessels.

Evaluation

Mitchell's influence, as well as War Department doctrine, was no doubt partially responsible for the offensive note struck throughout the Air Service manual--war was to be carried to the enemy and a decision sought over his territory. The influence of Douhet was also notable; for the first time in a manual systematic destruction of the enemy air force on the ground was recognized as an effective means of gaining "command of the air." To more varied influences may be attributed the strategic air warfare concepts

⁵⁸Ibid., 8, 11.

⁵⁹Ibid., 8 (Par. 14.d. 4 and 5).

⁶⁰ASTS, Langley Field, Va., to OCAS, First Ind., May 18, 1925, Comments on TR 440-15, 4. (Signed Maj. O. Westover, Commandant).

embodied in TR 440-15; the emphasis on initial attacks against enemy concentration and communication centers reflected the European idea, elaborated by Mitchell in 1922, regarding prevention of contact between rival ground forces through disruption of mobilization. Insofar as the object of such attacks was to cause discontent and alarm, they probably derived in part from Trenchard's high estimate of the morale effect of strategic bombing in the World War. But Douhetian influence might well have played a part, especially since other elements of his theory were accepted. The air experience of the British and their erection of the elaborate London defense system doubtless contributed in large measure to the belief that strategic attacks on the home front might well force the enemy to divert a significant portion of his pursuit and AAA forces from the combat zone. The special role accorded the GHQ strategic striking force was probably varied in origin, dating to the war-time experience of the British independent air force and revived through the Douhetian emphasis upon the Independent Air Force. Certainly among the most immediate and significant reasons for War Department acceptance of the idea of an independent air striking force were Mitchell's crusade for a separate air force and Sherman's functional division of the air arm into "air force" and "air service" in Air Tactics in 1922. In furnishing the section on coastal defense and in presumably supplying the basis for a new counter-air force strategy, the Air Service Tactical School played an important part in the formulation of

official doctrine in areas pioneered by Mitchell and Douhet, respectively. More important still was its formulation of a comprehensive, new theory of air power employment during 1925 and 1926.

CHAPTER VIII

EVOLUTION OF AIR POWER DOCTRINE AT THE AIR TACTICAL SCHOOL, 1923-1926

The 1924-25 school year saw the departure of Major Milling. It may be recalled that at the end of the 1923-24 school year Milling, probably alluding to Air Tactics (1922), had spoken of school texts which had become authority for the work of the Air Service. Subsequently a major textbook-writing program was undertaken under the direction of Captain Naiden, Director of Instruction, with the aim of putting textual preparation on a systematic basis.

The first fruit of that program was the text, Employment of Combined Air Force, 1925-26. According to the annual report for 1926, it was 90 per cent completed as of June 30. It was published later in the year, though still dated 1925-26. Therefore this text chronologically follows TR 440-15, published in January 1926. Before discussing this new text, however, it may be well to examine briefly the status of doctrinal thought at the school during the years 1923-26, as reflected in the texts of that period.

Traditional concepts prevailed during those years, with

the texts generally following Air Tactics (1922). In the only extant bombardment text, objectives for tactical bombing in land warfare comprised, in order, ground forces, pursuit airdromes, and vital materiel.¹ Strategic bombing was seen as distinctly subordinate to tactical operations.

Its [bombardment's] use on strictly strategical missions is held to be in the same category as any other act of strategy; it is a necessary adjunct to tactical employment; it will have an important bearing on the outcome of the war, but it must not take precedence over the support of ground operations by proper tactical employment.²
[Italics added]

On the other hand, attack aviation seemed to have lost some of the impetus given it by the World War and Air Tactics. Instead of carving out an independent tactical role and making it rely increasingly upon its heavy armament for protection, school authorities called for a pursuit umbrella:

The mission of pursuit aviation in protecting attack missions is to clear the air of enemy offensive aviation in the area of attack operations and to accompany these missions wherever possible.³

Pursuit aviation of course remained the backbone of the air force and the key to victory in the air. Much different from the texts of the early twenties in outlook, concept, and theoretical development was Employment of Combined Air Force.⁴

¹ASTS, Bombardment, 1924-1925 (Fort Monroe, Va.: 1925), 4, 59-65, 70, 74, 75-76, 84.

²Ibid., 76-77.

³ASTS, Attack Aviation (n.p.: 1923), 2.

⁴Nevertheless, it should be noted that coexisting with the new outlook in Air Tactical School concepts, different, if not contrary or opposed, views continued to be propounded simultaneously. See, for example, Bombardment, 1926-27.

Concept of War: Objective--The Enemy Population

This text was the first to expound systematically the concept that the true objective in war was no longer the enemy force in the field but rather the enemy population and vital points in his homeland. Air forces, capable of operating in three dimensions, could now strike at any time the enemy's front, flanks, or rear with equal facility. Thus the enemy's will to resist could be reduced at the beginning of hostilities by using the air force to attack the very seat of his power. In a typically Douhetian passage, the anonymous authors described such strategic employment of air forces "as a method of imposing will by terrorizing the whole population of a belligerent country, while conserving life and property to the greatest extent." This method was greatly to be preferred to "gradually wearing down an enemy to exhaustion."⁵ Douhet's concept of strategic air warfare thus struck a responsive chord at the Tactical School in the widespread postwar reaction to protracted military struggles.

Concept of Employment: General

The new doctrinal emphasis on bombing was shown to be a logical development, for the airplane lent itself naturally to offensive--rather than defensive--employment: "The extreme mobility of and extensive radius of action of the airplane leads to the conclusion that the bulk of the air force" should be massed as a striking unit and controlled "by one hand." They

⁵ASTS, Employment of Combined Air Force, 1925-1926 (Fort Monroe, Va.: 1926), 3, 22. Hereafter cited as Combined Air Force.

were pleased to observe that the current plan of organization (TR 440-15, January 26, 1926) conformed "to this principle in providing a large concentration in the G.H.Q. reserve." This air force was described as "a highly mobile force of tremendous power" which could quickly be thrown into action at widely separated points.⁶ It represented, on paper at least, the realization in embryonic form of the Independent Air Force idea extolled by Douhet.

The ordering and scale of tasks expected of the GHQ air force was provided in a statement of mission requirements. The large units within that force were to be "employed in vigorous offensive action from the beginning of hostilities to:

- 1) Obtain COMMAND OF THE AIR - - - -
- 2) Further the national aim in STRATEGICAL OPERATIONS - - - -
- 3) Support the operations of the ground forces in TACTICAL OPERATIONS - - - -
- 4) DEFEND THE COAST against attack - - - -"⁷

The general procedure in this chapter is to treat each of these four tasks in turn.

Command of the Air

Air power had to be employed offensively because the air force was essentially an offensive weapon and experience had proved it "impossible to defend absolutely an area against a determined, well equipped and skillful adversary." World War

⁶Ibid., 4.

⁷Ibid.

examples were cited to show "the futility of employing an air force defensively in major operations." The only defense was the offense. Thus the reader was psychologically prepared for the shocking thought that pursuit was essentially defensive in nature and in fact incapable of executing the mission of sky control traditionally associated with it:

Due to the innumerable avenues of approach and withdrawal in the air, it is futile, particularly at the beginning of hostilities, to attempt to stop hostile aerial activity through aerial combat activity alone. [*Italics added*]

Even with the most dedicated application of the principle of the offensive in the "almost limitless dimensions" of the sky, it was manifestly impossible "absolutely to prohibit an enemy from executing all missions of importance in the air." Hence command of the air, though impossible of complete attainment, "would have to be sought by different means from those employed in the past."⁸ In other words, Douhet's positive, methodological approach to the problem was to be applied. Up to that time, control of the air was considered to be a task falling entirely within the province of pursuit aviation, for as Air Tactics in 1922 explained, the doctrine of pursuit was ipso facto the doctrine of the air force, to seek out and destroy enemy aviation in aerial

⁸Ibid., 4-5, 9, 23. This marked the first use of the term, "command of the air," in the extant ASTS manuals and texts. Previously, terms such as "air supremacy" (temporary and local) and "control of the air" were used, and with a different connotation. The meaning here was the meaning that Douhet gave the term. To make the meaning clearer, the authors drew an analogy between sea and air forces--the same one used by Douhet to drive home his point. Cf. Command of the Air (Faber edition), 21, 83.

combat. Now, however, the faultiness of this method had been detected; the source of error was to be exorcised, and the only certain remedy applied--true offensive action! The school text explained how command of the air was to be achieved:

The command of the air is gained only through positive action, i. e., the offensive, the form of combat best suited to the air force, the arm which can never reach maximum efficiency in any form of defensive operation. [Italics added]⁹

Douhet used many of the same words in 1921, but fewer of them, to describe this concept of gaining command of the air:

Achieving command of the air implies positive action--that is, offensive and not defensive action, the very action best suited to air power. [Italics added. Identical words in both underlined.]¹⁰

Again, describing the meaning of the command of the air, the Air Tactical School text stated:

The belligerent which gains command of the air is in a position to conduct offensive operations on a scale which heretofore have been impossible. [Italics added]¹¹

Douhet said:

To have command of the air means to be in a position to wield offensive power so great that it defies the imagination. [Italics added]¹²

Continuing, the Air Tactical School text emphasized the "decisive importance" of the new concept of command of the air.¹³ Douhet

⁹Combined Air Force, 10.

¹⁰Command of the Air (Faber ed.), 21. Subsequent citations are to this edition unless otherwise noted.

¹¹Combined Air Force, 10.

¹²Command of the Air, 24.

¹³Combined Air Force, 10.

had declared himself in ringing terms on this critical point:

Command of the air means . . . complete protection of one's own country, the efficient operation of one's army and navy, and peace of mind to live and work in safety. In short, it means to be in a position to win. To be defeated in the air, on the other hand, is finally to be defeated and to be at the mercy of the enemy.¹⁴

The concept of air control would have to be expanded to involve the effort of "every branch of the air force." Command of the air must be understood in a new context as involving forces which had "not been used to the greatest possible extent and with the maximum efficiency."¹⁵ Here, clearly, the authors were alluding to the radically different use of force which Douhet advocated for attaining command of the air--both as to the composition of the forces required and the means or methods of employing them for that object.

The New Philosophy Verified by Theory and Empiricism.--

The authors of this radical doctrine of air warfare were at some pains to assure their readers that it was well grounded and sound--both in theory and fact. To furnish the necessary proofs, they resorted to Douhet's carefully reasoned arguments. That they made specific borrowings of phrases as well as supporting ideas is evident from the following analysis of each of the underlined words or phrases as used originally by Douhet.

Though conclusions may be reached, which are based on theory, as to the vital importance of command of the air in future warfare, they are founded on data which are absolutely positive, i. e., the performance characteristics of aircraft,

¹⁴Command of the Air, 24.

¹⁵Combined Air Force, 9-10.

their destructive powers, and their effectiveness, against all types of objectives on both land and sea.¹⁶

First, it is to be noted that the ASTS writers struck a new note by redirecting thought to what war in the future would be like. This was one of Douhet's major concerns, upon which he predicated much of his argument: "The character assumed by the war of the future [italics added] is the fundamental basis upon which depends what dispositions of the means of war will provide a really effective defense of the state."¹⁷

Next, as to the school's allusion to conclusions based on theory, the authors were probably referring to the following or a similar passage in Douhet:

All that is a present possibility . . . and proclaims aloud for anyone to understand that to have command of the air is to have victory. . . . [Original italics] Reasoning from the facts along the lines of logic, this is the conclusion we have reached. . . . When conclusions are reached by adherence to logic from actual verifiable facts, those conclusions ought to be accepted as valid, even if they seem strange and radical, in direct contradiction to conventional thought patterns or fixed habits of mind based upon other facts, equally positive and verifiable to be sure, but entirely different in nature. To come to any other conclusion would be to deny reason itself.¹⁸ [Italics added]

The passage cited in the Tactical School text also declared that conclusions regarding command of the air were based too on positive empirical data, including performance characteristics of aircraft. This would appear to be an unmistakable reference not only to the immediately preceding quotation but more particularly

¹⁶Ibid., 10.

¹⁷Command of the Air, 11.

¹⁸Ibid., 26.

to ones such as the following from Douhet's dogmatic argumentation on properties of aircraft.

Now let us try to determine the general characteristics of planes suitable for bombing units. It is the functional characteristics--the performance--of a plane that we must determine here: . . . these include speed, radius of action, ceiling, armament, and useful-load capacity.¹⁹ [Italics added]

Very different is my conception. . . . Whether bombers or combat planes they need no more than a medium speed.²⁰

What determines victory in aerial warfare is firepower. Speed serves only to come to grips with the foe or to flee from him, no more. A slower, heavily armed plane able to clear its way with its own armament can always get the best of the faster pursuit plane.²¹

As to data on the destructive powers attributed to bombardment against all types of objectives, the ASTS writers followed in all probability Douhet's extended and repeated references to massive aerial devastation by various agents, of which the following is typical:

It is easy to see how the use of this method . . . bombing by gas, incendiaries, and explosives could completely wreck large areas of population and their transit lines during crucial periods of time.²²

Having demonstrated the decisiveness of the command of the air in future warfare, the possibility of its attainment, and the proofs of the theory, the authors of Combined Air Force went on to make a significant departure from previous doctrine: "Before

¹⁹Ibid. (Coward-McCann edit.), 38.

²⁰Ibid. (Coward-McCann edit.), 47.

