

# History of the Air Corps Tactical School 1920 - 1940

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## Foreword

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In the 1930s the Air Corps Tactical School at Maxwell Field, Alabama, was the birthplace and nurturing ground for American air doctrine. The work undertaken at the school became manifest in the skies over Europe, the Mediterranean, and the Pacific in the Second World War. Those who studied and taught there were the same individuals who prepared America for war, and then led its airmen into combat. This band of men spawned and shaped the independent United States Air Force in the postwar era. Their influence is still felt today, for they developed the airpower doctrines and institutions that enabled the United States to prevail in the Cold War. Their strategic vision, evolved from the thoughts of Douhet, Mitchell, and Trenchard, is now embodied in the Air Force's notion of *Global Reach—Global Power*. The legacy of the Air Corps Tactical School continues on with the comprehensive programs of the Air University, the world's premier airpower training institution. From flight within the atmosphere to flight within space, American airmen fly their missions based on principles enunciated in the lecture halls of Maxwell Air Force Base.

Dr. Richard P. Hallion  
Air Force Historian



**Air Service Tactical School Quarters, Langley Field, Virginia**

***Note:* the cover painting depicts the school at Maxwell Field, Alabama**

## Introduction

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The air experience of World War I demonstrated, among other things, the need for officers trained in the employment of military aircraft. Hence, in 1920, concurrently with the recognition of the Air Service as a combatant arm of the Army, the professional education of air officers was provided for by the creation of the new arm's own special and general schools. Among the schools established was the Air Service Field Officers' School at Langley Field, Virginia. This school was subsequently redesignated Air Service Tactical School (1922), and later Air Corps Tactical School (1926). In 1931 the school was moved from Langley to Maxwell Field, Alabama.

Throughout the decades between world wars, the Tactical School served as the highest educational establishment within the air arm. Its basic mission was to train air officers (and selected officers of the other arms and services) in the strategy, tactics, and techniques of airpower. Although the school never lost sight of this function, in its considerations of employment of the air weapon it was confronted by the hard fact that, unlike the other arms and services, it had no long precedent or body of doctrine on which to base instruction. Therefore, the school became inextricably involved in developing air doctrine.

In 1929 the Tactical School adopted as its motto: *Proficimus More Irretenti*. (We Make Progress Unhindered by Custom). It was singularly appropriate. For the record of airpower in World War I was one of promise rather than solid achievement, and the Air Corps Tactical School was more concerned with the promise than with the limited record, with tomorrow than with yesterday. Indeed, the impact of airpower on future wars became the very heart of the instruction given at the school. Admittedly, much of what was taught was based only on theory, but the significance of the Tactical School lies primarily in the fact that it forged an integrated body of concepts for the employment of airpower. It was in its extra-legal role as the doctrinal center for the Air Corps that the school made its most valuable contribution, not only to the air arm, but to the nation.

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## Early Military Education

### Development of Military Educational System, 1802–1914

The United States government has always been concerned with the professional education of its military men. At the conclusion of the Revolutionary War, Maj. Gen. Henry Lee commented that “a government is the murderer of its citizens which sends them to the field uninformed and untaught, where they are to meet men of the same age and strength, mechanized by education and discipline for battle.”<sup>1</sup> Other Revolutionary War figures who remembered vividly the weaknesses and inefficiencies of an army without trained officers went beyond Lee’s general condemnation. In the period immediately following the war, Washington, Hamilton, Knox, and Pickering all urged the establishment of a military academy to provide a hard core of professionally trained officers to command in any future emergency.<sup>2</sup> Washington, in particular, writing just before his death, supported a proposal to establish an academy:

The Establishment of an Institution of this kind on a respectable and extensive basis has ever been considered by men an Object of primary importance to this country; and while I was in the Chair of Government I omitted no proper opportunity of recommending it in my public Speeches and other ways, to the attention of the Legislature.<sup>3</sup>

Shortly thereafter, James McHenry, Secretary of War, also recommended the founding of a military academy, arguing, in part, that “no sentiment is more just than this, that in proportion as the circumstances of a people are opposed to the maintenance of a large military force, it is important that as much perfection as possible be given to that which may at any time exist.”<sup>4</sup>

This early interest in the professional education of military leaders resulted in the opening of the United States Military Academy at West

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Point on 4 July 1802. Thus established, the policy of having the government provide professional military training was strengthened and broadened in the following years. The United States Naval Academy was founded at Annapolis in 1845, and in 1876, the Coast Guard Academy was established in New London, Connecticut.

The three academies, whose graduates were to constitute the backbone of the military establishment, provided the basic professional education for officers of the various services. But while the Military Academy would furnish the Army with the nucleus of the officer corps required in an emergency, the Army very soon felt a need for specialized training of all officers—Academy graduates and nongraduates alike. As early as April 1824 an Artillery School of Practice was established at Fortress Monroe, Virginia, where newly commissioned second lieutenants received a year of practical and theoretical training. At first the student body was made up of those West Point graduates who upon graduation were assigned to the Artillery, but later the course was changed so as to give advanced training to experienced officers.<sup>5</sup> Although the school underwent numerous changes, it set the pattern for future schools in other arms. In 1827 an informal Infantry School of Practice was established at Jefferson Barracks, but advanced training for the various arms did not gain momentum until the last two decades of the nineteenth century. Then, in rapid succession, came the Infantry and Cavalry School at Fort Leavenworth in 1881 and the Cavalry and Light Artillery School at Fort Riley in 1887. By 1904 there were seven special schools for officers of the arms and services: the Artillery School, the Engineer School, the School of Submarine Defense, the School of Application for Cavalry and Field Artillery, the Army Medical School, the Signal School, and the Infantry and Cavalry School.

At the turn of the century the Army felt the need for even more advanced training for its officers. What was needed was an educational system within the service which would go beyond Academy and special school training in the fields of command and staff duties and provide an opportunity for senior officers to retire temporarily from the pressing demands of staff and command duties to consider the serious problems of the nature of war, American theories and doctrines of warfare, and the whole broad question of American national defense. These needs for advanced education of officers were filled in 1901 by the creation of the General Service and Staff College at Fort Leavenworth and the Army War College Washington, D.C. The former underwent numerous redesignations, becoming eventually the Command and General Staff School. This school served, in substance, as the stepping stone between the special schools and the War College, the capstone in the Army's educational system, where courses in military strategy prevailed and where new ideas

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were tested for the General Staff. Hence, by the beginning of the twentieth century provision had been made not only for the education of Army officers on a graduate level but also for their specialized training and education in the arms and services.

When the Army acquired its first airplane in 1909, it took the first step in the development of yet another arm of the service. For several years however, Army aviation remained as an adjunct to the Signal Corps. From the creation of the Aeronautical Division of the Signal Corps in 1907 (redesignated the Aviation Section in 1914) until the entry of the United States into World War I, the formal professional training provided for officers was in no way comparable to that furnished officers of other arms and services, such as infantry, cavalry, artillery, and signal. In 1911 a flying school was established at College Park, Maryland, and continued in operation until near the end of 1912. In January 1913 a second flying school was opened at North Island, San Diego, California. By 1914 this school was offering not only pilot training but also ground-school instruction in various subjects, such as mapping, navigation, aeronautical engineering, meteorology, topography, and internal combustion engines. Instructors and students at the College Park and San Diego schools were intensely interested in the military possibilities of the airplane. They, together with interested civilians and civilian agencies, went far beyond the scope of the formal school curriculum by experimenting with—among other things—machine guns on airplanes, communications equipment for aircraft, bomb sights and bombing, aerial photography, and cooperation with the infantry. Nevertheless, formal training continued to stress the technical aspects of flying and maintenance. Because of the very newness of the airplane the curriculum at the flying schools could not include, as the courses of study at the older schools did for their various weapons, instruction in the tactics, techniques, and employment of the air weapon.<sup>6</sup>

### **The Impact of World War I**

After the outbreak of war in Europe in 1914, nothing substantial was done toward increasing the size of the Aviation Section or broadening the scope of training given to aviation personnel. When the United States entered the war in 1917, time would not permit the establishment of a comprehensive educational system for air officers. Indeed, there were not enough people, within the Army or without, with adequate knowledge of military aviation to inaugurate a full-blown educational system for aviation personnel. Under the circumstances, the military had to improvise and, to a considerable extent, to depend on the Allies for advanced training of the Air Service.

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Experiments in the United States between 1911 and 1916 indicated that American airmen foresaw that the airplane would be not merely a means of collecting intelligence information, but that it would be a weapon of war. When the United States entered the conflict in April 1917, war experience had proved the point. By that time, in fact, certain principles for the employment of airpower already had been well established by the Allies: 1) aerial superiority was prerequisite to successful air operations; 2) the only truly effective means of establishing and maintaining control of the air was through a determined offensive against the hostile air force; 3) when air attacks, both against hostile air forces and vital rear areas, were carried out in depth, enemy reconnaissance and pursuit action against friendly front lines decreased; 4) limiting the air services to reconnaissance and observation failed to utilize to full advantage military aircraft which could take the war to the enemy by bombing and strafing; and 5) in battle the air arm was more effective if concentrated under a single command.

Lt. Col. (later Brig. Gen.) William Mitchell, who arrived in Paris shortly after the United States entered the war and who was, at the time, the ranking American air officer in Europe, was impressed with the theories held by Allied air officers. Echoes of their ideas on the employment of airpower began to dot Mitchell's diary: "The only real defense against aircraft is other aircraft";<sup>7</sup> again, "a very significant thing to me was that we could cross the lines of these contending armies in a few minutes in our airplanes whereas the armies have been locked in the struggle, immovable, powerless to advance, for three years... They get nowhere, as far as ending the war is concerned." By observing and actually experiencing German bombing attacks, Mitchell learned to respect the effects which bombardment could have on material and morale, and he came to believe firmly that "airplane bombing... will have a great effect on all the operations, if efficiently carried out." In May 1917, on a visit to Maj. Gen. Hugh M. Trenchard, Mitchell was profoundly impressed with the Royal Flying Corps commander's advanced ideas on airpower, especially with the view that "an airplane is an offensive and not a defensive weapon" and with the ideas of behind-the-line bombardment and a unified air command.