²¹Ibid. (Coward-McCann edit.), 44.

²²Ibid., 22-23.

attempting to strike the enemy a decisive blow on the ground . . . it is essential that the offensive power of the hostile air force be destroyed or neutralized." [Italics added] The special headquarters air fleet was to be "employed in vigorous offensive action from the very beginning of hostilities to obtain COMMAND OF THE AIR through the destruction or neutralization of aircraft in flight and by destroying the ground installations of the hostile air force."²³ All the latter--not simply pursuit fields, as was sometimes mentioned in the past--were blanketed under this sweeping injunction.

After showing that it was futile for pursuit to attempt to prevent enemy air activity, Combined Air Force concluded that "the only sure method of effective retaliation against air forces is to attack their bases or airdromes with other air forces."²⁴

[Italics added] This Douhet had set forth as follows:

The only really effective aerial defense cannot but be indirect; for it consists in reducing the offensive potentiality of the opponent's air force by destroying the source of aerial power at its point of origin. The surest and most effective way is to destroy the enemy air force at its bases, which are found at the surface.²⁵ [Italics added]

This method of gaining mastery of the skies called for an air force built around bombardment, not pursuit, with the latter reduced to a subsidiary role:

Against the hostile air force pursuit aviation executes normal offensive missions in the course of supporting bombardment and attack operations. [Italics added]

²³Combined Air Force, 11, 16, 23; Cf. TR 440-15.

²⁴Ibid., 23.

²⁵Command of the Air, 48.

Bombers and attack planes would of course strike the major blow against the enemy air force on the ground, endeavoring to prevent the enemy from getting "into the air in force." Further, associated operations aimed at paralyzing the hostile air force followed other parts of Douhet's formula for gaining command of the air: "Centers of concentration of the hostile air force are most important objectives. . . . The destruction of depots, assembly points for aircraft, and aircraft on permanent or temporary air-dromes will have a very decisive effect."²⁶

Unless destroyed at the outset, the enemy air force would of course remain a target system²⁷ for continued attack during successive phases of operations. However, the major objective of securing command of the air was to exploit it strategically, as the following Douhet-tinged passage revealed:

The hostile air force is always an objective of great importance. Once it is neutralized or seriously crippled, both the Air Service and the ground troops can proceed with the accomplishment of their missions unhindered. And by throwing the full strength of the air force against the opposing air forces at the start of hostilities an advantage may be gained which should lead quickly to the defeat or annihilation of the enemy.²⁸

Strategic Air Warfare

With this text the Air Tactical School broke ground doctrinally not only in the area of counter-air force operations but also in that of strategic air bombardment, thus laying the

²⁶Combined Air Force, 24-25.

²⁷A system of targets each of which is functionally related either horizontally or vertically to every other target in the system. USAF Dictionary, 514.

²⁸Combined Air Force, 23-24.

foundations for the school's subsequent advocacy of bomber supremacy. Taking as its starting point the commonly accepted objective of undermining the enemy's morale and will to resist, which traditionally was assumed to apply to the armed forces, the text asserted, as aforementioned, that this objective might possibly be attained "at the beginning of hostilities" by using air power to terrorize the civil population and demolish vital targets in the enemy state itself. Douhet, it will be recalled, had declared that aerial offensives could bomb the interior of the enemy's country so devastatingly that the physical and moral resistance of the people would collapse.²⁹ Initial action of the air force, however, would have to be directed against pre-designated objectives during so-called first phase operations. Such operations were confined to the time periods of enemy mobilization and concentration, preparatory to assumption of combat positions. The enemy's military and economic posture at that time were thought to present most favorable opportunities for using the long-range striking power of the air weapon, the object being "to interfere with or prevent" the completion of his preparations. All points of concentration for enemy forces were to be attacked "without interruption."³⁰

Industrial as well as military mobilization of the enemy was also to be "attacked with all the power of the air force."

²⁹Command of the Air (Coward-McCann edit.), 20-23, 35, 61.

³⁰Combined Air Force, 23-25.

Both physical and morale objectives were identified in this rationale for strategic bombardment:

The destruction of industrial centers which manufacture munitions or which interfere with their production, will have a very detrimental effect on operations in the combat zone, since these points are responsible for supplying the 'sinews of war.' . . . Successful air force operations against these sources . . . may so delay a campaign as to preclude its realization. In addition . . . they are a powerful means of undermining the morale of the civil population.³¹

Though admittedly the consequences which might be expected to flow from such strategic operations remained "a matter of conjecture," there was abundant reason to believe that such employment of air forces would be both large in scale and by no means dictated by requirements of the ground situation.³²

Seeking to gauge the possible effectiveness of such air operations, the authors pointed to the mobility and radius of action of air forces as conferring advantages of unquestionable importance. They permitted the air force to conduct strategic operations either independently of tactical operations or in conjunction therewith. The mere fact that ground forces might be engaged in important tactical operations did "not make necessary the abandonment of strategical aerial operations." On the contrary, the air force "should be used extensively in strategical operations." And the GHQ air force represented "the only means at the disposal of a commander for striking quickly, and with decisive effect, an enemy's bases and centers

³¹Ibid., 24-25.

³²Ibid., 11-12.

of concentration." Nor must he fail to realize that bombardment was, moreover, a weapon which might be used "to destroy sources of supply and to undermine national morale with the minimum expenditure of effort and material."³³

The authors of the text asserted the Douhetian maxim that "in any scheme of strategical operation the object is to cause complete destruction or permanent, irreparable damage to the enemy which will have a decisive effect."³⁴ [Italics added] It was at this point that the Air Tactical School proceeded to integrate unavowed Douhetian doctrine with the already budding American practice of precision, pin-point attacks. The idea of sustained precision attacks according to a pre-determined plan which identified a selected portion of the enemy's organism, already evident in Sherman's Air Tactics of 1922 and in the school's Bombardment text for 1924-25 as well, was now further amplified and illustrated in Sherman's book, Air Warfare.³⁵ Combined Air Force reiterated Sherman's emphasis upon strict adherence to a well defined plan of action. Demonstrating less faith in the efficacy of single attacks than Douhet, the authors adjured commanders that, once a decision had been reached as to the precise elements of the enemy's organization to be attacked,

³³Ibid., 12.

³⁴Ibid., 12. Cf. Command of the Air, 22-23, "The guiding principle of bombing actions should be this: the objective must be destroyed completely in one attack, making further attacks on the same target unnecessary."

³⁵Sherman, Air Warfare (New York: Ronald Press, 1926), 217-18.

it would have to be followed consistently and undeviatingly until that phase was completed. In an admirable statement of eclectic synthesis, the authors declared: "In this way the air force will cause complete destruction of vital parts of the enemy's sources of supply, eventually leading to the collapse of the whole system."³⁶

Against lines of communication too, strategic operations were to be "conducted with the same object in view, viz., disintegration of the whole scheme of movement and supplies to the troops in the combat zone." Key points for attack were to be selected by identifying those "sensitive points in the enemy's organization which, if destroyed, would seriously curtail or stop movement altogether in certain areas."³⁷

Here, then, were surely the foundations and specifications, if not the most precise elaboration, for a system of precision bombardment of the enemy's production and communication systems. This was the basis upon which the Tactical School was later, following a lapse of some years, to erect an impressive superstructure. Its beginnings and early development clearly lay in the twenties, not in the thirties, as commonly asserted.³⁸ Certainly the tactical feasibility of pin-point bombing Mitchell had demonstrated beyond question during the bombing tests of 1921

³⁶Combined Air Force, 12.

³⁷Ibid.

³⁸USAF Hist. Studies No. 89, 57; USAF Hist. Studies No. 100, 32-33.

which saw heavily armored naval vessels sunk quickly,³⁹ and those of 1923 during which precision bombing was done from altitudes in excess of 10,000 feet.⁴⁰

Tactical Operations⁴¹

Although the GHQ air force itself might be employed in ground support operations from time to time, the major effort here would be conducted by tactical air organizations assigned directly to the field armies and supported by special units held within the GHQ reserve. The general concept of such operations was ground-force oriented; the elements of the enemy forces which constituted the most immediate threat to the success of friendly forces would be attacked in the order of their importance. Decisions would be made by the ground force commanders to whose units the army air force was assigned. Although it was envisaged that occasions might arise when the entire air force including the GHQ air force might be engaged in tactical operations, the authors were confident that such situations would be rare. There were no notable changes or innovations in the tactical sphere. Coastal defense--also a tactical task--was

³⁹Lincoln, Military Affairs, XV (Fall, 1951), 152, 154.

⁴⁰Arnold, 111. As to the comparative accuracy of air and sea weapons, Levine cites Major H. H. Arnold's figures showing that aerial bombing of a moving target at Langley averaged about 24 per cent hits compared with 4.1 per cent at Jutland (Presumably the latter referred to British gunnery, which was less accurate than the German). Levine, 263. On altitudes, supra chap. V, n. 45.

⁴¹Introduction of the revolutionary tactical concept of counter-force operations for gaining command of the air has already been treated.

considered one of the most important missions of the air force. Employment of bombardment, attack, and pursuit aviation against a hostile fleet was based of course upon tactics developed by Mitchell during the early twenties.⁴²

Evaluation

Combined Air Force in 1926 showed clearly that Douhet's influence had not only penetrated the School but that it had become paramount. Gone was the earlier Mitchellian doctrine of tactical air warfare which focused its sights upon the enemy armed forces as the main objective in war and which relied entirely upon pursuit aviators to wrest command of the skies from the foe. The only distinctly Mitchellian element of doctrine that remained was his concept of the preponderant role of land-based air power against sea power. However, it might be argued that simply by virtue of association the School's espousal of strategic bombardment mirrored the views of Mitchell, not Douhet. It is true that, during the years intervening since Sherman wrote Air Tactics, Mitchell had shifted his doctrinal stance, renewing his former belief in the superior efficacy of strategic bombardment. But his iteration of that doctrine may be likened more to a declaration of faith than a systematic exposition, probably because it was itself a reflection of Douhetist influence. On the other hand, Combined Air Force specifically and unmistakably revealed the Douhetist touch in its exposition of strategic air warfare theory, and included

⁴²Combined Air Force, 13, 25.

most of his arguments, among them his concept of objectives in war, his thought on the influence of the airplane on war, his reasoning as to the powers and characteristics of aircraft, the great potency of the new air weapon system, his general emphasis on the primacy to be accorded strategic attacks upon enemy population centers, and his insistence on the need for complete destruction of the target. Significantly, the last element was modified through conjoining the concept of complete destruction with that of paralysis of a given, critical segment of industry or communications, a synthesis made possible by Mitchell's precision bombing achievements. That the counter-air force strategy embraced by the School derived from Douhet is equally clear, as is particularly evident from the terminology employed. The school also followed Douhet rather than Mitchell in setting forth its doctrine on pursuit aviation which appeared largely in a role supporting bombardment and attack operations. In describing tactical air functions, the Air Tactical School went to greater lengths than did Douhet, but qualified this treatment by remarking that situations would be rare in which the entire air force would be used in tactical operations.

The question as to how the Air Tactical School could have obtained, or derived, such apparently detailed knowledge of the Douhet theory so many years before 1933, the universally acknowledged date, can now be answered quite simply. Contrary to general belief, Douhet's Command of the Air, 1921 edition, was translated into English and was available at the Air Tactical School as early

as 1923. A copy of it was examined by the writer.⁴³ The utilization of this valuable source of air thought probably accounted also for the school's ability to furnish the Office of the Chief of Air Service in June 1924 with the draft of what became the basis for TR 440-15, published eighteen months later, which itself reflected a vital part of Douhet's theory.

Meanwhile, the President's Board of Aviation Inquiry confirmed the views of the Navy and War Departments as to the necessity for retention of auxiliary air arms and denied the need for a separate or independent air role except within the scope of the army or navy command structure. The findings of the Morrow Board became the basis for national air policy, and the inner hard core of the military departments, while still looking with a suspicious eye on the rapid rise of the air weapon system, was permitted to continue to develop and integrate aviation into their existing systems without further serious interference. For the former enfant terrible of the Army was after 1926 "little in evidence" so far as air matters were concerned.⁴⁴

⁴³G. Douhet, The Command of the Air (Rome: Printing Office for the Use of the War Department, 1921). A translation of Giulio Douhet, Il Dominio Del' Area (Roma, 1921) Translator unnamed. In USAFHA 249.501-64C (1921). Four copies were available at the library of the Air Tactical School. The fourth copy bears the official incoming stamp of the School, "Received May 3, 1923, Field Officer's School, Langley Field, Va." It is a good translation, if one uses the widely acknowledged Ferrari translation of 1942 as a criterion.

⁴⁴Patrick, The United States in the Air, 182.

PART IV

ASCENDANCY OF DOUHETIAN DOCTRINE, 1927-35

CHAPTER IX

FINAL EXPRESSION OF THE THEORIES OF DOUHET AND MITCHELL

By the time of his death in early 1930 Douhet had systematized and put into final form his theory of war and air power. In the same year Mitchell gave concise expression to the essentials of his later doctrine, only embellishing it during the years before his death in 1936. The late twenties and early thirties, then, denote the highwater mark in the doctrinal efforts of Douhet and Mitchell respectively.

Refinement of Douhet's Doctrine: Concept of War

To the end of his life Douhet remained fascinated by the form in which the next war would manifest itself. In 1928 he asserted: "There is what may be called the mysterious aspect of war which . . . presses upon everyone and is shrouded by a heavy veil of mystery in that it bears within it vaguely descried an eventuality of the future."¹ Intellectually absorbed in the problem of war and patriotically motivated, he continued to be profoundly concerned over the paucity of Italy's economic and financial

¹The Probable Aspects of the War of the Future (Apr., 1928) in The Command of the Air (New York: Coward-McCann, 1942), 145. Subsequent references are to this edition unless otherwise noted.

resources and the weakness of its geographical position.² To derive any findings that would be of value to his country in a future war, it was important to anticipate correctly the shape and contours of the phenomenon of war which the future would unfold. The success of his endeavor did much to endow his works with a character of seeming universality, and this circumstance in turn helped spread Douhet's appeal far beyond the borders of his native land, both during his lifetime and afterwards.³ A future war, he thought, would be an immense and varied national undertaking demanding the greatest preparation and foresight before the crisis and the most fervent but scientific prosecution if it were to "yield the maximum results from the resources poured into it."⁴ There would be no limit to the violence employed. During the year of the Kellogg Pact, Douhet wrote:

It is useless to delude ourselves. All the restrictions, all the international agreements made during peacetime are fated to be swept away like dried leaves on the winds of war. . . . War will always be inhumane, and the means which are used in it cannot be classified as acceptable or not acceptable according to their efficacy, potentiality, or harmfulness to the enemy. The purpose of war is to harm the enemy as much as possible; and all means which contribute to this end will be employed no matter what they are.⁵

Although he was on strong ground in feeling that none of the nations seemed to want "to get to the root of the problem and attack the

²Recapitulation (Nov. 1929) in ibid., 290.

³Ropp, War in the Modern World, 275 maintains that Douhet had little immediate influence.

⁴Probable Aspects of the War of the Future, 145, 174-75, 188, 196.

⁵Ibid., 181.

causes of war,"⁶ he was certainly in error, as Bernard Brodie has pointed out, in believing that the object of war was to harm the enemy as much as possible.⁷ Any war so conceived, then, would not be one waged in rational pursuit of national objectives. But rather it would be a cataclysmic, titanic struggle in which nations would forget "for a time that they all wear the aspect of human beings, that they belong to the same family of humanity striving toward the same goal of ideal perfection, to become wolves and throw themselves into torment and a bloody work of destruction, as though possessed by blind folly."⁸ This portent of compulsive mass slaughter was of course utterly divorced from the traditional, Clausewitzian concept which saw war as the deliberate, continuing pursuit of vital national objectives when other means had failed. But this portent is not far removed from the dread specter of thermo-nuclear warfare which haunts the world of the sixties. This similarity derives in large part from two major common factors, the inherently offensive nature of the air weapon and the vulnerability of the highly urbanized structure of modern life.

Future war being as he envisaged it, Douhet inevitably was led to place ever greater stress upon popular morale as a significant variable in the equation of victory. This growing emphasis was

⁶"War in the Air" (Jan. 5, 1930), reprinted in The Command of the Air (Rome: Revista Aeronautica, 1958), 193.

⁷Bernard Brodie, "The Heritage of Douhet," AUQR, V (Summer, 1953), 64.

⁸Probable Aspects of the War of the Future, 145.

nourished by the fruits of his intensive reexamination of the World War--"the worst crime that humanity ever committed against itself." The issue in that war was not decided by the breakdown of the army and navy, both of which, he thought, remained organized, intact, and capable of protracted resistance; rather it was determined only by the cracking of the people's morale after a long and excruciating process of attrition. A future conflict would therefore see the air weapon used to attack precisely those "entities less well organized and disciplined, less able to resist, and helpless to act or counteract." It would strike "chiefly . . . the civilian population, that is, the densely populated areas, industrial and commercial centers, lines of communication, etc." By attacking "chiefly moral resistance" and sowing terror and destruction, the aero-chemical arm would quickly and surely bring about the "collapse of the enemy nation and the consequent disruption of its armed forces."⁹

The New Air Force: The Battle Plane

Manifestly, then, the outcome of any major war in the future was predictable; it hinged upon conquest of the sky. To seize such control at the earliest possible moment was imperative, but to do so one had to have a properly constituted air force. By 1927 Douhet had revised his conception of such a force and insisted that it be composed almost entirely of what he called "battle planes." This new air force differed sharply from his

⁹Ibid., 174-75, 188, 196; "War in the Air," 193-195.

earlier instrument comprised of bombers and a protective escort of combat planes. Douhet reasoned that air battles, like sea battles, would be fought and decided by means of firepower, and that there was no reason why the bomber itself could not be made suitable for air combat. Though his earlier bomber was not without armament, its guns were affixed mainly to bolster the morale of the crew. By increasing its armament sufficiently to fight off hostile pursuit, Douhet thought the need for a protective escort to the target could be eliminated. By adding heavy armor, he sought at the same time to decrease the bomber's vulnerability to hostile fire. Since, in his system of warfare, both the bomber and the combat plane had the same radius of action and neither depended upon speed, specifications for these factors were approximately the same for each. Therefore he concluded that it was perfectly feasible as well as highly advantageous to unite both combat and bombing functions in one type of aircraft--the "battle plane." If these fighting and bombing functions became separated, Douhet pointed out, one would have either an air force capable of simply fighting in the air--and therefore rendered impotent unless it encountered the enemy--and at best indecisive; or else an air force able to attack only the surface, and exposed therefore to the grave risk of destruction by enemy fighters. On the other hand, an air force equipped with "battle planes" gained vastly in efficiency, for it could concentrate all its tactical units for either bombing or air combat as occasion demanded. The battle plane, Douhet said, must "certainly

be a heavy type, multimotored, . . . of medium speed," so constructed as to permit ready removal of armor and guns, to fit it for normal transport uses. Thus, he concluded, "we have been able to determine through deduction the characteristics a battle plane should have--the only type of plane which should make up the operating mass of an Independent Air Force--the only organism necessary, because sufficient in itself, to wage aerial warfare." As late as 1929, Douhet's verdict remained that the pursuit plane had "had its day" and would have to give way to a ship able to fight in the air and yet retain its radius of action as a bomber.¹⁰ Besides the battle plane, the only other type of aircraft for which Douhet saw any need was the reconnaissance plane, a fast and wide-ranging craft designed to procure and transmit to the operating body of the air force the information required for intelligent operational decisions.¹¹

Specifications for Aircraft, Bases, and Logistics.--

Beyond the above generalizations which he believed were valid for any air force, Douhet recognized the need for identifying and incorporating in a country's aircraft special features peculiar to its geographical location or military position vis-a-vis other powers. For example, if Italian bombers were to carry out offensives across the Alps and span the Mediterranean,

¹⁰Command of the Air, Part II, 117-119, 123-125; "Battle Planes in Air Warfare," Dec. 15, 1929, reprinted in Command of the Air (Rome: Revista Aeronautica, 1958), 191.

¹¹Command of the Air, Part II, 119-120.

they required both high altitude ceilings and long range. Moreover, he emphasized the need for a country to be well supplied with air bases and means of dispersing its aircraft. A wise air force, he prophesied, would "disappear from the surface immediately upon landing and . . . never be left exposed to enemy attack on the open field." Camouflage and use of alternate groups of bases facilitated dispersal. There was need also for creation of an aerial logistical organization to reduce an air force's dependence upon ground force-supplied services. The new Independent Air Force was to be "a completely self-sufficient organization able to move in the air and to change its location on the surface autonomously."¹² With such an air force, a nation could indeed gird itself formidably in the sky where the decision lay.

Concentration on Strategic Air Power.--But in order to mass in the air, it was essential to avoid breaking up one's air power into fragments divided among the army, navy, and air force. Yet, in 1921 Douhet had admitted the need for a separate organizational establishment of auxiliary aviation attached to the army and navy. That position, he now declared in 1927, had been adopted without conviction, was aimed only at appeasing his opponents, and was in fact belied by his concomitant statement that national defense could be assured "only by an Independent Air Force of adequate power," in whose unique tasks of destruction neither the army nor the navy could in any way assist.¹³ Such

¹²Ibid., 121-122; Recapitulation in ibid., 262.

¹³Command of the Air, Part I (Faber edit.), 32.

auxiliary aviation he now explicitly branded as worthless, superfluous, and harmful:

Worthless because incapable of taking action if it does not have command of the air. Superfluous because a part of the Independent Air Force can be used as an auxiliary if the command of the air has been conquered. Harmful because it diverts power from its essential purpose, thus making it more difficult to achieve that purpose.

To this fundamental statement there were no exceptions. It had to be made "the basis for the formation and use . . . of aerial power."¹⁴ This principle of resource allocation Douhet carried further still.

Passive Air Defense.--Any country which desired an Independent Air Force capable of asserting command of the air should under no circumstances permit funds to be diverted to such secondary purposes as local air defense, balloon barrages, and antiaircraft guns. Just as the coastline was historically defended by winning command of the sea, so now it and the surface of the land were to be defended from the air--not by scattering guns and balloons and attack planes--but by gaining command of the element concerned, the air. Underground shelters he also dismissed as an ineffective defense posture, since it was obviously impossible to move underground everything that could be destroyed by air attack. Nor was evacuation of large cities a tenable alternative, for a city abandoned was a city destroyed. Only in the sphere of morale, to which he attached the greatest significance, was it possible to accomplish much in air defense. It was

¹⁴Command of the Air, Part II, 94-95, 100-101, 112.

important that the people be informed of, and steeled in their resistance to, the atrocity of air warfare, if the country were to reduce the possibility of panic and catastrophies resulting from apprehended or surprise attacks. Toward this end Douhet advocated "truthfulness" concerning future war from the skies, and urged that every effort be made to strengthen the sense of discipline and national pride of the masses.¹⁵ Such indoctrination required little in the way of expenditures, it may be remarked, and also accorded well with Douhet's stoical injunction to resign oneself to the blows inflicted by the enemy. Certainly, as Ropp points out, Douhet, more than any other individual, was responsible for the concept of passive air defense.¹⁶

Scientific Research.--If national resources were to be concentrated on building up one's offensive air power to the exclusion of all other means of air defense, it also followed that the country's laboratories and factories should strive to increase the potency of "active materials" used by its air strike force. Provided nothing else was altered, doubling the power of destructive materials doubled the offensive power of the Independent Air Force.¹⁷

¹⁵"Danger from the Air," 1930 (mo. not given) reprinted in Command of the Air (Rome: Revista Aeronautica, 1958), 198-199, 204.

¹⁶Ropp, 274.

¹⁷Command of the Air, Part II, 128; Probable Aspects of the War of the Future, 201-202.

Chief Principles of Employment: Provided it adhered to correct principles of employment, an Independent Air Force already in being, enjoying a monopoly of a nation's air power resources, and composed primarily of heavily armed and carefully deployed bombers, would soon wrest command of the air from an enemy air force differently constituted and organized. Victory in a future war would therefore depend solely upon one's success in offensive air action; hence, air force crews and commanders would have to act with the utmost aggressiveness, skill, and dispatch from the very outset and never let up until command of the air was won. "There is only one attitude to adopt in aerial warfare, namely, an intense and violent offensive. . . ." ¹⁸ To win, Douhet continued not only to insist upon the necessity for a mass, surprise attack but in fact underscored its tremendous importance:

Whatever its aims, the side that decides to go to war will unleash all its aerial forces in mass against the enemy nation the instant the decision is taken, without waiting to declare war formally, trying in this way to exploit to the utmost the factor of surprise by direct attack and the use of the aero-chemical arm. . . . Some morning at dawn capital cities, large centers, and important aviation fields may be struck and shaken as though by an earthquake. ¹⁹

¹⁸Command of the Air, Part II, 109-111.

¹⁹Probable Aspects of the War of the Future, 202. To insure national resistance of some kind in the event command of the air were lost, Douhet recommended that the army and navy reorganize their structure and change their methods of operation so as to permit continued functioning despite loss of their lines of transportation and communication. While emphasizing the importance of the air arm's role, he never sought to minimize those of the sister services. Ibid., 204.