Although the American Air Service did not play a major role in World War I, Mitchell was able to give convincing demonstrations of the effectiveness of the mass employment of military aviation. The American Air Service learned at Château-Thierry in July 1918 the first real lesson in the use of organized air units; it was a severe and costly lesson. Flying, for the most part, defensive missions against a numerically superior enemy air force cost the Americans a substantial portion of their meager force. Nevertheless, the campaign served to confirm many of Mitchell's earlier

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beliefs. He saw at firsthand the necessity for aerial superiority; he realized that "spreading out or disseminating our air force in small detachments spelled entire defeat for us."<sup>8</sup> He came to see that engaging enemy air units as far as possible from the front and threatening vital rear areas forced the enemy to concentrate his pursuit in the threatened sector; thus, enemy air action at the front against Allied observation planes and against the infantry was reduced and Allied air forces were enabled to concentrate their own air strength.<sup>9</sup>

In only two battles of the war—Saint-Mihiel and the Meuse-Argonne—was Mitchell able to test with a sizable force the theories he had formed on the basis of what he had learned from the Allies and from the American experience at Château-Thierry. In September 1918 the Americans were given the task of eliminating the Saint-Mihiel salient. Elevated to the position of Air Service Commander, First Army, in the reorganization following Château-Thierry and given the responsibility for the air phase of the battle, Mitchell persuaded Allied high commanders to permit him to bring together under his control the largest air force yet assembled, totaling 1,481 aircraft, mostly American and French, but including units of all the Allies.<sup>10</sup>

Perhaps the most important consideration that prompted Mitchell to request such a large force was his awareness of the necessity for aerial superiority. His plan was to assemble a force as large as that of the Germans and to strike first, thus wresting the initiative from the enemy. In order that the plan might not be divulged the force was assembled without decreasing air action in other sectors and without any preliminary air attacks in the assault area. Surprise seems to have been achieved; the enemy initially had only 295 aircraft available to oppose the First Army's 1,481 and Mitchell quickly won aerial superiority. When on the battle's third day (14 September) German aircraft began to appear in increasing numbers, Allied pursuit turned almost exclusively to aerial combat, maintaining effective local control of the air for the last two days of the ground advance. Moreover, the vigorous offensive of the Allied air force forced the enemy airmen to remain on the defensive.

In addition to maintaining control of the air, the air force, divided into two air brigades, struck alternately at the right and left flanks of the salient and at communications and supplies in the enemy's rear. Pursuit pilots trained in aerial combat applied themselves, especially during the first two days of the battle, to long-range visual reconnaissance and strafing. Although inclement weather hampered daylight bomber operations, every day missions were dispatched, forcing enemy air the defensive and drawing it away from the front lines, so that Allied observation operated almost unopposed near the front. Taking advantage the better night weather, British, French, and Italian bombers attacked command posts near the

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front, and points along the rail line over which the enemy was bringing up reserves.

The air battle at Saint-Mihiel was costly to Allied air units but it paid large dividends. While the German armies were largely denied the advantages of aerial reconnaissance and observation and suffered at the hands of Allied aircraft, the American infantry "was kept informed of developments practically hourly" and was relatively immune from attacks by hostile aircraft.<sup>11</sup> The road attacks had blocked the enemy's principal avenue of escape and had increased considerably the number of prisoners taken (over 15,000) and materiel captured when Allied infantry finally pinched off the salient. The success attending the employment of so large and heterogeneous a force demonstrated the validity of Mitchell's contention that the air force should, and could, be massed under one commander for successful operations and set the pattern for Air Service operations for the last two months of the war.

Although never again able to mass as large a force as he had at Saint-Mihiel, Mitchell employed the same principle of concentration during the more extended Meuse-Argonne offensive, 26 September to 11 November. Thus, when the German air service struck at the Americans on the flanks of the Meuse-Argonne salient to "make our infantry insist on splitting up our pursuit aviation so as to give local protection everywhere," Mitchell refused "to spread a thin veneer of airplanes along the front through which the enemy air could break easily at any point with a large group formation."<sup>12</sup> Throughout this last Allied operation, Mitchell's pursuits remained on the offensive, searching out and attacking hostile aircraft and airdromes, maintaining local air superiority, and continuing their strafing attack; bombers worked largely on communications and troop and supply concentrations.

The operations of the Air Service, AEF were almost entirely tactical, but if the war had lasted for a few more months the Americans almost certainly would have participated in a projected strategic air war against Germany. German bombing of London and creation by the British in October 1917 of a striking force designed specifically for strategic attacks against Germany had indicated an awareness of the strategic potentialities of the air weapon. Moreover, in November 1917 Lt. Col. E. S. Gorrell of the American Air Service had prepared an amazingly comprehensive plan for "strategical bomb dropping" (defined as bomb-dropping against "commercial centers") against Germany.<sup>13</sup> Although the Gorrell plan was never implemented, before the end of the war the British had established an independent air force within the RAF for such operations. Of perhaps greater significance was the fact that plans were on foot to create an Allied strategic air force, but the war ended before such a force could be set up.

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Although observation undoubtedly remained the dominant role for aviation throughout World War I, the air combat of that war and the limited bombardment operations were portents to Mitchell and the rank and file of the flying personnel. Mitchell, through the medium of both the written and spoken word, argued ceaselessly in the postwar period for recognition of the principles which, in his opinion, had been clearly demonstrated during the war: the air force should be an independent arm; there was an independent air mission; air units should be commanded by airmen; airpower to be effective had to be concentrated; and bombardment was the most important element of the air force. Other airmen, although expressing themselves in somewhat milder terms—and tones—recognized that airpower should be centralized under an air commander and that airpower did have an independent mission.

### Establishment of Schools for Air Officers

The introduction of the air weapon in World War I and the faith of airmen in its future led to endless squabbles in the postwar period. The Army recognized that the Air Service would play a useful role in future warfare, but how was the air weapon to be fitted into the over-all structure of national defense? Could aviation best serve the interests of the nation as an entirely separate, independent branch of the military establishment, or should it remain integral to the Army and the Navy? The question of the organization of the air arm became inextricably interwoven with the question of its employment. The two defied easy solution. Although bitterly opposing any proposal to establish an independent air arm, the War Department General Staff (WDGS), which provided the key spokesmen for the ground arm's position, gracefully acceded to the creation of the Air Service as a combatant arm of the Army in the Army Reorganization Act of 1920.\*

In keeping with the long precedent of professional education for the arms and services, the Air Service formulated plans for its own educational system. An early plan called for an Air Service academy, which the Director of Air Service suggested would be the best way to obtain the 300 or 400 officers who would have to be replaced annually in the Army's air arm.<sup>14</sup> Although the suggestion does not seem to have been pushed, it clearly indicates that immediately after the war the Air Service not only

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\* The legality of the Air Service before 1920 rested on a series of executive orders, dating from May 1918.

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considered itself a permanent member of the military establishment but that it considered itself such a specialized arm that there was "no way of training officers, even in part, for the Air Service, except in the Air Service itself."<sup>15</sup>

In addition to an Air Academy the Air Service sensed the need for its own service school. Although junior officers learned the fundamentals of drill, discipline, routine, and subordinate administrative and staff work through experience, and although they could acquire technical knowledge through specialized training, there was still a need for indoctrinating officers in the duties of squadron and higher air unit commanders and in the tactical employment of military aviation. Accordingly, in October 1919 the Director of Air Service sought permission to establish an Army Air Service School of Application at Langley Field, Virginia, to develop and standardize the instruction and training of officers in the tactics and techniques of the Air Service.<sup>16</sup> It was contemplated that any officer of the Air Service might be detailed as a student and that graduation from the school would be prerequisite to assignment of an officer to command of "larger units, or to higher staff work." All students were to have completed pilot training (or balloon and airship pilot training) and to have had at least one year's service with an Air Service organization.

Academically, the proposed course of study was to be divided into three departments: the Department of Military Art (Tactical); the Department of Aeronautical Engineering (Technical); and the Department of Administration (Administrative). Of the three, the Department of Military Art would be the most important and would be allotted 600 of the scheduled 1,200 hours of instruction; the remaining 600 hours would be divided equally between the other two departments. That the curriculum would emphasize Air Service matters was reflected in the fact that of the 600 hours allotted to the Tactical Department, 250 were to be devoted to tactics of air fighting. The other 350 hours would be divided among seven courses: Tactics of Other Arms (Including Navies) and Combined Tactics of All Arms would each have 100 hours; 50 hours were to be devoted to Military History and Strategy and Methods of Liaison, 30 hours each to Conduct of War and Troops in Campaign, and 20 hours each to Weapons and Munitions of War and to Current Military Events. The 300 hours devoted to the Technical Department were to be divided between courses in Aircraft Construction (85 hours), Aircraft Accessories (70 hours), Power and Its Transmission (80 hours), Navigation (50 hours), and Meteorology (15 hours). These courses were not designed to produce specialists in the fields covered but were to qualify squadron and balloon commanders and Air Service officers of higher commands for their duties. The 300 hours in the Administrative Department were to be divided between Administra-



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tion (150 hours), Elements of Law, International Law, and Military Application of Principles of Law (50 hours each).<sup>17</sup>

On 25 February 1920 the War Department authorized the establishment of 11 special service schools for the Air Service, including the Air Service School, Langley Field, Virginia. The field officers course of the Air Service School\* followed in organization and purposes the previous year's recommendations of the Director of the Air Service.<sup>18</sup> The letter of authorization for the course stipulated: "instruction which will fit the graduates thereof for the performance of duties that devolve upon officers of the Air Service as such reducing the instruction in the tactics of other arms and in combined tactics to that necessary to qualify an Air Service officer to function as an Air Service officer."<sup>19</sup>

### Air Service Field Officer's School, Langley Field

Shortly after the authorization of the Air Service schools, the field officers course became the Air Service Field Officers' School. In July Maj. Thomas DeW. Milling was ordered to Langley to organize this school, which was to open that fall.<sup>20</sup> The task was formidable. Not only was equipment lacking, but officers with Air Service experience who would be suitable as instructors were scarce. Finally, 17 officers, in addition to Milling, were made available. Nine of them were designated as instructors: Maj. Frederick L. Martin and Davenport Johnson; Capt. Joseph T. McNarney, Gerald E. Brower, John H. Jouett (for lecture purposes only), Harry C. Drayton, and Clearton H. Reynolds; 1st Lt. Ralph B. Bagby; and 2d Lt. Jacob M. Woodard (school armament officer). Eight were designated as students: Maj. Leo A. Walton, Capt. Thomas J. Hanley, Jr., and Louis R. Knight, and 1st Lts. Thomas N. Blackburn, Chester P. Dorland, Arthur E. Easterbrook, Edwin J. House, and Walter R. Lawson. In making these assignments of staff and students the Chief of Air Service notified the commandant of the school that the services of these officers were to be used in the manner the school commander deemed most appropriate, and some of the officers assigned as students actually became instructors and vice versa. For example, Hanley served as an instructor rather than as a student, and Reynolds became a student instead of an instructor.<sup>†</sup> Apparently neither Dorland nor House attended this session, their places being

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\* Other courses at the Air Service School were 1) "an Airship School," 2) an enlisted men's aerial and photography course, and 3) an enlisted men's balloon-mechanics course.

<sup>†</sup> Some members of the faculty apparently doubled as instructors and students, for Hanley, Johnson, McNarney, and Milling are listed as 1921 graduates of the school.

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taken by Lieutenant Bagby, who originally was assigned as an instructor, and 1st Lieutenant Clayton Bissell. Bagby resigned from the Army on 10 May 1921 and was not included among the graduates of that year.<sup>21</sup> Although not assigned initially Maj. William C. Sherman, who served as Milling's assistant, was an important addition to the faculty.

During the summer a program of instruction was prepared and received War Department approval. Pressed for time and hampered by the limited Air Service precedent and doctrine, instructors were unable to prepare in detail the various courses scheduled; nevertheless, the school opened on 1 November 1920.<sup>22</sup>

Although planned on a nine-months basis, the first session was cut short. In the spring of 1921 both faculty and students were absorbed by the First Provisional Air Brigade which had been organized under Brig. Gen. William Mitchell to carry out bombing experiments against ex-German war vessels. School authorities felt that their work under Mitchell was excellent practice and that the course in Combined Aerial Tactics and Staff Duties was much more practical than the ordinary course would have been, but the exercise caused the suspension of all class work until the following October; consequently, the school opened for its second session without adequate preparation having been made.<sup>23</sup>

Although courses were not completely rounded out during the first two years, the school made a creditable record. Lectures were given in the majority of the subjects scheduled: Observation, Pursuit, Bombardment, and Attack, Troops in Campaign and Tactics, and Staff Duties in the Tactical Department; Navigation and Meteorology, Communications, Photography, Armament; and Engineering in the Technical Department; and History of Air Service, Army Regulations, Hygiene and Sanitation, Field Service Regulations, and Law in the Administrative Department.<sup>24</sup> Equally important, Major Milling and his associates by the end of the second year had established a sound administrative and instructional system that was to provide the basis for the future expansion of the school.

## The Air Corps Tactical School at Langley Field

### Establishment of the Air Service Tactical School

The Field Officers' School had been established to prepare senior officers for higher Air Service command duty, but it soon became apparent that there was a shortage of field grade officers in the Air Service.\* In fact, in 1921 the Chief of Air Service, noting the shortage, had reminded Major Milling that, although the name of the school at Langley implied that only field officers would attend, junior officers had been and would continue to be sent to the school.<sup>1</sup> Moreover, in the spring of 1922 it was evident to a board charged with the work of reorganizing the Army school system that the Air Service Field Officers' School was performing functions that in the other arms and services were handled by two or more schools. Because the only other schools provided for the Air Service were designed to give technical training only, the board felt that every air officer, regardless of rank, should be given an opportunity to attend the school at Langley. Hence, in November 1922 the name of the school was officially changed to the Air Service Tactical School (ASTS) and in 1926, when the Air Service became the Air Corps, to the Air Corps Tactical School (ACTS).<sup>2</sup>

In the summer of 1922 the scope of the school was broadened to cover the tactics and techniques both of the Air Service and of the other branches of the Army and the Navy.<sup>3</sup> The course was still to last 9 months and was to consist of 1,345 hours of instruction, divided among 20 subjects. Several new courses were added to its curriculum: Combat Orders, Staff Duties, Supply, Antiaircraft Defense, and Employment with Associated

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\* See below, p. 18

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Units.<sup>4</sup> That air tactics and techniques were to be emphasized was evidenced by the fact that 160 hours of instruction were to be devoted to each of the following subjects, Observation, Bombardment, and Pursuit (60 hours were allotted to Attack Aviation); 136 hours were to be given to Combined Air Tactics; 76 hours were scheduled for Aeronautical Engineering; and 200 hours were designated for Employment with Associated Units, described as "a study of the employment of units to which squadrons or groups of the Air Service are attached."<sup>5</sup> The time schedule for other subjects included Armament and Gunnery, 60 hours; Supply, 60 hours; Navigation, 40 hours; Meteorology, 40 hours; Organization of the Army, 36 hours; Balloons and Airships, 36 hours; Staff Duties, 30 hours; Photography, 24 hours; Combat Orders, 24 hours; and Antiaircraft Defense, 12 hours.

In the summer of 1923 the program of instruction underwent several alterations. One change was the inclusion of a course in practical flying (126 hrs.). This had not been included in the curriculum initially, for all students were to be trained pilots. It was discovered, however, that officers had become out of touch with flying and its peculiar demands and that students were far from satisfactory as pilots. It was also felt that the actual flying of and familiarity with the various types of service planes were necessary in producing a "polished" Air Service officer. The new course required each student to fly not less than two afternoons per week.<sup>6</sup> The practical flying course became increasingly important as the school developed, for many of the school's problems were solved in the air.

Other alterations involved the reduction of the total number of hours in the program of instruction to 845 and the addition of two new courses. Although all courses were shortened to some degree the reduction was made largely by shortening the Employment of Associated Units from 200 to 48 hours, Combined Arms from 136 to 54, Bombardment from 160 to 56, Pursuit from 160 to 84 and Observation from 160 to 118; Stable Management (25 hours) was eliminated. The two new courses added were the History of the Air Service (9 hours) and Military Map Reading and Sketching (24 hours).

The school organization and methods of instruction were developed during the first few years. In accordance with Army regulations, the commanding officer of the base on which the school was located automatically became commandant, a principle which was followed throughout the school's history, both at Langley and Maxwell Field to which the school moved in the summer of 1931.<sup>7</sup> Maj. William N. Hensley, Jr., who assumed command of Langley Field on April 1920, became the first commandant of the school. For all practical purposes, however, direction of school affairs at first fell to the "Officer in Charge." Major Milling headed the school under this designation until the 1923-1924 session, when his title became

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assistant commandant. During this same period Milling's immediate assistant Maj. William C. Sherman, was designated as "Assistant to the Officer in Charge" but when Milling became assistant commandant, Capt. Earl L. Naiden, who replaced Sherman, became director of instruction. As such, Naiden's tasks consisted of "coordinating the instruction of the school as well as adjusting the courses with those of General Service School at Fort Leavenworth, and in preparation of Air Service officers for attendance at that school."<sup>8</sup> This particular position within the faculty remained in force while the school was at Langley. After the move to Maxwell Field there was a slight curriculum readjustment which was accompanied by the consolidation of the duties of the assistant commandant and director of instruction and the appointment of a director for each department. Another minor administrative change occurred in 1923 when school adjutant became the school secretary. Although both the faculty and curriculum expanded, the basic administrative organization of the school remained the same: the commandant served in dual role of post commander and head of the school; the assistant commandant was responsible for the smooth functioning of the Academic Department of the school; in performing his duties the assistant commandant was assisted by the secretary, the director of instruction, the directors of the departments,\* and the various instructors.

Instruction was both theoretical and practical. Normally, morning periods were devoted to classroom instruction, consisting of lectures, conferences, and illustrative problems. The method of instruction in most subjects followed a definite pattern. During classroom conferences, instructors described the principles of the subject and their applications, study assignments from the text having been previously given. After several conferences an illustrative problem was worked in class. In the Bombardment course, for example, after lectures and conferences on characteristics of bombardment aircraft and the employment of bombardment aviation, each student would be designated a group commander and would be ordered to attack a certain objective with his group. After taking into consideration the theoretical opposition imposed by enemy anti-aircraft artillery and pursuit aviation, the nature of the objective, support by friendly aircraft (pursuit and perhaps attack), and such other factors as reconnaissance reports and the results desired, each student made his basic decisions for the attack and produced the over-all plan. This plan included the time and general method of attack, bombs and fuzes to be used, type of formation and routes to be flown, direction and altitude of

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\* Beginning with the 1934-1935 session of school.

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attack, method of bombing, and all other details necessary for the proper execution of the mission. Almost all courses culminated in one or more examinations, called "map problems," in which students were given a situation and each worked out his solution alone. Subjects that did not lend themselves to map problems ended in regular examinations.<sup>9</sup>

In general, the afternoons were reserved for flying and the practical application, insofar as possible, of classroom theories of air tactics and techniques.

Although the parsimony of Congress retarded the development of the Air Service in general in the period immediately after World War I, in some respects the physical plant of the school at Langley rather quickly reached a satisfactory state. A library, which had been established with the founding of the school, grew steadily. For example, during the 1922-1923 school year, 1,983 new books and pamphlets were added; by the same year the subscription list to periodicals had been increased to 31, including foreign and domestic magazines covering both technical and general Air Service information.<sup>10</sup> Major Naiden, assistant commandant, reporting in 1926 on the progress of the library, recommended "that the present generous policy towards the library be continued." He noted that more use was being made of the library each year, and he considered that fact alone as good evidence of both its value and growth.<sup>11</sup> From the first year, maps and certain other classroom equipment had been made available to the school.<sup>12</sup> By 1926 Major Naiden could report that the miscellaneous equipment of the school was in a satisfactory condition and sufficient to meet most needs.<sup>13</sup>

Nevertheless, throughout its stay at Langley Field the school labored under various handicaps. Quarters were inadequate for the number of officers assigned; a building specifically designed for the school was needed.\* Nor were there ever enough airplanes available to demonstrate as thoroughly as school authorities desired the principles in techniques being taught. More serious, however, than the physical shortcomings at Langley, were the lack of an adequate staff and the very limited amount of Air Service precedent and doctrine. Adequate funds and labor could provide the physical foundation, but only time, experience, and careful study by dedicated men could add the intellectual superstructure.<sup>14</sup>

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\* Before 1930, Langley Field personnel and equipment were housed principally in temporary buildings. Permanent structures consisted of officer's quarters, the administration buildings, boat house, balloon hangar, two brick airplane hangars (constructed in 1918), and a few miscellaneous small buildings. Many commissioned officers of the higher grades were on commutation and lived in the adjoining community. (Hist. Langley Fld., Inception to 1 Mar. 1935.)

## Air Corps Board at Langley

The problem of maintaining an adequate staff was aggravated by the fact that faculty members were burdened with additional post duties and were frequently called upon to serve on various boards and committees. One particular board which diverted the attention of a portion of the faculty should be mentioned. In 1922 there had been established at Langley Field an Air Service Board which was to consider such subjects as might be referred to it by the Chief of Air Service and "to originate and submit... recommendations looking to the improvement of the Air Service."<sup>15</sup> Its membership was to consist of the commandant and assistant commandant of the Air Service Tactical School and from two to five other officers, at least one of whom would be relieved of all duties other than those pertaining to the board. Despite the provision for personnel, the board continually suffered from the lack of an adequate staff. In 1924 the commandant of the school, although recognizing that the board, when properly organized and operating, could be of great assistance to both the Air Service at large and to the school in particular, reported that since no officer had been assigned as a working member, the board had not as yet functioned.<sup>16</sup>

Although the board had "working members" in 1925,\* it still was not handling the service problems for which it had been established. To the contrary, Maj. Oscar Westover, commandant of the school, reported that he, Major Milling, assistant commandant, and Major Naiden, director of instruction, had functioned throughout the year as members of the Air Service Board, personally reviewing, correcting, and criticizing correspondence courses prepared by the working members. Indeed, despite its broad directive and the original intent, the Air Service Board (redesignated Air Corps Board in 1926) throughout its existence at Langley Field functioned only as an auxiliary of the Tactical School, handling correspondence courses.<sup>17</sup>

## Staff and Faculty, 1920-1931

In addition to the extracurricular duties which absorbed much of the time of the officers, the problem of obtaining and maintaining an adequate staff of competent instructors was further complicated by the fact that air officers with combat experience were limited in number, and few could be

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\* Available records do not give the names of these "working members."

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made available to serve as instructors.\* A further handicap was the fact that during the first three years there was a rapid turnover of instructor personnel. For example, of the original staff, only three (Milling, Sherman, and McNarney) were on hand during the second year. To make matters worse, no policy had been set for filling vacancies. Moreover, although as early as 1923 a director of instruction was appointed for the primary purpose of coordinating the various courses, the incumbent of that office was forced to serve in the dual role of instructor and director.

For several reasons the Tactical School especially needed competent instructors. In the place, it was the most advanced Air Corps school. Thus, courses in all aspects of the air arm—technical, tactical, and administrative—were included in the school curriculum. Secondly, ACTS served within the Army's educational system as an Air Corps preparatory school for the Command General Staff School. Finally, school authorities, mindful of the prejudice against the Air Corps in numerous other branches of the Army and keenly aware of the lack of appreciation of the potentialities of airpower on the part of the rank and file of ground officers, were determined that before Air Corps officers attended the Command and General Staff School, they should be well trained in and thoroughly familiar with all aspects of their own arm.