In 1930 in his last major work, "The War of 19__," he employed the device of fiction to depict vividly the decisive importance and proper use of mass in offensive aerial operations by a modern air force. In it, the German Independent Air Force, constituted and organized like his new model, won its great victory by reliance upon relentless, determined, and disciplined adherence to offensive bombing conducted en masse. Deploying from numerous, well-scattered bases in the interior, it operated in eight long columns, each of which consisted of a series of carefully spaced formations of battle plane units. Each column was directed to follow a certain target route through France and/or Belgium, and each bomber unit within it was assigned a specific group of targets along that itinerary. The combined effect of the simultaneous action of all the columns was a steady, regulated pile-up of bomber "waves" which proved irresistible. The continuous pounding of the bomber fleet, maintained despite heavy losses, proved too much for the valiant but diversified array of defending fighters which, forced from time to time to break off engagements in order to refuel and rearm, gradually were overwhelmed by sheer mass. In the meantime, Allied bombardment of German cities, though unopposed by any air units, had to be discontinued because of the threat of massive retaliation. After gaining command of the air, the commander of the German air force was compelled by the high command to cease the mass bombing of more cities--the course he favored--in order to help the German army resist the

numerically superior enemy ground forces by interdicting the latter along their lines of deployment. Thus, by massing in the air and resisting on the ground, Germany won the war in two days.²⁰

In this fictional account Douhet departed, however, in several respects from ~~some~~ of his earlier doctrinal positions. First, he had the German Independent Air Force forego the tremendous advantage of the surprise attack, thereby allowing the initiative to pass to the Allies. Ostensibly this was done to permit the German government to score a propaganda victory. Secondly, he had the Independent Air Force utilize to advantage 180 crack pursuit pilots, manning the entirety of the air force's fifteen so-called "explorer" or reconnaissance squadrons, in individual air combat at a critical time and place during the air battle. Such employment seemed to prefigure a possible shift in Douhet's concept of pursuit employment, but death intervened too soon to permit any certainty on this point. Thirdly, the author had the Germans elect to bomb major centers throughout France rather than concentrate on catching the air power of its adversary on the ground, although they did attack important airfields in the most critical area of operations. Such a shift in employment Douhet foreshadowed as early as 1928 and reiterated in 1929 when he indicated this as a possibility in situations where one air force enjoyed such superiority over that of its rival that it might decide to ignore it and strike directly and at once

²⁰"The War of 19__," Revista Aeronautica (March, 1930), in The Command of the Air, 294-393.

at the main centers of production and population.²¹ This question of initial target priorities, on which Douhet himself never laid down invariable rules, was to recur among and plague his American disciples.

Though he hoped that Italy might be the first in the field with a true Independent Air Force, Douhet was convinced that the first nation to create an air force "along rational, logical lines" would enjoy an inestimable advantage over others. Inasmuch as all contemporary air forces were still modelled on concepts of employment dating from the World War, there was yet time, he thought, for a young, relatively poor but ambitious nation to turn its ingenuity to account. However, as time passed and the fund of experience grew, the independent air forces of all nations would take on "a similar form, as long ago their armies and navies did."²² By 1930, indeed, the spread of Douhet's ideas was already producing remarkably similar air force designs in the minds of American pioneers in air thought, both within and outside the Air Corps. Among the latter was now numbered William Mitchell, one-time scourge of the War and Navy Departments.

Finalization of Mitchell's Air Power Doctrine

During the last ten years of his life Mitchell continued his campaign for the cause of air power in America, though at an irregular pace. Shortly after he resigned his commission in 1926,

²¹Ibid.; Probable Aspects of the War of the Future, 202, and Recapitulation, 245 in ibid.

²²Command of the Air, Part II, 129-132, 141.

he wrote Trenchard that he would "keep up the fight" until this country could boast an independent air force.²³ From time to time he undertook public lecture tours. In 1927 he investigated aeronautical progress during an extensive tour of Europe. He also published his memoirs, part of which appeared in the periodical press. Of several subsequent literary ventures during the late twenties, apparently the most successful was another book, Skyways, an account of air power tailored for public taste and published early in 1930. Throughout the decade, 1926-1935, he also prepared numerous articles on various facets of air power, politics, and strategy, a number of which received wide circulation. He continued too his endeavors to change our organization of national defense, sometimes even proposing legislation to establish a separate department of aeronautics²⁴ and/or a unified department of defense.

In 1930 he insisted that there was "an indescribable mess about the defense arrangements," with no single air commander and nobody knowing who had charge of anything.²⁵ By the latter part of 1934 his hopes apparently faded for any substantial change in the national defense; solemnly he concluded that the "mess" remained

²³Harry H. Ransom, "Lord Trenchard, Architect of Air Power," AUQR, VIII (Summer, 1956), 64.

²⁴Typescript, no title, with Attachment, A Bill to Establish a Department of Air, Middleburg, Va., n.d. (c. 1932), Mitchell Papers, Box 25.

²⁵Skyways (Philadelphia: Lippincott, 1930), 251-252, 259-260.

and that the government lacked any real defense plan or policy.²⁶ The army proposal in 1934 to establish a semi-autonomous GHQ air force under the Army Chief of Staff he termed simply "a play on words."²⁷

Though his organizational plans for the nation's defense were not to be realized for another 11 years, his closely related writings in the more subtle field of doctrine yielded an earlier harvest.²⁸ For it was during these years that Mitchell did much to popularize strategic bombardment and champion the associated concept of bomber supremacy, creating in the process the image of himself that is probably best remembered. A concise statement of his theory of war and the role of air power appeared in Skyways. In support of strategic air warfare Mitchell repeated the same Douhetian arguments advanced in earlier years. Moreover, he now claimed that strategic bombardment had been "the one outstanding development that occurred in the European war," and predicted that it would be the deciding factor in any future major war. The heavily armed, lethal bomber was "the basis of air force power," [Italics added] and the pursuit ship would find it increasingly difficult to find, catch, and shoot it down.²⁹

²⁶Mitchell Testimony, Federal Aviation Commission, Proceedings, Oct. 2, 1934, 638.

²⁷Fed. Av. Comm., Proceedings, Oct. 2, 1934, 721.

²⁸Cate, AUQR I (Winter, 1947), 17. Here Mitchell is given the entire credit for ACTS's "new" doctrine of strategic bombardment.

²⁹Skyways, 271-279; cf. "Airplanes in National Defense," Annals (AAPSS), CXXXI (May, 1927), 40 and "Building a Futile Navy," The Atlantic Monthly, CXLII (Sep., 1928), 408.

In the following years Mitchell went on to assert, repeatedly, that no force could stop a bombing attack. Bombers could fly through the stratosphere and converge on the target from all directions. A fighter might sometimes be lucky enough to intercept one, but such occasions would be rare.³⁰ Accordingly, like Douhet he urged that national defense be centered around "the bomber as the principal instrument of war."³¹ Resources should not be wasted on auxiliary aviation, for it was a mistake to think that it contributed anything to a nation's air power.³² For the true measure of a nation's air power was the threat it posed to the people and resources of opposing states. Since a modern nation expressed its strength by the air power it had in being, the United States should develop bombers "with sufficient range and striking power to threaten any nation that stands in the way of national policy."³³ The strategy he recommended was eminently Douhetian: to resist on the land and to attack in the air. The

³⁰Fed. Av. Comm., Proceedings, Oct. 2, 1934, 604. Typescript, "Behind the Smokescreen," n.d., 8, Articles, Mitchell Papers, Box 25; Typescript, no title, Jan. 27, 1935, 1, loc. cit.

³¹Testimony, Fed. Av. Comm., Proceedings, Oct. 2, 1934, 604.

³²Ibid., 603; Mitchell Testimony, Fed. Av. Comm., Public Hearings, Nov. 24, 1934, 4133-34, 4136; see also typescript of statement before Fed. Av. Comm., n.d., 2, Mitchell Papers, Box 25.

³³Typescript, no title, Jan. 27, 1935, 1, Box 25, Mitchell Papers. Typescript, "Behind the Smokescreen," n.d., 8; Mitchell Testimony, Fed. Av. Comm., Public Hearings, Nov. 24, 1934, 4132.

model air force he proffered was a European one, drawn according to typical Douhetian specifications: "an aeronautical striking weapon, the Air Force, entirely independent . . . designed to hit the vital centers of the enemy at once in case of war and destroy the will of the whole hostile people to resist."³⁴ Well concealed and dispersed, such a force could act from a distance, and, he implied, strike without warning.³⁵ Truly Mitchell had become not only a convert but also a fervent disciple of Douhetism.

³⁴Typescript, Address before Foreign Policy Association, Astor Hotel, New York, Mar. 3, 1934, 5, Mitchell Papers, Box 27; see also "Airplanes in National Defense," Annals (AAPSS), CXXXI (May, 1927), 38-41.

³⁵Mitchell Testimony, Fed. Av. Comm., Proceedings, Oct. 2, 1934, 716-717.

CHAPTER X

REJECTION OF DOUHETISM,

1927-1928

The history of ACTS during the decade after 1926 revolved largely around the struggle over retention of Douhetian theory as initially adopted in Combined Air Force and subsequently expanded to include the master's final testament. While it would be helpful to establish the identities of all the dramatis personae involved, this goal defies complete realization, partly because of the vagaries of an army correspondence and publications code which encouraged anonymity and plagiarism on the one hand and misrepresentation of authorship on the other, and partly because of limitations imposed by the extent of resources at the writer's disposal. Nevertheless, the main outlines of the story are discernible and some of the chief protagonists identifiable.

At the heart of the struggle were two questions: (1) whether the chief arm of the air force was pursuit or bombardment, and (2) whether bombardment was to be used primarily for tactical or strategic purposes. The Douhetists, of course, favored the latter position in each case¹ and their antagonists the former.

¹This was true in essence, but the Douhetists usually

In any event, the School resolved these doctrinal questions of employment not by means of pragmatic tests and proofs but rather by theoretical argumentation revolving around the concept of modern war. How is one to account for this highly untypical Anglo-Saxon reaction? Essentially, it is submitted, by recognizing the full extent of the continued appeal and power of Douhetism, a completely integrated doctrine -- the whole inserted intact into a vacuum created by the failure to establish a specific organization for the express study, evaluation, and testing of doctrines of employment for the Air Corps. Abetting this movement toward strategic bombardment was Mitchellism, itself a hybrid which owed a great deal to Douhetian inspiration. Reinforcing the whole process and making possible the concrete realization of the doctrine of bomber supremacy was the trend of aeronautical technology which after 1930 increasingly favored the large airplane. Although, owing to aforementioned limitations, it has not proved possible to ascertain the precise relationship between air doctrine and air technology, it is indisputable that the Douhetian theory occurred first chronologically; that the first major impulses for development and procurement of heavy bombardment airplanes originated in the late twenties from the same air base where the Douhetian

advocated tactical use against the enemy air force as an intermediate step requisite to launching the strategic air campaign. The question of priority between these objectives tended to assume increasing importance once the primacy of bombardment was established in the thirties. Infra. chap. XI.

theory was first expounded and propagated -- Langley Field; and that the big bombers came later, beginning in the early thirties, first the B-9 and B-10, then the XB-15 and B-17.² Augmenting the force behind the entire movement after the turn of the decade was the changing climate of world politics which saw in rapid succession the onslaught of the Great Depression, the failure of several naval and air arms limitation conferences, the rise of new and menacing totalitarian regimes in Europe and the Far East, and the beginning of the forcible overturn of the status quo. In this charged international atmosphere the United States government decided to reevaluate its security policy, and by 1933 the War Department -- which had always been cool to the development of long range, strategic aircraft for the Army -- expressly recognized for the first time the dual need to develop far-ranging bombers for coastal defense and to create a special tactical organization to direct their use in that capacity. During the following year, the concept for the employment of that force was expanded from that of a simple, temporary expedient designed for patrolling our shores and carrying out initial attacks upon any hostile force approaching them to one which encompassed all of the combat elements of the army's air arm.³ With the creation of the GHQ Air Force in 1935

²AAF Historical Studies, No. 6, 7-15; 74-75; Robert W. Krauskopf, "The Army and the Strategic Bomber, 1930-1939," *Mil Affairs*, XXII (Summer, 1958), 83-93; Summary in *Evolution of Aerial Warfare* (Hq AFOTC, Maxwell Field, Ala.: May, 1959), 53-58.

³McClendon, Autonomy of the Air Arm, 1907-1945, 153-55, 169-173. This is the best single study of the organizational aspect.

the Air Corps brought to fruition the long advocated concept of a unified, striking force -- the independent Air Force idea -- and when it subsequently began to equip it with the new heavy bombers -- the first B-17's being assigned to the GHQ Air Force Headquarters at Langley Field -- doctrine, technology, and organization were marching hand in hand.

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While these elements of air power were inextricably interwoven into the fabric of the nation's military air force during the thirties, this account treats systematically and from a special point of view only the first in this triumvirate, ideas -- primus inter pares. The year 1928 may be taken as a convenient watershed for doctrinally dividing the decade, 1926-1935, for, despite Combined Air Force in 1926, until 1928 resistance to Douhetism within the school remained acute, while thereafter it tended to give way appreciably and after 1930 declined markedly.

Part of the early resistance manifested itself in a sharp cleavage over the proper function and place of bombardment. A notable instance was the express repudiation of the strategic doctrine enunciated in Combined Air Force by the anonymous authors of the ACTS bombardment text for 1927. They contended that strategic bombardment should simply "take up where the tactical leaves off." Hence they insisted that bombers operate primarily "in support of or in conjunction with large forces of ground troops."⁴

⁴ACTS, Bombardment, 1926-1927, 54, 73.

Furthermore, while admitting that there was an important relationship between bombardment of enemy air force targets, particularly his pursuit airdromes, and the mastery of the air, the 1927 bombardment text flatly declared that aerial supremacy depended upon pursuit and that bombardment could only assist it in that effort. Thus it also expressly contradicted the command of the air thesis enunciated the year before.⁵ This opinion was at that time shared at the highest echelon of the school, for in early January 1928 the Commandant, Lieutenant Colonel C. C. Culver, averred emphatically, in reply to a query from OCAC regarding attack and pursuit tasks, that pursuit's main function was "to gain and maintain air superiority by operations against aircraft in the air."⁶ (Italics added) He further recommended to headquarters that if hostilities threatened, it should direct all manufacturing efforts be concentrated initially upon pursuit production -- "thus to gain and maintain air superiority as soon as possible."⁷

Fortunately for the school and the air arm, the War Department unexpectedly took a hand in matters in April by ordering all arms and branches to think afresh the problems of war and weaponry.⁸

⁵Ibid., 58-59, 64.