In June 1924 Tactical School authorities recommended to the Chief of Air Service that specific steps be taken to eliminate many of the instructor personnel problems. Instructors should be assigned for at least two years, and longer if possible. There should be an overlap of at least four months between the arrival of a newly appointed instructor and the departure of his predecessor. Perhaps of more importance was the recommendation that there be established a policy of drawing future instructors from graduates of ASTS and the General Service Schools; at least one graduate of the latter should be ordered to the Tactical School every year. It was believed that such a policy would eventually result in uniform instruction and close coordination with the other branches.<sup>18</sup>

In August the Office of the Chief of Air Service approved the school recommendations with only minor reservations. Instructors would be drawn from graduates of the ASTS or the General Service Schools; officers assigned to the school would, in the future, be ordered to report "some-time" prior to the departure of their predecessors; and officers ordered to duty at the school would be allowed to remain for "extended tours of duty."<sup>19</sup> This policy tended to stabilize the Tactical School, giving it early direction and continuity.

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\* For a complete list of the staff and faculty see Appendix 2.



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The shortage of instructors, however, continued to plague the school. In 1925 Major Naiden, director of instruction, noted that many desirable undertakings had to be foregone because of this situation, which he considered the school's greatest weakness. Not only did the staff remain small but the handful of instructors continued to be called on to perform duties outside the school. School officials granted that much of this extracurricular work was beneficial because it kept instructors abreast of the latest technical developments and air force thinking, but as long as there was only one instructor available for each course, such added duties not only hampered the preparation of classroom presentations, but if such duty occurred during the school year, it caused a shortening of the course given by the instructor involved. Moreover, as interest in the military use of aviation grew and as literature representing every shade of civilian and military opinion on the subject increased, it became increasingly difficult for the small staff at the school to keep up with all, or even an acceptable part, of what was being written and said on the subject in which they as individuals and the school in general were vitally interested. As late as 1930, Maj. Walter H. Frank, assistant commandant, in requesting the assignment of additional instructors, noted that although the library had been considerably enlarged, making available a large amount of aviation data, an "untold amount" of research remained to be done before the school would derive any benefit from it.<sup>20</sup>

It was fortunate for the school and for the air arm that the staff and faculty, though small in number, were composed for the most part of farsighted, capable men who were convinced that the advent of the military airplane had revolutionized the art of war. Throughout the nineteen-twenties officers in responsible posts at the school were for the most part veterans of World War I, and their combat experience influenced them in teaching the tactics and techniques of the various classes of aviation. With only the experience of the war to serve as a guide with too little time to give to new thoughts and ideas in the preparation of the courses, they used, during the early years of the school, the air operations of World War I as illustrations of the employment of airpower. Their dependence upon World War I was, however, an expedient, intended to serve only until time could be found to analyze and evaluate the air experience of that war and from the premises thus established to theorize on the probable impact of airpower on the nature of future war. For instructors at the Tactical School were convinced (as were airmen in general), that airpower would be a vitally important element in future conflicts, and their greatest achievement at the school was the sifting and selection—and sometimes conceiving—of ideas on the crucial issue of the employment of airpower in war. The list of instructors at the Tactical

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School during its years at Langley included the following names of officers who were in later years substantial contributors to air thought in the period between wars and as air leaders during World War II:

Brig. Gen.\* Thomas DeW. Milling, Assistant Commandant, 1920-1925  
Gen. Joseph T. McNarney, Instructor, 1920-1925  
Maj. Gen. Davenport Johnson, Instructor, 1920-1921; 1926-1928  
Brig. Gen. Thomas J. Hanley, Jr., Instructor, 1920-1921  
Brig. Gen. Earl L. Naiden, Director of Instruction, 1923-1925; Assistant Commandant, 1925-1926  
Maj. Gen. Oscar Westover, Commandant, 1924-1926  
Lt. Gen. Lewis H. Brereton, Instructor, 1924-1925  
Maj. Gen. Edwin J. House, Secretary, 1925-1929  
Maj. Gen. Walter H. Frank, Assistant Commandant, 1926-1930  
Maj. Gen. Clayton Bissell, Instructor, 1926-1931  
Gen. George C. Kenney, Instructor, 1927-1931  
Brig. Gen. Robert C. Candee, Instructor, 1928-1932  
Maj. Gen. Robert Olds, Instructor, 1928-1931  
Brig. Gen. Kenneth N. Walker, Instructor, 1929-1933  
Maj. Gen. Charles C. Chauncey, Instructor, 1929-1930  
Maj. Gen. Follett Bradley, Director of Instruction, 1929-1931

### **Students, 1920-1931**

During the early years of the school the student body, like the faculty, was small. Only seven students were graduated the first year.<sup>†</sup> Classes for the next several years were only slightly larger: 12 were graduated in the 1922 class, 17 in 1923, 14 in 1924, 13 in 1925, and 16 in 1926. The small number in each class was due in part to the fact that the Air Service itself was small and in part to the lack of an adequate staff to care for more students. In 1924 Major Milling recommended that since it was difficult to obtain an adequate number of competent instructors for the school, the classes should be held to a maximum of 25 students.<sup>21</sup>

Following the limited expansion of the air arm after the creation of the Air Corps in 1926, classes at the school became somewhat larger

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\* Rank given is the highest rank achieved.

<sup>†</sup> Although, only seven students completed the course, four of the instructors, Milling, Hanley, Johnson, and McNarney, were awarded certificates. Hence, the list of graduates for the first year includes 11 names. See Appendix 3 for graduates by year.

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although the faculty was not appreciably increased. There were 20 graduates in 1927, 24 in 1928, 24 in 1929, 31 in 1930, and 39 in 1931. In all, 217 officers completed the course while the school was at Langley.

Although the school at first was called "Field Officers' School," field grade officers never predominated. In the first four graduating classes ranks ranged from one lieutenant colonel in 1923-1924 to a liberal sprinkling of first lieutenants. Of the first 50 graduates, less than one-fourth were of field grade: 1 lieutenant colonel and 10 majors, compared with 27 captains and 12 first lieutenants. In 1924 the Office of the Chief of Air Service approved a recommendation from school authorities that student officers be selected from field officer grade pilots of average age, rank, and experience, but because of the relatively few field grade officers in the air arm, company grade officers continued to predominate. Nevertheless, thereafter greater care was taken in selecting students, and in 1925 Major Naiden reported:

The students of last year's class were for all practical purposes of uniform rank, age, and experience. They were easy to handle and worked well together. The undesirable element of overly keen competition was practically eliminated, notwithstanding the fact that the students as a whole applied themselves diligently. All of these things resulted in a class of very high morale, something which should be striven for at all costs. It is therefore recommended that in the future every effort be made to send classes here of a similar nature to the past one.<sup>22</sup>

The standard of admission established for air arm officers applied equally to officers of other branches who attended ASTS. Although the first three classes were composed solely of Air Service officers, an infantry officer attended the 1923-1924 class. Only Air Service officers were present for the 1924-1925 session, but in his annual report for that year Maj. Oscar Westover, commandant, indorsed a suggestion that officers from other branches be detailed to the school the following year. He cautioned, however, that such officers should be of approximately the same age, rank, and experience of Air Service students and that they should be placed on flying status while at the school, because of the nature of the instruction. This recommendation was eventually approved.<sup>23</sup>

There were two particular reasons for desiring the presence of officers of other branches. As early as 1921 the Chief of Air Service had expressed the desire to invite representatives of other arms to attend the school as a practical means of disseminating Air Service doctrine throughout the Army and also as a means of bringing about a better understanding and closer spirit of cooperation between the Air Service and other arms.<sup>24</sup> School authorities agreed, and it was that thought which lay behind Major

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Westover's recommendation in 1925. In 1927 Major Frank, assistant commandant, pointed out that attendance of officers of other arms might also serve the useful function of destroying prejudices that existed against the Air Corps.<sup>25</sup>

One officer each from the Cavalry, Field Artillery, Coast Artillery, Infantry, and Signal Corps and three Marine Corps officers attended the 1926-1927 session. Thereafter, the other arms and services were represented in each class.

### **Curriculum Changes**

For the first few years of the school so little material was available, indeed so little was known on the subject of the military application of airpower, that a considerable amount of time was spent on ground tactics, techniques, and strategy. In fact, the courses in the various phases and types of aviation were concerned primarily with the contribution that aviation could make to the ground campaign. The first textbook for air subjects was written in 1921 by Maj. William C. Sherman and was issued in mimeographed form by the office of the Chief of Air Service as Training Regulations 440-15, *Air Tactics*. This text consisted of six sections, Characteristics of Aircraft, Fundamental Doctrine of the Air Service, Observation, Attack, Bombardment, and Pursuit Aviation. Although at many points revealing the author's far-ranging concepts of the proper employment of airpower, the text's main emphasis was on the human element in war and the morale and psychological effect of airpower on surface troops.<sup>26</sup>

By the mid-nineteen-twenties considerable progress had been made in the development of courses in air tactics. The progress was due in part to the appointment in 1923 of a director of instruction. Capt. Earl L. Naiden, who was assigned to this position immediately following his graduation from the Command and General Staff School in 1923, was able to effect a greater coordination of the courses than had theretofore been possible. Naiden also devoted much time to consideration of the mission of the Tactical School and the means by which it could best meet its responsibilities. He soon decided that the courses in Aeronautical Engineering and Administration which absorbed time and energy of both the faculty and students, were hindering the development of courses dealing with the tactics and techniques of the various classes of aviation.<sup>27</sup> At the close of the 1923-1924 session, he recommended that the technical subjects included in the curriculum be considerably shortened and the time thus gained be applied to the tactical courses. He maintained that the Tactical School should consider students proficient in the technical aspects of

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aviation when they arrived and that in that field they should be given only brief refresher courses, sufficient to cover only the general principles and to take care of any relation that existed between the technical and tactical aspects of aviation. In May 1925 the school received War Department approval of changes in the curriculum which were designed to place greater emphasis on the tactical subjects, and Aeronautical Engineering was dropped from the curriculum.<sup>28</sup>

Increased emphasis on air matters was made possible, in part, by the steady accumulation of information on the military use of airpower. In the summer of 1923 instructors for the first time were permitted to devote themselves to the preparation of their courses for the following fall, instead of engaging in other duties such as attending exercises. Thus, from 1923 on, faculty members during the summer lull reworked their lectures in the light of new ideas and technical developments and prepared texts for their respective courses. By 1924 printed texts, far more explicit on tactics, techniques, and employment than those first used, were available for the Pursuit, Bombardment, Attack, Observation, and Combined Arms sections.<sup>29</sup>

As the courses in air matters became more fully developed, not only was the curriculum shifted to permit more time to be devoted to them, but a constant effort was made to present every subject, including ground subjects, from "an air point of view." For example, from 1920 through 1927 lectures on the employment of airpower in World War I merely recited the operation record. For the 1928 class, however, these lectures were modified so as to stress the use to which an air force *might* have been put in the various World War I. The next year the textbooks for Bombardment, Attack, Pursuit, and Observation were so as to include only the method of operating the various types of aviation. But superimposed on these courses was a new one, The Air Force, which, coming at the end of the year, consolidated and coordinated all that had come before in Air Corps subjects. The text for this new course included the tactics and strategy incident to the combined operations of the various classes of aviation.<sup>30</sup> With the growth of air arm courses, the time devoted to ground subjects was substantially reduced; but sufficient attention continued to be given to courses in the other arms and services to enable the air officers to become familiar with the tactics, techniques, and doctrines of each.

### Demonstrations and Exercises

In addition to receiving the regular academic instruction, students participated in exercises and maneuvers, attended demonstrations, and made inspection trips. Such activities began with the school's participation

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in the bombing experiment against the ex-German war vessels in the summer of 1921. By 1923 the practice had been established of making inspection trips to the Engineering Division installations at Wright and McCook Fields to enable students to familiarize themselves with the latest technical developments. These inspection trips were repeated yearly, with few exceptions, through the school year 1931-1932.

A close association between the Tactical School and the Infantry developed very early. Each year troops at nearby Fort Eustis gave special demonstrations of Infantry units with supporting weapons in an attack. Of special interest were the exercises conducted in 1930-1931, in which the school cooperated with Fort Eustis troops in attempts to determine the vulnerability of ground troops to air attack. In 1930, the year before the school moved to Maxwell Field, close relations between the Infantry School at Fort Benning, Georgia, and ACTS were established when the Air Corps students visited Benning to witness a demonstration of a war-strength infantry regiment in an attack.<sup>31</sup>

Another form of training was participation in the annual Army War College maneuver, and this event soon pointed up some of the sharp differences between the air and ground views on the proper employment of the air weapon. At first school authorities were enthusiastic over the prospect of using the maneuvers to disseminate school concepts throughout the service, and in 1926 (the third year in which the school had participated) the assistant commandant reported that War College authorities had permitted Air Service officers on the various staffs to operate their arm in conformity with the principles taught at the Tactical School, a practice that in the past had not been followed. Major Naiden believed that if such a procedure was continued for a few years the principles of air force employment being taught at the school would be well understood by a majority of the graduates from the War College.<sup>32</sup> Two years later reports were not so optimistic. It was the opinion of the school in 1928 that in drawing up the basis for the maneuver, planners at the War College did not give proper consideration to the influence that the Air Corps would have in the problem. Consequently, during the maneuver it was necessary to restrict Air Corps operations in order to allow the ground situation to develop. Conditions that prevailed tended to create erroneous impressions in the minds of ground officers both as to what the Air Corps could do and what might be expected of it. In order to avoid compounding such misconceptions, school officials urged that in planning future maneuvers proper consideration be given to the air arm as a powerful combat weapon.<sup>33</sup> Despite the school's recommendations, the War College maneuver continued to be unsatisfactory from the Air Corps point of view, and criticisms were repeated for several years. In 1930, for example, the Tactical School reported that as in the past the War College had not given

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the Air Corps proper consideration in the planning phase and that when air operations were introduced they were so artificial as to lead to a misconception of the employment of aviation.<sup>34</sup>

The efforts of the Tactical School to participate in the planning of the War College maneuver in order that realism in air operations might be added finally bore fruit when, as a result of conferences between the War College and the Tactical School, the setup for the exercise for 1931 was altered to inject more aviation into the situation. Tactical School students were assigned as commanders and staff of the air forces involved. Nevertheless, from the airman's point of view, results were still not satisfactory. For although the exercise showed an improvement in staff work, in actual operations virtually the entire air effort was applied in the combat zone at the expense of suitable rear area targets such as concentrations of supplies and troops. Therefore, in the opinion of the Tactical School, the true effect of an air force was not demonstrated. So concerned were school officials over the repeated misuse of airpower that in 1931 Maj. John F. Curry, assistant commandant, suggested that unless future maneuvers permitted the air element to pay more attention to rear areas, the value of the maneuver either to the students of the War College or Tactical School was not commensurate with the effort and expense involved in the Air Corps participation.<sup>35</sup> This was particularly true since the Tactical School was to move to Maxwell Field that summer, and the expense of transporting personnel and equipment from Alabama to Fort DuPont, Delaware, where the War College maneuver was usually held, would be considerably more than from Langley.

### **Plans for the Move of the School to Maxwell Field**

Langley Field figured prominently as a base for forming new units in the five-year expansion program which followed the creation of the Air Corps in 1926. Facilities there, however, were inadequate to house both the Tactical School and the prospective new units envisaged in the field's new mission; moreover the increased activity at the field would be detrimental to the smooth functioning of the school. Consequently, from the summer of 1927 until 1928 the Office of the Chief of Air Corps (OCAC) contemplated moving the school to Miller Field, Staten Island, New York, although school authorities raised strong objections to this new location as a backward step and as "totally unsatisfactory as a site for the school."<sup>36</sup> Lt. Col. C. C. Culver, commandant of the school, recommended as more suitable sites the vicinities of Richmond, Virginia; Washington (in connection with an extension of, or new site for, Bolling Field); "the present

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establishment at Montgomery, Alabama";\* the Air Corps Training Center near San Antonio, Texas; Fort Riley, Kansas; or the lighter-than-air section of Langley Field itself. Nevertheless, well into 1928 OCAC persisted in its plan to move the school to Miller Field. But before the end of that year, Maxwell Field at Montgomery, Alabama, replaced Miller Field as the future location of the school.<sup>37</sup>

In January 1929 OCAC appointed a board of officers to plan the expansion of Maxwell Field to a size suitable for the school. Basing its considerations on estimated future requirements, the board recommended that the field be expanded so as to provide for 1) a Tactical School of 75 students; 2) a squadron officers course of 50 first lieutenants and captains; and 3) a composite group, consisting either of one squadron each of attack, pursuit, bombardment, and observation aviation. To comply with these needs, the board advocated that the government purchase approximately 1,000 acres of land at a cost of some \$320,000 and accept 75 acres of land which was being offered by the city of Montgomery. However, Congress, acting on the last day of its 1930 session, authorized only the sum of \$200,000 for the purchase of 750 acres.<sup>38</sup>

Between 1918 and 1927, there had been virtually no new construction at Maxwell. In May 1928, 13 sets of noncommissioned officers' quarters and barracks to house 163 men were completed, construction having started the previous fall as a part of the Air Corps expansion. But these Corps buildings, plus those dating from World War I, were far from adequate to meet the needs of the school.<sup>39</sup> Therefore, planning for additional construction was begun shortly after it was decided to transfer the ACTS to Maxwell. Congress on 4 March 1929 appropriated \$100,000 for a building for ACTS.<sup>40</sup>

By July Congress had authorized \$689,000 for new construction. In addition to the school building, hangars, warehouses, a headquarters and operations building were to be built and the landing field was to be improved. Funds had also been requested for the construction of quarters for officers and enlisted men, and for other buildings.<sup>41</sup>

Of all the new facilities the Air Corps Tactical School building itself was given the most careful consideration, and its construction did not commence until the fall of 1930. Because of the care taken in laying out the field, particularly with a view toward further expansion, construction of the headquarters, operations and parachute building, nine noncommissioned officers barracks, four steel hangars, and a few smaller buildings did

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\* Maxwell Field, at this time, was a depot and a base for observation units.



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not begin until that same fall.<sup>42</sup> Delay in acquiring title to the additional 750 acres until August 1932 postponed construction of the officers' quarters, which were to be built on the new tract.<sup>43</sup>

It had been planned to move the school to Maxwell in the summer of 1929<sup>44</sup> but delays in preparing the field to receive the school caused the move to be postponed first until 1930 and finally until the summer of 1931. By January 1931 it was assumed that by summer Maxwell would be ready for occupancy, less officer's quarters, and preparations for the move began. On 15 April 1931 The Adjutant General issued the necessary orders transferring the school, and on the same day Maxwell Field was designated, effective 1 July, an exempted station as a special service school. Between 25 June and 15 July 1931 the school moved to its new location.<sup>45</sup>

## The Air Corps Tactical School at Maxwell Field

### Expansion of the School

The school prospered after its move to Maxwell. The construction program begun in 1930 was constantly added to in the next few years, the school profiting no little from the appropriation of WPA and PWA funds. Before the end of March 1934, 63 sets of officers' quarters had been built, and by the end of that year 24 more had been completed, as well as noncommissioned officers' quarters, a quartermaster warehouse, garages, a water tank, and other buildings.

By the end of 1938 Maxwell Field had become a large, fully developed air installation. At that time for school and field administration and maintenance purposes, it had a large school building for the Tactical School, an operations and headquarters building, four quartermaster warehouses, a quartermaster office and a commissary, a quartermaster garage, and a quartermaster maintenance and utilities building. For aircraft maintenance purposes, it had six hangars, an engineering building, an airplane assembly building, and an air corps supply building. The field was being serviced by its own electrical and gasoline distribution systems, telephone and water systems, fire department, post exchange, a filling station, and a 30-bed hospital. Quarters consisted of 99 sets of officers' quarters, 77 sets of NCO quarters, 3 enlisted men's barracks capable of housing 489 men, and bachelor officers' quarters for 18 officers. Extensive recreational facilities had been provided: 2 swimming pools, 3 volleyball courts, a bowling alley, a cinder track, a baseball diamond, a football field, 6 tennis courts, a skeet range, a squash court, an 18-hole golf course, a theater of 300 seats, an officers' club, and an NCO club. There were also a guard house, 11 buildings for the federal prison located on the field, stables, and

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many subsidiary buildings such as storage vaults, and bomb cellars. Most of the sidewalks and the streets were paved.<sup>1</sup>

In addition to improvements in the physical plant, existing divisions within the school were expanded and new ones created. The library continued to show a remarkable growth. The book department continued to make books available to the students and to provide a medium for the dissemination of Air Corps texts to the services. By 1934 this department also administered the book fund for the library, providing the prompt and direct purchase of books chosen by a book committee made up of faculty members. An extension course section was created, relieving the school faculty of most of the detailed work connected with this duty. Since its inception the school had been responsible for preparing extension courses for the Air Service and Air Corps, and the work involved in preparing texts and other aspects of the courses had been a strain on school personnel.\* Other additions to the school included a reproduction department,<sup>2</sup> and a bombing and gunnery range at Valparaiso, Florida.<sup>3</sup>

### **The Air Corps Board at Maxwell Field**

The Air Corps Board did not move to Maxwell concurrently with the Tactical School and, for all practical purposes, temporarily ceased functioning since its membership was composed largely of school faculty members who were now at Maxwell.<sup>†</sup> There was agitation in the Office of the Chief of Air Corps, however, for an early re-establishment of the board, and in 1933 both the Training and Operations (T&O) and Plans Divisions made recommendations to the Chief of Air Corps to that effect. Plans Division in particular recommended that the board be set up alongside the Tactical School at Maxwell.<sup>4</sup>

On the basis of these recommendations, on 17 August 1933 the War Department published a revised AR 95-20 which stated that the board would be permanently located at Maxwell Field. The purpose of the board remained that of considering such subjects as might be referred to it by the Chief of Air Corps and of submitting to OCAC recommendations for improvements in the Air Corps. Its membership was to consist of the commandant and assistant commandant of the school, from two to five

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\* Actually this work had been done by the Air Service Board, redesignated Air Corps Board in 1926, but the board itself at this time was composed of faculty members.