⁶1st Indorsement (ind.), Jan. 7, 1928 to letter from Chief of Air Corps, Attack Aviation, Nov. 15, 1927.

⁷Ibid.

⁸Letter, AGO to Chief of Air Corps, Progress Reports on Development Work, Apr. 23, 1928.

Perhaps aware that such requirement was impending or perhaps coincidentally, the commandant one week later submitted a remarkably frank proposal for revamping air doctrine along Douhetian lines. It was entitled "The Doctrine of the Air Force." In his letter of transmittal on April 30, 1928, Colonel Culver, in a volte face, asked OCAC and the War Department to accept the proposed doctrine as the foundation for the development of Air Corps tactics. He added that the principles incorporated in the proposals formed the basis for texts being produced at the school.⁹ The ACTS paper proposed adoption of the following doctrinal positions:

1. Concept of War and the Role of the Air Force in National Defense.

"Perfect team play" among all components of the armed forces is essential to insure success in war, but primacy should be accorded the Army as the principal component of the nation's forces. Hence in a major war the Air Force (as it was significantly referred to) would always support the ground forces, "no matter how decisive" air operations might be, or however indirect they might be. But ACTS was quick to add that a preponderant Air Force might, "by its destructive action, so break the enemy's will to resist that the decision may be gained by the action of the Air Force alone."¹⁰ (Italics added)

2. Concept of Employment: Bombardment

⁹Letter, Culver to Chief of Air Corps, The Doctrine of the Air Force, Apr. 30, 1928. One enclosure: The Doctrine of the Air Force. Hereafter cited as "Doctrine of the Air Force, 1928."

¹⁰"Doctrine of the Air Force, 1928," 1.

Every plan for air force employment is built up around the use which is to be made of the available bombardment and attack; then the pursuit is disposed accordingly. In addition, in almost every situation it will also be found that the use to be made of attack is more or less dependent upon what the bombardment is to do. Therefore, the chain of thought in formulating an Air Force plan is:

- (1) decide what to do with bombardment;
 - (2) select targets for attack so that its action either supports the bombardment or dovetails with its employment;
 - (3) provide for adequate reconnaissance by observation;
 - (4) arrange pursuit support for the other components.¹¹
3. Bombardment therefore may be said to be the basic Air Force arm. It is employed against targets located in an area whose closer limit is the effective range of artillery fire [tactical] and whose outermost limit is determined by the radius of action of the bombardment plane [strategic]. The effect sought is the destruction of the objective against which it is dispatched. . . . Its machine guns are . . . to be used only in defense against hostile airplanes. Bombardment delivers the 'main blow' in all Air Force operations, regardless of how it operates (with or without air support) [Italics added].¹²

These statements obviously embraced several interrelated parts of the Douhet theory:

- (1) Overriding importance of offensive action by bombardment against surface objectives;
- (2) Necessity for complete destruction;
- (3) Operation of the bombers on distant strategic missions, as well as tactical;
- (4) Battle plane concept of bombing operations;
- (5) Subsidiary role of pursuit planes

¹¹Ibid., 2.

¹²Ibid., 2-3.

(6) Bombardment the basis of air force firepower and hence of the air force.

4. ATTACK is a supplementary means of bringing Air Force firepower to bear on the enemy. It supports bombardment either directly, by neutralizing or destroying the ground anti-aircraft defenses seeking to prevent bombardment from accomplishing its mission, or indirectly by attacking personnel and light materiel objectives. In operations against a hostile Air Force, attack supplements bombardment in destroying enemy aviation establishments on the ground. . . . Against an enemy ground force it is used to reduce . . . combat efficiency by . . . harassment, and . . . by delaying arrival on the battlefield. . . . It delivers its main blow with its bombs.¹³ [*Italics added*]

Here the school followed not only Douhet's injunction to "blind" the anti-aircraft batteries, but, in the most important new role proposed for attack aviation, wished to employ it to destroy the enemy's "nests" on the ground.

5. Observation assists in gathering the information necessary to the selection of proper targets for bombardment and attack. . . . It reports promptly the results of attack.¹⁴

Such use of observation contrasted markedly with the contemporary notion that its role was mainly to gather and report information for the ground forces. It followed logically from the premise of bombardment's primacy in the scheme of things. Reconnaissance was the only other function besides bombing accepted by Douhet.

6. PURSUIT has as its chief characteristic speed and the resultant ability to engage offensively in an air fight. In air force operations it is employed primarily to support day-light operations of the other classes of aviation. This is its principal mission. It is also employed to defend

¹³Ibid., 3.

¹⁴Ibid., 3.

friendly ground establishments from the enemy's air force. . . . Pursuit's destruction of enemy pursuit in the air is incidental to the accomplishment of its missions; neutralization of enemy pursuit is all that is necessary. Only in defending against hostile bombardment, attack, or observation does its mission require it to destroy enemy aircraft in flight.¹⁵ [*Italics added*]

Here the task of the fighters was seen as one in which the function of sky fighting played a minor part in winning command of the air. Its role was asserted to be what Douhet always claimed it was -- purely defensive, protective. Pursuit forces would now be expected primarily to "support" the bombers and attack planes in their daylight operations to the extent of their limited radius of action.

7. The Air Force has the primary mission of gaining freedom of action for itself in the air, and consequently, for the supported forces on the ground. It has the perpetual mission of maintaining that condition. Direct support by the Air Force of tactical ground operations will be limited to sporadic raids whose effect will be more or less uncertain, unless that Air Force has a reasonable freedom of action. However, absolute freedom of action will probably never be attained; when it is the war is won. . . .¹⁶ [*Italics added*]

Here is evident Douhet's emphasis upon

- (1) gaining command of the air;
- (2) decisiveness of such command, once won; and
- (3) importance of a command of air to ground force operations.

The authors of this proposed American air power doctrine went beyond Douhet, however, in declaring that, once the Air Force had achieved the command of the air, the war was won. Douhet, it may be recalled, distinguished between air forces that could and others

¹⁵Ibid., 4.

¹⁶Ibid., 4-5.

that could not exploit command of the air, once gained. Actually, that the Air Tactical School sought to develop an air force that could exploit command of the air was evident in its introductory declaration that a preponderant air force by its destructive, i. e., bombardment powers, might win the war alone. Thus, while paying lip service to the superiority of ground over air components in national defense, the Air Corps Tactical School advanced a coherent Douhetian doctrine for a powerful "Air Force" built around bombers. In short, if adopted, the doctrine of the Air Corps Tactical School would:

- (1) Make bombardment the basic arm;
- (2) Pose strategic air warfare as the major task of bomber forces, once command of the air was won;
- (3) Transform the role of attack aviation from close support to that of a powerful complement to bombardment;
- (4) Invert pursuit aviation's function to one of
 - (a) supporting bombardment and attack aviation, and
 - (b) defending surface units and installations against hostile marauders.
- (5) Make observation expressly responsible for gathering target data for bomber and attack operations;
- (6) Provide tactical support to ground forces primarily by assuring general air control rather than close support;
- (7) Gain control of the air primarily by using bombardment and attack to destroy the hostile air force.

Shortly after this paper from ACTS arrived at OCAC,

headquarters dispatched two officers from the Training and Operations Division, Majors Lyon and Pratt, to Langley Field to investigate the situation there and to discuss doctrinal matters with the school authorities. The school's doctrinal statement was accordingly reformulated and resubmitted to OCAC on June 9, 1928 under the title "Doctrine of Employing an Aerial Force"¹⁷ (no copy found). But official reaction may be gauged from a memorandum sent by Major Edwin B. Lyon to the Chief, Training and Operations Division. Referring to the role of pursuit, Lyon commented as follows:

This paragraph, if not wrong, is at least misleading. . . . The statement is made that the 'end is not the pursuit losses effected in the fight.' This statement is no doubt based on the assumptions that: (1) absolute aerial supremacy can never be gained; (2) the best place to destroy aircraft is on the ground. By the first assumption . . . the School is trying to get away from the World War time idea that pursuit's chief end was to do away with enemy pursuit, whether or not it tied in with the plans for bombardment and attack. By the second assumption they mean that to hope to find enemy aircraft after they have taken to the air is much more difficult than locating them on the ground when the airplanes themselves are defenseless. I cannot but believe that they have gone too far.¹⁸

A formal reply to the school was dispatched early in September 1928, about the same time that Colonel Culver initiated a formal inquiry. It demanded that the school's proposed doctrine be rewritten in accordance with instructions contained in attached

¹⁷Letter, Culver to Chief of Air Corps, Doctrine of Employing an Aerial Force, Jun. 9, 1928, with two attachments. Both are missing, and cannot be located in National Archives or USAF Archives at Maxwell AFB.

¹⁸Letter, Schools Sec. to Chief, Trng. & Oper. Div., Jun. 13, 1928, Comments on ACTS's Study: Doctrine Employing an Aerial Force.

comments.¹⁹ OCAC declared that it did not endorse the view that the air component always supported the ground forces, and asserted that in a future war the air force might attain a decision in the air even before the land or sea forces came into contact.²⁰ It would appear here that OCAC chose to ignore entirely the seemingly transparent ACTS effort to circumvent the plaguing issue of the primacy or subordination of one service to another.

OCAC further rejected virtually in toto ACTS's formulation of doctrine on command of the air, the primacy of bombardment, the emphasis on attacking enemy aviation on the ground, and the essentially support nature of both observation and pursuit aviation.²¹ If any air component were to be regarded as the basic arm, it would be pursuit, not bombardment. Yet, surprisingly, in another passage, headquarters clearly indicated its espousal of

¹⁹1st Ind, War Dept., OCAC, Sep. 1, 1928, to Commandant, ACTS, reference Basic Letter, Doctrine of Employing an Aerial Force, Jun. 9, 1928. The author of the extended criticism of ACTS is not known with certainty, but the headquarters coordination sheet attached to the letter from OCAC would seem to indicate that Major Thomas Dewitt Milling, former Officer-in-Charge at ACTS and later Assistant Commandant, was the principal author of the letter. His initials appear on the marginal routing file under the office designation T.O. in addition to the initials C.S., perhaps referring to Carl Spaatz, and F.O. for Personnel. More significant perhaps is the fact that TDM Sr. appears on the top of the page of the first endorsement of Sep. 1, 1928, dispatched Sep. 4. The biographical register of West Point officers shows that Milling was Chief, War Plans Sect., T & O Div., OCAC, from June 1927 to July 1930. It may also be observed that there was a new Chief of Air Corps in office at the time, Maj. Gen. James Fechet having succeeded Maj. Gen. Patrick in late Dec. 1927.

²⁰Ibid., 4.

²¹Ibid., 3-7.

at least the Douhetian concept of the objective in war and its attainability by means of air power:

If the true objective can be reached without the necessity of defeating or brushing aside the enemy's force on the ground or water and the proper means furnished to subdue the enemy's will can bring the war to a close, the object of war can be attained with much less destruction and lasting after effects than has heretofore been the case. At present, the air force provides the only means for such an accomplishment.²²

Accordingly, it would seem that, on the one hand, OCAC accepted, probably via Mitchellism, the Douhetian thesis that strategic bombing of cities, industries, etc. would break the enemy's morale and will to resist, and yet, on the other, rejected both the means Douhet specified as essential to attain that end, viz., bombardment per se and the method he urged, viz., command of the air by destroying enemy aviation, especially on the ground -- a role which again underscored the importance of bombers. OCAC's thinking reflected, too, the standard doctrinal terms of thought prevalent since the close of the World War that the air force's major role would almost certainly be, initially at least, the disruption and possible prevention of mobilization of rival service forces. Nevertheless, it was emphatically clear that the Office of the Chief of Air Corps had summarily rejected an explicit doctrine of air power which would have made bombardment the basic arm of the air force.

This interpretation differs markedly from the hitherto generally accepted view that "the ideas set forth as school

²²Ibid., 4.

doctrine in 1928 were extremely conservative," that "the general support of the school paper was to place the air arm as an auxiliary to the ground force," that it required OCAC intervention to "correct this view," and that "the conservative position of the Tactical School . . . in 1928 is unexplained" (USAF Historical Study, No. 89, 48). It should be added that this Air Force study was only following however in the path of Professor James L. Cate who marked out this position in a paper delivered at the fortieth annual meeting of the Mississippi Valley Historical Association, Columbus, Ohio, April 24, 1947. According to Cate, the Air Corps radicals, as he called them, "were willing to accept the whole of his [Mitchell's] doctrine," and in the early 1930's came to dominate the Air Corps Tactical School where for the most part . . . their lectures could have been written with Mitchell as sole authority." To prove that this had not always been so, he asserted that as late as 1928 the Chief of Air Corps rejected the ACTS paper, 'The Doctrine of the Air Force,' because it subordinated the air force to the ground force.²³ It is evident not only that the School was unfairly criticized but that the influence of Douhet was not discerned.

Of significance for the immediate future was OCAC's loosely worded, ambiguous statement that "the main effort in war should

²³"The Development of Air Doctrine, 1917-1941," AUOR, I (Winter, 1947), 11-22; Office of Air Force History, The Army Air Forces in World War II, eds. W. F. Craven and J. L. Cate (6 vols.; Chicago: Univ. of Chicago Press, 1948--), I, 46, 51-52.

be exerted against the main objectives and secondary operations disregarded.²⁴ It left the door seemingly open for future doctrinal accommodation.