<sup>†</sup> AR 95-20, 1 August 1922, which established the Air Service Board, stipulated that it would be permanently stationed at Langley Field.

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other officers from the school (to be named by the commandant), and such additional officers as the Chief of Air Corps might designate. When no action was taken to constitute the board, in October Maj. Hume Peabody, assistant commandant, suggested to the commandant, Lt. Col. John F. Curry, that the board be put on an active operating basis with the school providing the personnel.<sup>5</sup> Apparently on the basis of this recommendation, in January 1934 Curry, Peabody, and six instructors held "the initial meeting of the Air Corps Board" at Maxwell.\* But since OCAC had neither assigned full-time members to the board nor issued a directive for its functioning, the board still was not an effective Air Corps agency.

In July the Tactical School's efforts to organize an active Air Corps Board received considerable impetus from recommendations made by the Baker Board.<sup>†</sup> The report of the Baker group stated that, although an Air Corps Board had been authorized, it had not been properly organized and had not properly functioned. Noting the absence of uniform Air Corps doctrine and a consequent unsatisfactory state of unit training within the Air Corps, the Baker Board recommended an early "creation" of the Air Corps Board which, when established, should give prompt attention to the formulation of uniform tactical doctrines for all types of Air Corps units. It also recommended the creation at the Tactical School of a model Air Corps unit which could assist in training student officers and could cooperate with the Air Corps Board in the development of tactical doctrines.<sup>6</sup>

On the basis of the Baker Board recommendation, in August 1934 the War Department directed the Chief of Air Corps to complete the reorganization of the Air Corps Board as rapidly as possible. Its first order of business would be the formulation of uniform tactical doctrines for all types of Air Corps units.<sup>7</sup> In September, The Adjutant General notified the Chief of Air Corps that AR 95-20 had again been modified and the reorganization of the Air Corps Board would follow its provisions.<sup>8</sup> The revised AR 95-20 named the commandant and assistant commandant of the Tactical School ex-officio members of the board; five to eight officers were to be designated by the Chief of Air Corps as permanent members.<sup>9</sup>

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\*The six instructors were Maj. William Ord Ryan and Donald Wilson and Capt. Arthur K. Ladd, Charles McK. Robinson, Claire L. Chennault, and Harold L. George. See ltr., to the Chief of the Air Corps signed by all eight officers, in 2-2565-48.

<sup>†</sup> For the purpose of reviewing all phases of Air Corps activities, on 17 April 1934, President Franklin D. Roosevelt appointed the War Department Special Committee on Army Air Corps, commonly referred to as the Baker Board in recognition of its chairman, former Secretary of War Newton D. Baker.

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Steps were immediately taken to set up the board. In December 1934 Maj. William O. Ryan and 1st Lt. Gordon P. Saville, both of whom were at Maxwell, the former serving as executive officer of the field and the latter as an instructor at the school, were relieved of their previous assignments and were assigned as director and secretary respectively of the Air Corps Board. They, together with the two ex-officio members, the commandant and assistant commandant of ACTS, comprised the board until June 1935 when Lt. Col. Jacob H. Rudolph and Capt. Samuel C. Skemp were assigned as additional working members.<sup>10</sup> Thus, although still short one of the five members AR 95-20 specified as a minimum by the summer of 1935 the Air Corps Board was a small working entity.

After its reorganization, the Air Corps Board continued to draw on ACTS for assistance. Indeed, the board had been located at Maxwell in order to effect a better coordination between the two. For example, in clearing up the mistaken idea on the part of the War Department that the Air Corps Board would not only formulate a uniform tactical doctrine but would also prepare school textbooks in which this doctrine would be incorporated, OCAC explained that although it was the function of the board to formulate uniform tactical doctrine, it was the function of the Tactical School to revise texts. OCAC pointed out that there would be very close coordination between the two, and any revision of texts made by the school would reflect the uniform tactical doctrine formulated by the board.<sup>11</sup> Moreover, Plans Division, which had been instrumental in bringing about the reorganization of the Air Corps Board, noted that the board had both the experienced personnel and facilities of the Tactical School available to assist it in its work.<sup>12</sup>

Although the Tactical School cooperated fully with the board, the school faculty and staff were relieved of the detailed work. To be sure, the commander of Maxwell Field, who was also commandant of the school, acquired a third hat, for in his capacity as ex-officio member of the board he served as its president. However, his duties in this capacity were chiefly to assure coordination between the school and the board, for neither the commandant nor the assistant commandant were burdened with the board's day-to-day activities. In the internal organization of the board the senior regular member was named Director, Air Corps Board. An assistant director performed such special duties as were required of him by the director and served as director in the absence of the senior regular member. The junior regular member was secretary or recorder. It was anticipated that the regular members would be assigned functional duties with the board, but as matters turned out, it was found more satisfactory for the regular members to pool their abilities, especially on major projects. Despite the appointment of permanent members to the board, the

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Tactical School faculty continued to be called on for advice and for review of projects under consideration. In fact, for several years the concurrence or nonconcurrence of ACTS was required in each letter of transmittal forwarding the final report of an Air Corps Board study to the Chief of Air Corps.<sup>13</sup> Moreover, in correspondence with Maxwell Field dealing with matters of doctrine, OCAC frequently did not differentiate between the school and the board. The two worked in harmony; occasions when they differed were rare.

Initially, matters brought to the attention of the board by an individual, group of individuals, organization or agency, or by a board member became projects by a majority vote of the board. However, the practice of submitting all such ideas, proposals, or recommendations to the Chief of Air Corps for consideration was early adopted, and they became projects only upon his direction. Projects for the most part involved the preparation or review of tactical doctrine and tables of organization, and to a minor extent consisted of tests of various weapons and equipment. By mid-summer of 1935, the board had undertaken eight projects, including a study on tactical doctrine which had been called for by the Chief of Air Corps. By the close of that year, of 27 projects started 12 had been completed. In all, the Air Corps Board undertook 77 projects between 1935 and May 1942, at which time the board was inactivated. The projects may be classified roughly as 25 dealing with tactics, 17 with publications, 16 with armament and chemical matters, 13 with equipment, 5 with aircraft, and 1 with communications. Of these, publication activities included the preparation or review of manuals, training texts, tables of organization, a study of the Air Corps in relation to the Monroe Doctrine, and plans for M-day and for Air Corps expansion.<sup>14</sup>

A steadily increasing workload, a personnel shortage, and the absence of an adequate testing agency placed a heavy burden on the regular members of the Air Corps Board. Indeed, the board reached its full complement of eight officers only after the suspension of ACTS classes in June 1940 when several instructors became available for this duty.

Although the school staff and faculty were considerably reduced following the suspension of classes, collaboration between the school and the board continued until the summer of 1941\* when the board was moved to the Air Corps Proving Ground at Eglin Field. This move brought to an

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\* Such collaboration was one of the assigned missions of the school for the period of its suspension.

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end the close association during which the board had proved to be a valuable adjunct to the school, for it was largely through the medium of the board that much of what was being taught at the school was disseminated through the service.

### **23d Composite Group**

The Practical Flying course, although continued after the school moved to Maxwell, underwent a change. The practice of requiring students to fly many of the types of missions and sometimes, the actual missions which had been presented in class was discontinued as impracticable and unsafe; moreover, the students as a group were comparable to a number of squadron and group commanders without the leavening of junior officers who would be in a wartime combat unit. Throughout the thirties attempts were made to have tactical units demonstrate tactics and techniques, but the difficulties encountered in having the units at the school at the right time and in finding units which were fully indoctrinated with the latest teachings of the school led in 1932 to a recommendation by school authorities for the creation of a composite group, to be composed of one squadron each of pursuit, bombardment, attack, and observation, each equipped with the latest types of service aircraft. OCAC, however, disapproved the recommendation on the basis that neither personnel nor equipment was available for the purpose.

The situation was not substantially improved after the creation in 1935 of the GHQ Air Force which had the responsibility, among others, of furnishing combat units for demonstration purposes. Close liaison was maintained between the Tactical School and GHQ Air Force headquarters. Nevertheless, there could be no assurance that demonstrations by GHQ Air Force units would represent the latest school concepts because of other demands upon training time and because of the various views or interpretations of unit commanders. Despite perennial recommendations of the school, it was not until 20 February 1939 that General Arnold called for a study to determine the advisability of organizing three demonstration squadrons—one each of attack, pursuit, and bombardment—at Maxwell. Even then, the main purpose was to take the demonstration exhibition load off the GHQ Air Force and provide the Air Corps with units which could be sent to various service schools, maneuvers, tactical exercises, and the National Air Races.<sup>15</sup>

On the basis of subsequent studies, the War Department ordered the creation of the 23d Composite Group, with date of activation set at 1 August 1939. The group consisted of the 1st Pursuit Squadron, the 54th

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Bombardment Squadron (Medium), and the 24th Attack-Bombardment Squadron. It had the three fold mission of:

- Providing a tactical service test of airplanes and auxiliary equipment, such as machine guns, cannon, ammunition, bombsights, chemical apparatus, radio and oxygen equipment, and flying clothing.
- Developing and testing new aerial techniques and tactics.
- Demonstrating these techniques and tactics at the various Army Service Schools and General Headquarters, and Air Corps stations.

More particularly, the group was organized as an experimental unit to operate in connection with tactical projects being worked on at the ACTS and by the Air Corps Board.<sup>16</sup> However, the Tactical School suspended classes in June 1940; consequently, the 23d Composite Group was available for school purposes for only a very brief period.

### Demonstrations and Exercises

Many aspects of training begun at Langley were continued at Maxwell. Inspection trips to the Engineering Division installations at Wright Field were provided for but were put on a voluntary basis. Relations with the Infantry became steadily closer and efforts were made to familiarize air officers more thoroughly with ground force officers' problems. More detailed instruction in ground force matters and coordination in the development of air ground tactics were made more practical by the proximity of the Infantry School at Fort Benning, Georgia. There were yearly visits between the schools. However, the student body of the Tactical School did not always visit the Infantry School merely to observe ground force demonstrations; on occasion there were combined exercises. In 1934, for example, during the Infantry course at the ACTS, the entire class was flown to Fort Benning to witness a demonstration of an infantry battalion in attack and to participate in an infantry terrain exercise. In the spring of the following year the historical section of the Infantry School presented a two-hour lecture on particular ground battles to the Air Corps students, and the Tactical School reciprocated during the closing maneuvers at Benning by furnishing its students to participate in an exercise involving the attack on ground forces by attack aviation.<sup>17</sup>

For two years after the move to Maxwell the Tactical School participated in the Army War College maneuvers at Fort DuPont, Delaware. In 1933, the last year in which the exercise took place, the maneuver was more satisfactory from the air point of view than in any previous year.



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Representatives from the Tactical School, headed by Maj. Hume Peabody, were allowed to use the air elements involved in a manner more nearly in conformity with their own concepts than had been permitted in earlier years. The air effort was centered on rear-area lines of communications, accumulations of supplies and troops, and depots rather than in the immediate area of the front lines. Maj. Gen. George S. Simonds, commandant of the Army War College, noted that the air phase of the maneuver was carried out that year in accordance with the desires of the Air Corps representatives and that the instruction was much improved. Lt. Col. John F. Curry, commandant of the Tactical School, was also encouraged by the results and pointed out that if future War College exercises were conducted on the same basis, it would do much toward teaching ground officers the effect of the proper employment of airpower. Unfortunately, in the next year funds for the War College were so restricted as to allow only a limited exercise by Army War College personnel alone.<sup>18</sup>

### **The Academic Department**

After the school moved to Maxwell, increasing emphasis was placed on air matters. There were two reasons for this significant development. In the first place, a far greater volume of material on military aeronautics was now available so that the courses in tactics and technique of the various classes of aviation grew steadily and the course in the employment of airpower, which in the early years had been shallow at best, expanded into a vitally important part of the year's study. Secondly, although following the creation of the Air Corps in 1926, the expansion of the air arm, together with enlarged school facilities at Maxwell, had resulted in larger classes at the Tactical School, there was not a proportionate increase in the number of Air Corps officers admitted to the Command and General Staff School. Because a smaller percentage of Tactical School graduates would attend the Leavenworth institution, school authorities by the mid-thirties had ceased to think of the Tactical School as a preparatory school for the C&GSS, but considered it instead as the most advanced school that most air officers were likely to attend. Therefore, they constantly readjusted the schedule in order to increase the amount of time available for the most important air matters. For example, they eliminated some less important air subjects, including mapping and sketching, and cut down such others as balloons and airships. Only sufficient instruction in ground subjects to acquaint air officers with the very basic fundamentals of other arms was retained.<sup>19</sup>

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By the mid-thirties more than 50 percent of the school year was given over to instruction in air subjects. Percentages over the five-year period, 1930-1935, indicate the increasing emphasis being placed on air matters.<sup>20</sup>

	1930- 1931*	1931- 1932	1932- 1933	1933- 1934	1934- 1935
Air subjects	43.6	48.8	46.3	50.9	52.9
Ground subjects	29.8	33.6	31.9	26.6	25.4
General subjects	26.5	17.6	21.8	22.5	21.7

That air subjects were given primary consideration at the school is also evidenced by the fact that in determining final grades, air subjects far outweighed the others.<sup>21</sup>

Instruction in air subjects was not merely by rote. Frequently lectures lasted for not more than 20 to 25 minutes, the remainder of the 50-minute class period being devoted to ideas proposed by instructors. Thus ideas were subjected to the probing inquiry of the students, who often offered new ideas. From the class discussions, coupled with endless disputes and discussion in faculty meetings and coffee-shop seminars, there emerged a stabilized body of concepts concerning the employment of airpower.<sup>†</sup> In keeping with the practice of rearranging the curriculum to meet more fully the mission of the Air Corps Tactical School, the academic division underwent frequent reorganization. By the time the school moved to Maxwell, instruction in engineering and administration had been dropped. In place of the three departments originally making up the academic division, the school was organized into four sections, each with a director. For example, for the 1933-1934 session, the first section, headed by Maj. Donald Wilson, included all air subjects: Air Force, Air Navigation, Attack Aviation, Balloons and Airships, Bombardment Aviation, Combat Orders, International Air Regulations, Observation Aviation, Pursuit Aviation, and Refresher Flying. The second section, under Maj. Vernon G. Olsmith, included Antiaircraft, Cavalry, Chemical Warfare, Coast Artillery, Combined Arms, Field Fortifications, Field Artillery, Infantry, Medical Corps, and Troop Leading. The third section, directed by Maj. Hume Peabody, (who was also assistant commandant) covered Logistics (Air), Logistics (Ground), Military Intelligence, Signal Communications, and Staff Duties.

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\* It may be noted that percentages for this year total 99.9%. No explanation for this discrepancy has been found.

<sup>†</sup> See Ch. 4, below.

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The fourth section, with Maj. R. R. Welshmer as director, was made up of Extension Courses, Maps and Photographs, Military Geography and Strategy, Military Organization, Mobilization, Naval Operations, and Orientation.<sup>22</sup>

During the school year 1934-1935, the academic division began to take the form it was to keep throughout the remainder of the school's existence. In that year the academic division's four sections were given titles: Department of Air Tactics, Department of Basic and Special Instruction, Department of Ground Tactics, and Department of Flying Instruction. Under the Department of Air Tactics were grouped the Air Force, Attack, Bombardment, Observation, Pursuit, and Balloons and Airships Sections. Under the Department of Basic and Special Instruction came the Logistics, Combat Orders, Communications, Maps and Photographs, Staff Duties, and Extension Course Sections. The Department of Ground Tactics was made up of Combined Arms, Infantry, Cavalry, Field Artillery, Chemical Warfare, and Antiaircraft. The Department of Flying Instruction included Practical Flying and Air Navigation. Other courses, such as Military Intelligence and Naval Operations, were fitted into the departments in accordance with the qualifications of the instructors.<sup>23</sup> In addition to the establishment of the various departments, by the mid-thirties, the following permanent faculty committees had been created: schedule committee, editing and coordinating committee, library committee, and book department council.

In October 1935 the Department of Air Tactics was redesignated the Department of Air Tactics and Strategy and the Department of Basic and Special Instruction became the Department of Command, Staff, and Logistics. Some reshuffling of courses accompanied the redesignation of the two departments. The Naval Operations course was assigned to the Department of Air Tactics and Strategy. The Balloons and Airships course was made a part of the Observation course. Military Intelligence absorbed the Maps and Photographs course and was assigned to the Department of Command, Staff, and Logistics. The Extension Course section, which in 1934 had been placed under the Department of Basic and Special Instruction, was made a separate section directly under the assistant commandant. There were no changes in the other two departments, Ground Tactics and Flying Instruction. Each of the four departments was headed by a director and each section within a department was controlled by a chief, with an additional instructor to assist, insofar as instructors were available.\*

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\* The organization chart is Appendix 1.

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The next significant change in the academic structure occurred in March 1938 when the Department of Flying Instruction was discontinued. Flying instruction was handled thereafter by the chiefs of the various air sections (Air Force, Bombardment, Pursuit, Attack, and Observation), each taking charge during the period his course was being taught. The Meteorology Section, which had been added to the Department of Flying Instruction in 1936, was reassigned to the Department of Command, Staff, and Logistics. The Air Navigation Section was made a part of the Department of Air Tactics and Strategy.

The most important department was Air Tactics and Strategy. Its principal subdivision was the Air Force Section. Initially concerned primarily with the combined employment of the various types of aviation, it had dealt only with large units and had covered command and staff work. As the course developed, the interdependence of pursuit, bombardment, attack, and observation aviation continued to be stressed, but by the mid-thirties the Air Force course, as the capstone in air instruction and as the course in which the theories of the impact of air power on war were expounded, had become the most important course in the curriculum.<sup>24</sup> The Attack and Bombardment Sections covered in detail organization, destructive agencies, materiel, methods of bombing and bombing accuracy, and formations; the tactics and techniques of groups and lower units, in daytime and at night, at both low and high altitudes, were discussed; the principles taught were applied and illustrated. The Pursuit course differed somewhat from Attack and Bombardment. In addition to covering the functions, organization, training, weapons, equipment, and tactics and techniques of pursuit units, this section also included discussions of gunnery principles—as they influenced the tactics and techniques of pursuit aviation—and the aircraft reporting net for pursuit operations. The Observation section stressed the contribution of aerial observation to ground forces. Instruction in the Aerial Navigation course was limited primarily to the principles of the subject.

The Naval Operations course grew steadily. Almost from the beginning of the school, lectures on naval operations had been given each year by a guest speaker from the Navy or by a member of the staff. In 1934–1935, Maj. Herbert A. Dargue who was a graduate of the Naval War College, inaugurated a full-scale, 8-hour course in Naval Operations. The course included lectures and naval tactics demonstrations in a game room with aircraft carriers to simulate fleet disposition models of the principal classes of surface vessels and naval battles. In 1936 a naval officer was detailed to the school as a full-time instructor, and by 1938, 25 hours were devoted to this section, conferences and problems having been added to the lectures and practical demonstrations.

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Although instruction in air subjects became dominant, instruction in the departments of Ground Tactics, and Command, Staff, and Logistics, as well as in the Naval Operations course, demonstrated that the ACTS curriculum was not limited to air matters.<sup>25</sup> Usually courses in the departments of Ground Tactics, and Command, Staff, and Logistics were presented first in the school year in order to prepare the student for the instruction given in air tactics and strategy. Moreover, instruction in these subjects was given "to round out his complete education as an Air Corps officer trained to fill a command or staff assignment in almost any capacity, especially where he will have close relations with other branches and arms of all the armed services as well as positions other than those dealing directly with air tactics and strategy."<sup>26</sup> In 1936 Maj. Ira C. Eaker gave a student's appreciation of the curriculum:

The course is designed, apparently with two primary purposes: one as a preparatory course to the Command and General Staff School, at Leavenworth; the second for the education of the Air Corps officer in his own arm—the Air Force. During the first half of the school year the student gets the impression that he is attending a service school of one of the other arms or, rather, a combination of all the service schools of the other arms. During this time he is turned over to the tender mercies of Field Artillery, Cavalry, Infantry, and Chemical Warfare officers who teach the precepts of modern warfare as fought by those arms . . . . After Christmas vacation, the student begins to find that this is, after all, an Air school. Bombardment, Attack, Observation, Pursuit and Air Force are then thrown at the student with bewildering rapidity. There is a text for each subject; there are lectures in class, illustrative problems, and the much dreaded map problem.<sup>27</sup>

### **Staff and Faculty**

Several members of the staff and faculty moved with the school to Maxwell. These included the former assistant commandant at Langley, Maj. John F. Curry, who became commandant of the school and commanding officer of Maxwell; 1st Lt. John DeF. Barker, secretary; Maj. Robert C. Candee, Capt. David S. Seaton, James T. Curry, Jr., and Charles McK. Robinson, and 1st Lt. Kenneth N. Walker, Air Corps instructors, and Capt. George H. Weems and Charles W. Walton, instructors in ground arms. In addition, two officers, Capt. Donald Wilson and Claire L. Chennault, who had been students at the school during its last year at Langley, became instructors. In the summer of 1931 two more Air Corps officers joined the faculty: Maj. Hume Peabody as assistant commandant and Capt. Edmund W. Hill as an instructor. At the same time three more

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ground arms officers became members of the faculty. Even with these additions, in the school's first year at Maxwell its faculty comprised only 16 officers, 2 less than had been present the previous year at Langley.

Although four more instructors were added for the 1932-1933 session the faculty still was not adequate. The larger student body permitted by the facilities at Maxwell demanded a further increase in the number of instructors; moreover, although the faculty was relieved of the distractions of post duties experienced at Langley, individual members continued to be required to serve on boards and committees. Requesting additional instructors in 1933 the Commandant pointed out that the extracurricular activities, such as the preparation of and review of tactical studies, work in connection with various maneuvers and exercises, and detail to various boards, were increasing.<sup>28</sup> He emphasized that the school had no desire to be relieved of these extra duties, for they benefited both the Air Corps and the school, but he urged that at least four additional instructors be added to the staff in order that the school might perform its function in a satisfactory manner. Finally, he insisted that until two instructors were available for each major course, specified as Air Force, Attack, Bombardment, Observation, Pursuit, Logistics, Staff Duties, Combat Orders, and Military Intelligence, the school would be operating with an insufficient number of instructors. By the mid-thirties this last requirement—which school authorities had long insisted was the minimum—had been met.