²⁴1st Ind., War Dept., OCAC, Sep. 1, 1928 to Commandant, ACTS, reference Basic Letter, Doctrine of Employing an Aerial Force, Jun. 9, 1928, 4-5.

CHAPTER XI

CONSOLIDATION AND INTEGRATION OF DOUHETISM:

1929-1935

For several years after 1928 the Air Corps Tactical School's relations with OCAC remained troubled,¹ but this fact did not deter the dominant, Douhetian group from promptly re-asserting its doctrinal independence within the confines of the institution's stucco walls. Nor did the coolness of headquarters dampen for long the School's ambition to be officially recognized as the chief, if not sole, center of doctrine within the entire air arm.² As might be expected after the 1928 debacle, OCAC turned down these requests, together with associated ones for means of practical field testing of school theory.³ The latter development was especially unfortunate from the larger standpoint of the national interest, as this denial of on-the-spot testing at Maxwell Field, Alabama (ACTS moved from Langley in July 1931) negatively influenced the development of School doctrine, forcing

¹Annual Reports (including enclosures), ACTS to OCAC, 1930 and 1931. See also correspondence between ACTS and OCAC.

²Annual Reports, 1931-1933.

³Memo, Lt. Col. J. E. Cheney, Plans Div. to Chief, T & O Div., Jul. 26, 1933 and related correspondence in NA, RG 18, File 319.1.

it into a largely, if not purely, academic mould.⁴ On the credit side of the doctrinal ledger must be placed the faculty's willingness to modify the Douhetian thesis that enemy resistance could best be undermined and broken by attacking the civilian element of the national structure; in its place the school gradually substituted the national economy, to be attacked at points of maximum stress and vulnerability, a concept dating back to the twenties. With this major exception, the Douhetian system was retained intact. This result was achieved chiefly by maintaining or refining the following distinctive elements in Douhet's theory and methodology:

- (a) a method of exposition, outlined in Combined Air Force, which sought to root air doctrine in the characteristics of the air weapon and the principles of war;
- (b) the concept that war was essentially a strategic, not a tactical, struggle--the major objective, then, being the enemy nation and the national structure;
- (c) a tactical system for gaining control of the air that had as its primary objective the enemy's air force on the ground;
- (d) a force structure that included as many bombers as possible, of the self-sufficient battle plane type, and little or no auxiliary aviation; and
- (e) a grand strategy for the nation that placed chief reliance upon massing in the air for the attack and resisting with smaller forces on the surface.

⁴Exercises took place elsewhere of course, but not under the aegis of the school.

How the schoolmen did this during the late twenties and early and mid-thirties constitutes the essence of this chapter. Insofar as possible, each of the aforementioned topics will be treated as ranked above.

Methodology: Characteristics

Perhaps the most convincing exponents of the Douhetian rationale for bombardment were Lieutenant Kenneth Walker, Major Donald Wilson, and Captain Harold Lee George. Echoing Combined Air Force, Walker in 1929 insisted that any doctrine for employing an air force must be based upon the characteristics of the air weapon and the principles of war.⁵ Radius of action (flexibility), speed, maneuverability, and weight-lifting power (firepower) were outstanding performance characteristics cited by Walker and those who followed him in succeeding years. By virtue thereof, an air force unit operating from a single base could "attack with equal facility enemy objectives several hundreds of miles removed from each other," and an air force might readily extend the size of the threatened area by its ability to shift units from one base to another "within a few hours."⁶ These characteristics, jointly considered, then led Walker and later schoolmen--like Douhet--to posit the existence of "the immense striking power" of even a

⁵Lecture, "Doctrine of Employment of an Air Force," Oct. 23, 1929, 6. (All citations which follow are lectures, unless otherwise noted.) In deriving and developing doctrine, attention would also be paid to technical factors and utilization of the best thought of military men throughout the world. Ibid.

⁶Ibid., 5-7, 9; Bombardment, 1933, 82.

relatively small number of aircraft loaded with bombs and chemicals. In 1930 the text for the Air Force course stated flatly that most targets could be destroyed by comparatively small numbers of aircraft.⁷ In 1934, speaking officially for the Air Corps Tactical School, Major Donald Wilson, then chief instructor in the Air Force course, asserted not only that the airplane had brought the entire nation within the combat zone but that relatively few of them would be required in a future war to cause a quick collapse of industrialized northeastern United States and the attendant defeat of the nation.⁸ In a lecture during the same year, Wilson, probably the most ardent, capable, persistent, and vocal of the bomber enthusiasts, declared that the rapidity with which air forces effected destruction permitted one to characterize their tactical action during wartime as strategically continuous for all practical purposes.⁹ Captain Harold Lee George, another vocal champion of the bomber and disciple of Douhet at the school, told the Federal Aviation Commission (FAC) that "air forces have the power to destroy any vital objective on the face of the earth."¹⁰ But, conversely, the airplane could not be used for air defense in any literal sense, lecturers maintained, for there were no positions in the sky, no

⁷Air Force, 1930, 64.

⁸Wilson Testimony, Testimony Presented before the Federal Aviation Commission, Washington, D. C.: (n.p., n.d.), ca. Oct. 1934, 5. (Hereafter cited as FAC.)

⁹Wilson, "Characteristics & Org.," Mar. 27, 1934, 5.

¹⁰Harold Lee George Testimony, FAC, Oct. 1934, 5.

trenches which might be dug. Again and again this Douhetian analogy was cited.¹¹ By virtue of its characteristics, then, air power was inherently offensive in nature and correct employment dictated its use for attack.¹²

Principles of War: Offensive

While the nine traditional principles of war were familiar to American military students, it was reiteration of Douhet's interpretation and use of a few of them that proved especially significant in developing American military air doctrine, notably those of the offensive, mass, objective, and economy of force. This process, first applied in 1926 and reformulated by Walker in 1929, persisted despite temporary divergences of view within the school and in relations with Air Corps Headquarters. Though instructors changed, most of them in time adopted Douhetian interpretations and arguments, even to the extent of borrowing some of the master's favorite analogies and phrases. A 1930 text stated unequivocally that "an air force never assumes a defensive position," that "a striking force once in the air cannot be stopped," and that victory would accrue to him who struck first, struck hardest, and struck most often.¹³ Major Hume Peabody, who taught the Air Force course during the early 1930's, declared that

¹¹Maj. Hume Peabody, "Prins. of War," Apr. 20, 1932, 2; Capt. H. L. George Testimony, FAC, 1934, 4; Capt. Robert M. Webster Testimony, FAC, 2.

¹²Wilson, "Characteristics and Org.," Mar. 26, 1934, 7.

¹³ACTS, Air Force, 1930, 66-7 Cf. Douhet, Faber ed., 93-4, 107-8, 115.

"the only way an air force can defend an area is to destroy or neutralize the attacking force, either in the air or on the ground."¹⁴ In 1934, Donald Wilson emphasized that "regardless of the whole national effort being defensive, the air force as a whole must wage an offensive action, . . . principally because that is the only kind of action for which an air force is suited."¹⁵ (Italics added) There was no defense against "a strong, well-equipped, and properly indoctrinated air force" except through offensive action.¹⁶ He further argued that the nation's defense could be provided "only by preventing the establishment of the hostile air force within striking distance, which, of course, requires a readiness and a willingness to declare war before such an unfavorable situation is brought about."¹⁷ Wilson asserted that "when war is inevitable only the unprepared will sit back and wait to be attacked. Regardless of the ethics involved, we can rest assured that air action will be tactically offensive even though it is designed to produce national defense. Air forces have no other choice. . . . The benefits of initiative derived from the offensive are perhaps . . . more manifest in air force action than in any other form."¹⁸

¹⁴Peabody, "Prins. of War," Apr. 20, 1932, 2.

¹⁵Wilson, "Air Force Prins.," 27 Mar. 1934, 2. See also ACTS, Lecture, Oct. 28, 1929, 32, 34, and similar lectures in succeeding years; Air Force, 1931, 21, 35; Air Force, 1935.

¹⁶Wilson, "Air Force Prins. & Strategy," Mar. 22, 1935, 2.

¹⁷Wilson, "Characteristics," Mar. 26, 1934, 4.

¹⁸Wilson, "Prins. of War Applied . . .," Mar. 28, 1934, 6. See also Air Force, 1931, 20, 35; ACTS, "Air Force Prins. & Strategy," Mar. 22, 1935, Prins. 2, 18, and 19, pp. 1, 6.

Pointing out that "an Air Force is powerless to delay the air offense of the enemy in order to gain time . . .," the Air Force text for 1935 declared that "the aim of air strategy is the assumption of the immediate strategical air offensive in war. . . ." Any other course, the author warned in words reminiscent of Douhet, invited "complete defeat."¹⁹

Surprise.--Not only did the air weapon lend itself well to utilization of the principles of offensive and initiative, but to that of surprise as well. "Air forces possess, to a greater degree than any other military force, a flexibility which empowers them with the greatest capabilities for surprise."²⁰ This mobility made it difficult if not impossible for the enemy to predict future points of attack while the speed of aircraft precluded any but the slightest warning of impending attack.²¹ In like manner this characteristic also facilitated the massing of one's air power for the attack.

Mass.--Douhet's insistence upon operations in mass was reiterated most effectively during the early thirties. His concept of attack by successive waves of aircraft became the vogue at the school. The authors of the Air Force text for 1930 were the first, it appears, to refer to the concept of attack by "waves."²² In

¹⁹ACTS, Air Force, 1935, Part I, para. 32. See also Air Force, 1936, 21.

²⁰Wilson, "Prins. of War Applied," Mar. 28, 1934, p. 6.

²¹Ibid.

²²Air Force, 1930, 66.

1932 Peabody, speaking of this concept, credited Italy with the achievement:

The leading aerial nations are in accord on one point, at least--that mass is necessary for effective air force employment. The Italians are perhaps the most radical of all nations in this respect. Their conception of successful air force employment is an almost continuous succession of waves of bombardment. They believe that nothing can stop such an attack unless it be vastly superior pursuit forces--that is, stop one or more waves. They cannot conceive of all waves being stopped, even in the daytime.²³

Mass need be attained however only at the objective. Air forces would take advantage of the tactical mobility afforded by the airplane's speed, range, and flexibility to converge from varying points on the target area. Factors other than the purely quantitative were to be considered in determining mass, viz., "superior leadership, training, discipline, morale, physical condition, weapons, equipment and supply."²⁴ This would appear to be an almost direct reference to the role which such factors played in the success scored by the German Independent Air Force in "The War of 19__," though Douhet had already referred to such factors as early as 1928 in The Probable Aspects of the War of the Future. Captain Claire Lee Chennault, senior pursuit instructor at the School in the early thirties, says that "publication of . . . Douhet's 'The War of 194__' [sic] . . . stirred bomber enthusiasts to a new pitch of fanaticism. . . . The Douhet book . . . became

²³Peabody, "Prins. of War," Apr. 20, 1932, 2. For his references to Douhet, see below, 244, 246.

²⁴Peabody, 2C, "Prins. of Air Force Employment," 1933, 2.

the secret strategic bible of the Air Corps."²⁵ Authors of the Air Force text also observed that an air force could make the fullest use of the principle of mass by operating in daylight, whereas at night it would have to resort to a series of individual sorties.²⁶ In 1932 Peabody argued: "We want mass, and we can attain mass in daylight operations. . . . When we arrive at our objective, the better the visibility, the better our chances of accomplishing the desired destruction."²⁷ It is notable that Douhet, who for long did not appear particularly to favor one over the other and insisted only upon the necessity of concentrating upon one, came out in 1930 for daylight operation. In any event, Douhet's advice that mass was the first governing principle of actual employment was well received at ACTS. It was refined still further by Wilson, Peabody's successor, who judiciously combined the principles of mass and economy of force. He pointed out that mass could be obtained either by means of numerically strong bomber formations, one blow of which would destroy the objective, or through the cumulative effect of repeated blows administered by weaker formations.²⁸ In certain cases the latter represented a more efficacious application of the principle of economy of force, one highly valued by Douhet and of special importance during the Depression years.

²⁵Way of a Fighter (New York: Putnam, 1949), 20-21.

²⁶Air Force, 1930, 52.

²⁷Peabody, 3C, "Daylight Ops.," Apr. 22, 1932, 1.

²⁸Wilson, "Prins. of War Applied," Mar. 28, 1934, 6.

Economy of Force and Objective.--In a tactical or operational sense, economy of force required that the air force expend "just enough, and no more, effort on each mission to produce the desired results." Viewed strategically, however, this principle dictated that the size and apportionment of types or classes of aircraft be commensurate with the demands posed by the most critical situation that would confront the force.²⁹ But, so considered, this principle could not be divorced from constant reference to another most crucial one, that of the objective. Thus Wilson saw that "the principal guide for the direction of air force effort is strict and determined adherence to the principle of the objective."³⁰ Quickly, in the fashion of Douhet, he related military to national objectives:

Without question the objective for military effort is that which will give the greatest return consistent with our national aims. . . . The ultimate military aim is the destruction of the enemy's material and moral means of resistance. . . . The selection of major air force objectives is the very essence of proper employment.³¹

Peabody the year before had explicitly credited Douhet on this point: "As Douhet has said, 'The art of air strategy consists mainly in choosing the objectives.'"³² Here future air force commanders would show their mettle. This would involve ability to detect the enemy's most vulnerable features, for in the latter

²⁹Ibid., 7.

³⁰"Air Force Prins.," Mar. 27, 1934, 4.

³¹"Prins. of War Applied," Mar. 28, 1934, 5.

³²"Prins. of War," Apr. 6, 1933, 1.

would be found the best objectives for the air force.³³

Concept of War and Military Objectives

Since the determination of military objectives was in large part a function of one's concept of war--strategic or tactical, surface or air oriented--the Tactical School's resolution of the problem of objectives hinged upon the philosophy espoused by its dominant group. In almost monotonously identical form the Douhetian concept of war was invoked throughout these years. The major proposition of course was that the air weapon made it possible for a nation with a properly constituted air force (a) to by-pass the opposing surface forces interposed between it and the true objective, the enemy nation per se, and thus (b) to win readily by proper, i. e., offensive, employment of its air organization against the enemy people.³⁴

While there was general agreement that the major objective was therefore the enemy nation, not its army and navy, there was considerable doubt as to whether the weakest, most vulnerable element in the nation was civilian morale or the economic fabric of society. While Douhet had refused to lay down any invariable rule for selection of objectives in Command of the Air, and usually conjoined the material and moral resistance of a nation, he had nonetheless increasingly attached ever greater weight to attacking

³³Wilson, "Air Force Objectives," Apr. 6, 1934, 5.

³⁴George Testimony, FAC, 1934, 1; H. L. George, An Inquiry into the Subject: War, Fall 1935, Air Force course. In USAFHA, 248.11-9.

morale. In this connection it is interesting to note the shift of Major Hume Peabody's views on objectives as illustrative of the changing position of the School. Peabody moved step by step during the early thirties from a tactical-ground force oriented view of air power toward a Douhetian posture; seemingly more skeptical and conservative than most, he came to accept fully the Italian's counter-air force theory, characterizing it as "the preliminary to the main bout,"³⁵ but explicitly questioned--perhaps he was the first to do so--Douhet's advocacy of "action particularly against the morale of the people."³⁶ He was apparently the only lecturer in the Air Force Course, the capstone of the curriculum, to make specific reference to Douhet, though he did not always do this. Admitting that most of the professional opinions cited by the School favored air attacks against morale and might well lead to the suspicion that it advocated such attacks--which he denied--Peabody went on to present the case for strategic bombing of industrial centers on a presumably humane and scientific basis:

Eliminating political objectives, and operations against the hostile air force, most air force operations will be against strategic objectives. . . . The aim of the air force may be said to be the disintegration of the enemy's resources for military production, and his means of securing the arrival at the port of men, materiel, and supplies. . . . Disorganization and paralysis, rather than complete destruction, is the aim because it is more economical, and is equally

³⁵Lecture, AF5C, "Air Force versus Air Force," Apr. 27, 1932, 1; cf. same lecture for 1930-31, p. 4.

³⁶Lecture, "Objectives," Apr. 6, 1933, 6.

effective. . . . For example, if the enemy's fuel supply could be destroyed, or kept from arriving at airdromes, it would be unnecessary to destroy engines, airplanes, pilots, etc.³⁷

Peabody, who was doubtless familiar with Sherman's identical philosophy (Air Warfare, 1926), proceeded to quote approvingly Royal Air Force Wing Commander A. G. R. Garrod, writing in the January 1930 R. A. F. Quarterly on selection of objectives:

This implies a knowledge of the channels of supply and distribution of all commodities required for the upkeep of the forces. . . . And when all the data have been collected, a sound appreciation must be formed regarding the particular sphere whose disorganization will lead to the most profitable results. Here is a whole new field of study for the air strategist. . . .³⁸

Perhaps taking this advice and following Peabody's lead, Wilson soon questioned Douhet's view on morale as a major objective, without mentioning his name. He pointed out that the thoughts and reactions of people to happenings like air attack were too nebulous to be determined definitely, and believed therefore that it would be "much better to choose physical necessities for the principal objectives of the air force."³⁹ He concluded that interruption of the modern industrial economy would lead to defeat, and that this interruption should constitute the primary wartime objective for an air force. Yet, he admitted in the next breath, that it was possible the moral collapse effected by this

³⁷Ibid., 7-8.

³⁸Quoted in Peabody, "Objectives," Apr. 6, 1933, 8.

³⁹"Air Force Objectives," Apr. 6, 1934, 7.

breakup of the "closely knit web" would suffice to determine the issue.⁴⁰ Subsequently both Lee and George presented this latter view before the Federal Aviation Commission. George's exposition favoring the change was quite Douhetian in spirit. He believed attacks should not be directed against populated centers--not because some precept of humanity might be violated, but because the object could be achieved more easily and efficiently in another way.⁴¹ That means was to paralyze a nation's war industry. In either case, it was a matter of strategic air warfare, and the instrument required was the same.

But this was not the end of the matter, for had not the master indicated the prime necessity--and his own preference--first to gain command of the air? As Captain Webster, who later succeeded Wilson as Air Force instructor, told the FAC, technical progress was constantly serving to enhance the power of the air offensive, while "the inadequacy of all means of defense" was becoming ever more pronounced.⁴² Nothing would avail against the onslaught of the enemy air force, once underway. But if one could defeat the air adversary, the way would be open for complete victory. After reiterating these Douhetian precepts, Webster expressed the same preference as the master--to make destruction of the enemy air force the immediate primary objective.⁴³ Still

⁴⁰"Prins. of War Applied," Mar. 28, 1934, 3; Wilson Testimony, FAC, 1934, 3.

⁴¹George Testimony, FAC, 9.

⁴²Webster Testimony, FAC, 2.

⁴³Ibid., 9-11, 22-24.

another variation was provided by Walker who identified both the industrial structure and the hostile air force complex as primary objectives.⁴⁴ But precise and lasting agreement on the ordering of objectives eluded the School, and the consensus reached in 1935 reflected a compromise. The hostile air force would inevitably be the first objective for attack in any modern conflict between major air powers, but the opening phase would also see air forces, when radius of action permitted, strike directly at the nation's economic structure.⁴⁵ A major reason for the school's seeming inability to stick to its own principle of the objective lay in the air weapon's remarkable adaptability to various kinds of missions, roles, or tasks and consequently different force structures.

Employment and Structure

The principle of economy of force required that there be no repetition of earlier mistakes in designing, producing, and employing the various types of airplanes needed to achieve the objectives of the air force. The school felt that for too long a preponderance of air strength had been mistakenly devoted to essentially defensive and ancillary tasks--air combat and ground support--at the expense of the decisive, striking arms of

⁴⁴Walker Testimony, FAC, 5.

⁴⁵ACTS to OCAC, A Study of Proposed Air Corps Doctrine Based upon Information Furnished by WPD, General Staff, in Memorandum, dated Dec. 21, 1934, Jan. 31, 1935, 6 (para. 18). Hereafter cited as Proposed A.C. Doctrine (1935). In N.A., RG 18, CDF 321.9.

aviation.⁴⁶ Thus the school complained about the obsolescent Air Corps tables of organization which at the turn of the decade still provided for "pursuit aviation at the ratio of about 60% of the entire Air Corps."⁴⁷ It also thought that much of attack aviation was being misused because it was largely allocated to field armies.⁴⁸ As for ACTS's own views, Combined Air Force in 1926 and the "Doctrine of an Air Force" in 1928 clearly showed that it predicated its doctrine of employment solidly upon the fundamentally Douhetian concept of the prime efficacy of bombardment in modern aerial warfare. Upon that basis the School in subsequent years developed the concept of bomber invincibility and made it the hinge upon which all else depended. The expressions, "bombardment, with and without support," and "bombardment, the basic arm," became commonplace thereafter. Attack aviation was accorded a similar but subordinate status by virtue of its exceptional functional value in light bombardment operations against anti-aircraft batteries and enemy air forces on the ground. The only certain way, of course, to achieve security for one's own force was to strike the enemy air force on the ground before he could

⁴⁶Walker, "Passive Defense of Airdromes," Oct. 28, 1929, 43; Wilson, "Characteristics and Org.," Mar. 28, 1934, 6. See also Annual Reports, including inclosures, 1930-32.

⁴⁷Ibid., 32-33; Walker, "Personnel and Trng.," Oct. 25, 1929, 27.

⁴⁸Wilson, "Characteristics and Org.," Mar. 28, 1934, 6.

attack.⁴⁹

As early as 1928 the School adopted Douhet's concept of the battle plane. Subsequently, the ideal or prototype it held up for emulation was Douhet's self-sufficient bomber fleet, graphically depicted in "The War of 19__"--a force able to hold its own even if outnumbered. The text, Air Force, in 1930 read:

In air force operations, numerical superiority is unnecessary provided the striking force be strong enough to force its passage through whatever hostile pursuit may be brought against it. . . . An air force gains superiority over its enemy, ground or air, through superior leadership . . .; by fortitude, including physical and moral courage, and the ability to maintain a high morale under adversity; and above all through the realization that a striking force once in the air, cannot be stopped.⁵⁰

Bombardment texts of course elaborated this theme.⁵¹ Deep unsupported daylight penetrations were already contemplated in the 1930 Air Force Text, using heavily armed, wave-like formations.⁵² It was accepted that bomb loads would include chemicals and incendiaries as well as explosives.⁵³

⁴⁹Walker, "Doctrine of Employment of an Air Force," Oct. 23, 1929, 17; Air Force, 1930, 26, 37; Air Force, 1931, 69-70; Bombardment, 1931, 69-70; Wilson, "Characteristics and Org.," Mar. 26, 1934, 7; ACTS, Proposed A.C. Doctrine (1935), Sec. IV, 4 (Prins 6 & 7).

⁵⁰Air Force, 1930, 66-67. Cf. Douhet, Command of the Air, Faber edit., 45, 92, 107-8, 115; "The War of 19__" in ibid., 276-77, 286, 297-98, 303.

⁵¹Bombardment, 1931, 69-70; Bombardment, 1933, 21-2; Bombardment, 1935, 16; 34-5; 141.

⁵²Air Force, 1930, 53, 64-6, 88, 92; "Bombardment Theory," Jan. 25, 1937.

⁵³Bombardment, 1933, 33.

Concomitantly too, as in the Douhet system, pursuit and pursuit pilots increasingly lost status, and from 1928 on this arm was thrust aside more and more until it reached its nadir in the middle thirties, not only at the school but even within the Air Corps itself.⁵⁴ As Chennault, the school's leading pursuit advocate, put it, the issue became "not how many or what kind of fighters we should have but simply whether there should be any fighters at all," an attitude that infected even OCAC.⁵⁵ For several years he contended vainly against Wilson, George, and Walker, his foremost protagonists, all of whom later became influential staff planners under General Arnold. At one time the School went so far as to drop its course in fighter tactics.⁵⁶ Though Chennault was sure he had uncovered a critical error in the Douhet thesis that bombardment alone sufficed to win, he was unable to convince anyone of it. He believed that pursuit's ineffectiveness in the past was due to lack of definite, continuous information concerning the whereabouts of the air-borne bombers, and pursuit performance in the Fort Knox air exercise in May 1933 seemed to bear out his contention.⁵⁷ In any event, School doctrine

⁵⁴ACTS, Ass't Commandant to OCAC, 1st Ind. dated Nov. 25, 1939 to basic letter, The School Treatment of Pursuit Aviation, Nov. 15, 1939. Harmon gives 1934-36 as "the all-time low in Pursuit instruction."

⁵⁵Chennault, Way of a Fighter, 26.

⁵⁶Ibid., 20, 26-7, 29.

⁵⁷Chennault, The Role of Defensive Pursuit, Maxwell Field, Ala.: n.d., ca. 1933, 12-13, in USAFHD 248.282-4, 24-38.

on pursuit employment remained unchanged. Being primarily defensive in character and limited in radius of action, fighters were not expected even to try to gain control of the air. But pursuit did constitute a valuable mobile defense force for the protection of airdromes, and by destroying hostile aircraft it also aided in defeating the enemy air force.⁵⁸ Insofar as pursuit was able to accompany and provide some measure of support to the bombers, it would of course be at the expense of reducing the striking force's strength. The School applied this eminently Douhetian principle not merely to specialized types of aircraft like fighters but to auxiliary aviation as well.⁵⁹ The economy of force principle, as taught by Douhet, not only demanded such rigorous negative pruning of non-essentials but also positive direction of all resources toward the most efficacious attainment of the air force's objectives within the context of the national defense in peacetime as well as wartime.

The purpose of air strategy in peacetime, the School suggested, was to extend air power outward from our frontiers into "the spheres of military influence recognized by national policy" in the interest of national security.⁶⁰ This over-all objective could not be achieved without the carefully planned

⁵⁸ACTS, Proposed A.C. Doctrine (1935), Prin. No. 10, Sec IV, 1; Wilson, "Characteristics & Org.," Mar. 26, 1934, 3.

⁵⁹Wilson, "Air Force Prins. & Strategy," Mar. 22, 1935, 2; ACTS, Proposed A.C. Doctrine (1935), Sec. IV, 1.

⁶⁰ACTS, Proposed A.C. Doctrine (1935), Sec. IV, 1.

creation of the required air force in being, the establishment of the necessary complex of bases in strategic world areas, and provision for adequate logistical support therein.⁶¹ Thus the School seemed here too to be following Douhet's precepts as to the composition and strategy of air power, much as an earlier generation of naval strategists was influenced by Mahan's thinking on the composition, influence, and employment of sea power. Certainly, in the strategy recommended for the country, the School followed Douhet closely: "The ideal strategical combination in modern war is the air offensive and the ground defensive."⁶²

Conclusion

Careful examination and comparison of the thought of Mitchell, Douhet, and the Air Tactical School--period by period--prove beyond any doubt that the School's doctrine derived not primarily from Mitchell, as asserted by leading air historians, but rather from Douhet. This study has also shown that Mitchell himself fell increasingly under the influence of Douhet's thought, beginning around 1922-23 and culminating around 1929-30 with his acceptance of all important points, including the battle plane concept of 1927. To the extent that Mitchell exercised influence at the School, to that extent it reinforced the Douhetian pattern of thinking there. But that it was not dependent on Mitchell--who was never mentioned in lecture or text--as the source of

⁶¹Wilson, "Air Force Prins. & Strategy," Mar. 22, 1935, 2.

⁶²ACTS, Proposed A.C. Doctrine (1935), Sec. IV, 1.

its inspiration is shown in the School's espousal of the entire Douhetian system not only before Mitchell himself accepted it in its entirety but in the very rendering of the text in many instances.

While the School throughout the period 1920-1935 was of course subject to various influences of an intellectual order, there was none so pervasive or significant as that of Douhet. The very fact that his was a carefully integrated theory, with all constituent elements derived from and dependent upon his philosophy of strategic air warfare, helps account for his penetrating influence there. For the school embraced during the decade 1925-1935 his unique counter-air force strategy, battle plane concept, minimization of pursuit, conversion of observation and attack roles to support bombardment, rationale for concentrating all possible resources on the striking force, self-sufficiency of the air organization--including dispersal for security, and passive air defense, as well as his war-winning formula for using massed air power to destroy the most vulnerable elements of the enemy nation.

But of course this does not intrinsically explain why the School acted as it did. Although all the motivations involved in the drama will perhaps never be fully known, a suggested explanation is proffered. The attractiveness of Douhet's theory cannot be understood apart from the peculiar postwar milieu of the Air Service world. Condemned as a service arm to perpetual subordination to the infantry--a role not only confirmed by its own World

War experience and seemingly fated to continue indefinitely by virtue of the immense superiority of the defense--the Air Service was looking for a way out of the doldrums. In the vacuum thus created, the Douhet theory rushed in. Shining vistas were opened which not only lent new meaning to air power but showed that an air force, if properly constituted, was the only arm needed for victory in the war of the future. As early as 1923 the formula in its original form stood ready to hand in the Air Tactical School Library, and from then on it was simply a question of time before airmen would put it to use.

The schoolmen's faith in the new dispensation--itself finalized in the latter testament of 1927--was manifested first in 1926 in the publication of Combined Air Force; then in 1928 in the evangelical effort to persuade the hierarchy to propagate these articles of belief; and thereafter in the persistent efforts of the School to make itself the central shrine for the interpretation and development of doctrine. True, modification occurred--but not at the hands of others; the chief doctrinal reform did not affect the philosophical core but only increased the efficacy with which the central aim could be realized. Within a mere decade, then, the School, largely by virtue of its inspired and infallible doctrine, had established itself as the intellectual center of the Air Corps and had propagated its influence so successfully that by the mid-thirties its tenets were Air Corps tenets. Its modified Douhetian doctrines served as the foundations for AAF strategy in the Second World War and provide the

rationale for the Strategic Air Command of the thermonuclear age.

Thus Douhet's influence has ranged widely from his lifetime to the present, although often those who reflect that influence are seemingly unaware of its source. Generals Arnold and Eaker, commenting in 1941 on the German Air Force's destruction of its Polish rival on the ground, wrote:

This was in accord with the best modern air teachings. Our airmen said, 'They have done it according to the book.' We have always thought that the enemy air force was the first target for attack. Our school books talk about destroying the enemy air force on its own airdromes--'shooting the eagle on its nest.'⁶³ [*Italics added*]

Several other important Douhetian tenets are repeated in the remainder of the book, including those associated with bomber invincibility (despite the Battle of Britain!).⁶⁴

The Germans realized fully that they were following Douhet, for, as General Galland points out, "the main thesis of German air strategy was always: first, the destruction or elimination of enemy air power, including its armament industry and sources of power," and the German Air Force was structured in 1939 according to Douhetian ideas, with 39 bomber groups to 13 fighter groups.⁶⁵

In the United States the Defense Department is constantly devising new means of dispersing our air power and otherwise

⁶³Winged Warfare (New York & London: Harper, 1941), 131.

⁶⁴Ibid., 127, 132, 137-38, 140, 144-45, 150. Cf. Arnold and Eaker, This Flying Game (New York: Funk & Wagnalls, 1936, rev. 1938), especially 129, 136, 139.

⁶⁵"Defeat of the Luftwaffe: Fundamental Causes," AUQR, VI (Spring, 1953), 23.

reducing the vulnerability of our air forces (another Douhetian tenet); concern is expressed in Pentagon circles over the potential enemy's capability "to attack American birds in their own nests."⁶⁶

Even the Kennedy-Johnson Administration's strategy of nuclear response is apparently predicated on the Douhetian concept of the primacy of the counter-air force attack, for the initial and primary response to a hostile attack is reportedly to be a selected effort to knock out the enemy's "birds" on the ground.⁶⁷ Air Force manuals on doctrine confirm this emphasis on counter-force strategy.⁶⁸ Of course the Eisenhower Administration's emphasis on "massive retaliation--aimed at cities, primarily--was just as Douhetian. It is evident that Douhet's air power doctrine fits the weapon system of the nuclear and thermonuclear age remarkably well, and hence it may be anticipated that his thought will continue to exert a powerful influence on mankind so long as those or similar aero-space weapons are available.

⁶⁶William Beecher, "Future Missiles: Defense Experts Weigh Many Means to Lessen Weapons' Vulnerability," Wall Street Journal, Jun. 25, 1964, 1, 6.

⁶⁷Ibid., "Mightier Missiles: U. S. Shifts Emphasis from Quantity to More Power and Reliability," Wall Street Journal, Nov. 11, 1963, 1, 6.

⁶⁸Air Force Manual 1-2: United States Air Force Basic Doctrine (Washington: Dec., 1959), 11, 13.

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Evaluation: Data are invaluable for research in the area of doctrine. They provide the only known means of ascertaining with any degree of precision what the School's doctrinal stance was at any given time. They also afford clues as to undercurrents of thought within the School.

II. Archival materials located in the National Archives, Washington, D. C.:

- A. Records of the Air Service, 1917-1926;
- B. Records of the Air Corps, 1917-1935;
- C. Central Decimal File of the Army Air Corps, 1917-1938;
- D. Central Decimal File of the Adjutant General's Office, 1916-1939;
- E. Central Decimal File of the Joint Board, 1919-1935.

Evaluation: Data bulk exceedingly large. The relatively few items directly pertinent to this study were, however, of inestimable importance in determining the doctrinal relationships between the field and the headquarters staff.

III. Archival materials located in the Library of Congress (Manuscripts Division):

- A. William Mitchell Papers.

Evaluation: Of the 49 boxes or containers of materials, a relatively small number proved to be of value in

establishing the pattern of Mitchell's thought during periods for which other sources were deficient or lacking.

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GLOSSARY

Essential Definitions*

Air power

1. That power that arises from man's ability to fly in a vehicle or to cause a vehicle to go through the air or through space, and to exploit in lesser or greater degree the complex relationships that result from this ability. . . .

Note: In this sense, air power is essentially a phenomenon, the nature of which has certain inherent attributes or characteristics. Its full exploitation and use depend upon the soundness of man's concept of it. It emerges from three quite different abilities. The first of these is the ability to fly. The second is the ability to evolve new tactics, strategy, and methods of transport--all based upon hitherto unrealized speeds, range, mobility, and flexibility. The third is the ability to turn these first two abilities to account in political, diplomatic, military, cultural, and economic affairs.

In the first of these, the 'ability to do something in the air' (Mitchell) depends upon knowledge of certain laws of science coupled with inventiveness, . . . raw materials and industrial plants, . . . fuels, and mastery of the techniques of aircraft control, air navigation, maintenance, etc., to the end that flight is achieved with greater ease. . . .

In the second, the ability depends upon understanding and exploiting certain dynamic relationships and principles that arise from new speeds, flexibility of movement, elimination of geographic barriers, etc.

In the third, the ability, akin to the ability that gives dominion or sway to a farsighted leader, depends upon recognizing and exploiting the political, diplomatic, military, and economic opportunities opened up by the development of the first two sources of this power.

2. An instance of this power as it exists in a particular nation

Concept

1. A notion or idea about the nature of a thing, e. g., of matter, electricity, or air power, as in 'Einstein's concept

*Taken from The United States Air Force Dictionary.

that mass and energy are forms of the same thing was yet untested.'

2. A mental image or idea of how a thing should be done or established, i. e., an idea that guides, as for example, a concept on how to carry out an operation, or how to set up an organization, or what elements should inhere in command, etc.

Note: In sense 1, the concept is of a phenomenon. The concept is sound or unsound in proportion to its approximation of the true nature of the phenomenon. (See phenomenon and air power.)

In sense 2, the concept is not of a phenomenon; hence, it is not judged by the criterion of trueness. It is, rather, an idea or plan of what can be or has to be done, e. g., concept of strategic bombardment. "Concepts are conceived, doctrines taught."

Doctrine

. . . Specif., 1. A teaching on the nature of a thing and on what can be done with it, which teaching is cast in the form of a proposition or of propositions that are either true or false. . . .

2. A teaching on how to do something, or on what to do in a given situation. . . .

Note: In sense 1, doctrine on the nature of air power or war is either true or false as the concept is true or false. In sense 2, doctrine is evolved to give guidance in particular situations. . . .

It is not uncommon to regard concepts as doctrines, and in a manner of speaking they are, for the differentiation between the two is often one of aspect rather than substance, and the two, esp. in military contexts, are so much a part of each other that one cannot be considered without the other.

Phenomenon.

In positivistic usage, any real entity, as an object, event, development, or set of dynamic relationships, that shows itself as an instance of the operation of some natural law, and is actually or theoretically subject to analysis and explanation.

Note: To regard a thing as a phenomenon is to regard it in a particular manner, that is, as a manifestation of some inner law or principle. The attention is upon the thing not as something merely to be outwardly observed and recognized, but as something to be explained and related. In observing it, the mind is occupied in formulating a concept of it. For example, when we say, 'The airplane has become an instrument of national policy,' we are thinking of the airplane as a

phenomenon, relating it as a symbol of air power to principles that may be employed in developing national policy. But when we say, 'Four airplanes landed,' we are not considering the airplanes as phenomena, rather, in this instance, the event of their landing is the phenomenon. That the phenomenon has existence apart from man's concept of it is indicated by the fact that the concept we have may be true or false. Many things dealt with in the Air Force are looked upon as phenomena. These include air power, compressibility, flight, radioactivity, etc. See 'concept,' n., sense 1. For example of use, see 'air power, sense 1, note.

Strategy

1. The art or science of using such factors as time, space, geography, politics, and trends of events, together with available or potential power, to achieve a previously-conceived objective.

2. The use of these factors to create advantageous conditions for meeting the enemy in combat, either to compel surrender or to achieve some other objective; the process of working out an operation so as to strengthen a nation or force, or to lessen the effects of its defeat, in its ultimate position.

Strategic concept

A particular notion or idea on how to use a force, condition, event, or anything else, so as to achieve or maintain a strategic advantage, a particular idea on how to fight a war.

2. A concept as to the nature of air power or war that leads to an emphasis upon strategic operations. (See concept)

Note: In sense 2, with specific reference to air power, the concept embraces the idea that air power, if properly understood and employed, is a means of destroying the war-making potential of an enemy, esp. by means of strategic bombardment.

Tactical

In sense 1, of or pertaining to tactics, i. e., to the arranging, positioning, or maneuvering of forces in contact, or near contact, with the enemy so as to achieve an objective in an air campaign, air battle, or surface battle.

Tactics

1. . . . the art or science of using equipment and weapons, or using military persons or units, or using positive action or passivity--all with the purpose of achieving in a combat situation some immediate advantage or ameliorating a disadvantage with the force or forces at hand.

2. A maneuver or positioning carried out in a combat or battle situation in accordance with such art or science, as in 'the pilot's tactics were to come in firing.'

Tactical air doctrine

Detailed doctrine in respect to how to employ air vehicles

in tactical air operations. . . .

Tactical air operation

An operation carried out by aircraft or air units against, or in the presence of, a hostile force, including cooperation with surface forces.

Note: In its broad and most acceptable sense, the term . . . includes any air operation in which tactics are employed against a hostile force. Thus, an air defense operation would be a species of tactical air operations the same as close air support is a species of tactical air operations. Likewise, the use of tactics to penetrate defenses to a strategic target is, in fact, a tactical air operation. . . . In tactical air operations, the targets are either hostile forces or geographic positions essential to hostile forces. This is in contrast with strategic air operations, where the targets are factories, storage plants, railroad yards, other war-making facilities or installations, and long-range air installations not immediate to a battle area.

Tactical concept

1. A particular notion or idea as to how to fight a battle.
2. In military theory, a concept of war or air power that leads to an emphasis on tactical operations as the best means of achieving victory.

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