For some time, too, school authorities had urged that the faculty be composed of graduates of service schools and that the minimum requirement for faculty members should be graduation from ACTS. They also advocated graduation from the Command and General Staff School at Fort Leavenworth, and recommended that the commandant and assistant commandant, at least, be graduates of the Army War College. By the mid-thirties the staff and faculty were well above the minimum requirements in training. Of the 17 Air Corps officers on duty at the school, 16 were graduates of ACTS; four were graduates of C&GSS, Lt. Col. Herbert A. Dargue,\* assistant commandant, was a graduate of C&GSS, the Army War College, and the Naval War College. All five faculty members who represented the other arms and services were graduates of the C&GSS; in addition Lt. Col. Vernon G. Olsmith was a graduate of the Army War College, Lt. Col. William N. Porter was a graduate of the Army Industrial College, and Lt. Col. Robert R. Welshmer was a graduate of ACTS. Thus, by 1935, in a staff and faculty of 22 there were 17 graduates of the Air Corps Tactical School, 9 graduates of the Command and General Staff

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\* The only Air Corps officer not a graduate of ACTS.

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School, 2 graduates of the Army War College, 1 graduate of the Army Industrial College, and 1 graduate of the Naval War College.

Despite the steady improvements in the quantity and quality of the staff and faculty, the instructional staff at the school was never as large as school authorities desired. In 1938 Brig. Gen. H. C. Pratt, who had become commandant of the school the year before, recommended that the faculty be increased by five air officers during the following three years.<sup>29</sup>

The disadvantages of the small faculty were offset to a considerable degree by the high caliber of the commandants, assistant commandants, directors, and, in many instances, the individual instructors. Like their predecessors at Langley, officers in responsible posts at the school at Maxwell were, by and large, men of discerning minds and possessed a keen curiosity regarding the impact of airpower on war. Profiting from the work accomplished at Langley, they added the final touches to the slowly emerging concepts of air warfare.

Many of the faculty members in time rose to the rank of general officer and played prominent roles in the development of American airpower during World War II. Maj. Gen. Donald Wilson, USAF Ret., had a longer direct association with the school than any other officer: he served as instructor in 1929-1930, attended as a student in 1930-1931, served again as an instructor from 1931 to 1934, and after spending two years at the Command and General Staff School, returned to the school in 1936 as director of the Department of Air Tactics and Strategy, a position he held until January 1940. 1st Lt. John DeF. Barker continued to serve as school secretary until 1934, when he was replaced by Capt. Julian B. Haddon, Maj. Hume Peabody served as assistant commandant from 1931 through 1934. Capt. Claire L. Chennault headed the Pursuit Section from 1931 through 1935, and taught the next year, 1935-1936, in addition to other post duties. Capt. Harold L. George joined the faculty as an instructor in 1932 and in 1934, became director of the Department of Air Tactics and Strategy, a post he held until 1936. Maj. Grandison Gardner and Capt. Robert M. Webster and Gordon P. Saville were added to the faculty in 1934, Gardner as chief of the Air Navigation Section, and Webster and Saville as instructors in the Air Force and Maps and Photographs section respectively. 1st Lts. Haywood S. Hansell and Laurence S. Kuter joined the faculty in 1935 as instructors in the Air Force section and Bombardment section, respectively, Kuter serving as chief of his section for the 1936-1937 session. Capt. Hoyt S. Vandenberg became an instructor in the Pursuit section in 1936, and Maj. Muir S. Fairchild in the following year replaced Captain Webster as chief of the Air Force section, serving until 11 July 1940. Col. Millard F. Harmon in 1938 became assistant commandant, continuing in the post with one brief interruption until after classes were suspended in 1940. For the most part, these men served four-year tours at

## MAXWELL FIELD

the school, remaining there long enough not only to be influenced by but also to exert an influence on the doctrine of the employment of airpower which was slowly developing at the school.\*<sup>30</sup>

Almost without exception, other arms and services also appointed capable officers as their representatives to the school. Until 1924 all instruction had been presented by Air Service officers but Capt. W. W. Wise from the Chemical Warfare Service joined the faculty for the 1925-1926 session and, thereafter, representatives from other arms and services were gradually added to teach ground force subjects. By 1935, the Infantry, Cavalry and Field Artillery, as well as Chemical Warfare had representatives at the school on a full-time basis. Finally, in 1936 the faculty was rounded out by the addition of a naval representative, Lt. Bennett W. Wright.<sup>31</sup> Maj. Ira C. Eaker noted in the same year that it was "apparent that the other branches have selected their instructors with great care, as the type of instruction is of a high order." This was shown by the presence as instructors of such men as Lt. Cols. Charles P. Hall and Vernon G. Olsmith, Lt. Comdr. M. R. Browning, and Maj. Courtney Hodges, George H. Weems, Laurence B. Glasgow, and Benjamin F. Harmon.<sup>32</sup>

### Students, 1931-1940

By the mid-thirties the standard followed in the selection of students had been altered. Earlier standards required that officers attending the school be of average grade, age and experience; but by 1935 the requirement was that officers should be above the grade of second lieutenant, and to have an efficiency rating of not less than excellent; furthermore, not more than 14 percent of the quota of students were to come from the field officer grades and not more than 60 percent from the grade of captain.<sup>†</sup> All officers of the various eligible grades were placed annually on a list in accordance with their general average efficiency ratings; then within the various percentages in grade, the officers having the highest rating were assigned to the school by the Chief of Air Corps.<sup>33</sup>

In the meantime, the size of the classes had risen steadily. Facilities and a small staff had kept the classes relatively small as long as the school was at Langley, only 221 officers (including instructors given credit for the course) being graduated in 11 years. After the move to Maxwell expanded facilities, coupled with the steady increase in the size of the Air Corps and

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\* See Ch. 4 below.

† In the 20-year history of the school, the average rank of the students was captain.



## AIR CORPS TACTICAL SCHOOL

a steady but still incommensurate growth in the size of the faculty, resulted in larger classes. Between 1931 and 1940, 870 officers were graduated from the school. It should be noted, however, that of this number 400 were graduated from a series of four 12-week courses which were conducted between June 1939 and June 1940.

Of the 1,092 graduates of the school during its entire existence, 916 were air officers. Of the remainder, 158 were officers from the other arms and services graduated as follows:

Cavalry	16	Infantry	28
Chemical Warfare	15	Medical Corps	1
Coast Artillery	20	Ordnance	3
Corps of Engineers	2	Signal Corps	11
Field Artillery	22	U.S. Marines	35
		U.S. Navy	5

In addition, 1 air reservist and 17 foreign officers completed the course.

The Air Corps' expressed belief that attendance at ACTS by officers of other arms might help to dispel the prejudice against the air arm seemed to be sound. One infantry officer who attended the Tactical School reported:

My tour as a student at the Air Corps Tactical School has been an unusually pleasant and profitable one. It has given me an insight into, and an appreciation of, the problems of the Air Corps. My appreciation of the airplane as a valuable weapon has been considerably increased and, contrary to the belief of some, and in keeping with the majority of the ground officers, I have a high regard for the professional attainments of the officers of the Air Corps and a strong belief in the capabilities of the airplane.<sup>34</sup>

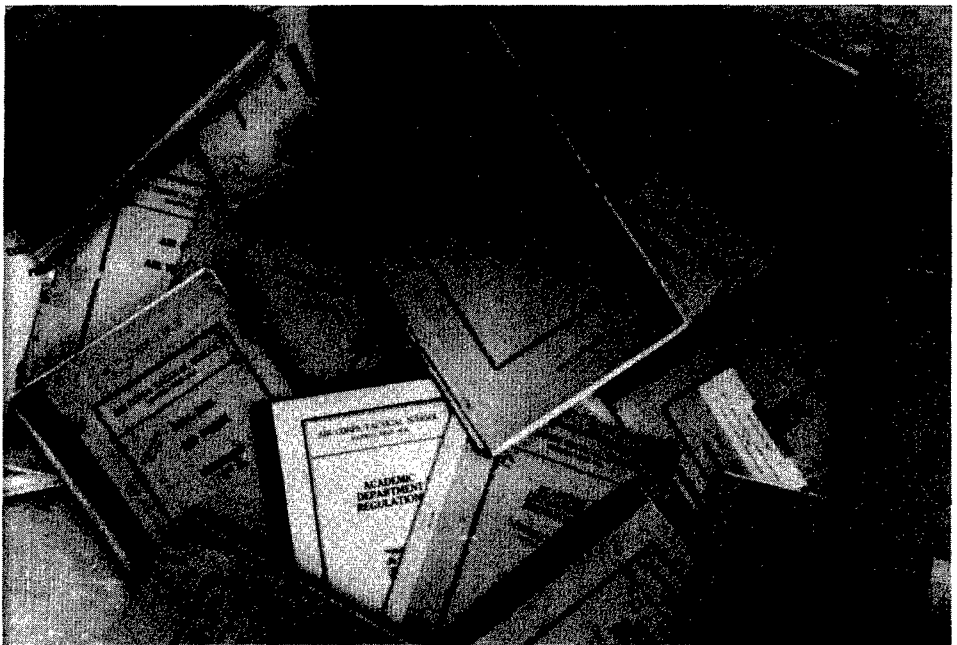
For the most part, graduates of the Tactical School furnished the leadership of the American air arm during World War II. On 7 December 1941 by far the larger portion of the 916 air officer graduates of the school were still on duty, because almost two-thirds of the total number of graduates had completed the school during the final five years of its existence. In fact, 380 Air Corps officers had graduated from the 4 short courses conducted during 1939-1940. Thus, the bulk of air officers attended ACTS after it had moved beyond the groping and indecision of earlier years to the formulation of a clear and decisive concept of the proper employment of airpower.

## MAXWELL FIELD

That the graduates of the Tactical School were rank of the leaders of the AAF during the years when the theories were being hammered into established doctrine is attested to by the fact that of 320 general officers on duty with the AAF at the close of World War II, 261 were Tactical School graduates. Of even more significance is the fact that the 3 four-star generals—McNarney, Kenney, and Spaatz—and 11 of the 13 three-star generals—Emmons, Brett, Yount, Eaker, Giles, George, Cannon, Vandenberg, Stratemeyer, Twining, and Whitehead—were graduates of the school. But the list of general officers on duty at the close of the war does not include many other eminent Tactical School alumni who served with distinction during the war and who made significant contributions to the development of American airpower. Nor does the list include casualties. In addition to General Westover, who was killed in an airplane crash in 1938, there were many other general officers who were war casualties, among them Asa N. Duncan, Frank M. Andrews, Harold H. George, Kenneth N. Walker, Clarence L. Tinker, Nathan B. Forrest, and Howard K. Ramey. Nor does the list at the war's end include such outstanding airmen as Brig. Gen. Earl L. Naiden, who, though not a graduate of the school, performed a great service in stabilizing the Academic Department while serving as director of instruction, and Maj. Gen. Robert Olds and Brig. Gen. Frank D. Lackland, all three of whom died during the war. Another group not in the list is composed of those general officers who retired before the end of the war, including Follett Bradley, Harvey S. Burwell, Rush B. Lincoln, Delmar H. Dunton, Henry B. Claggett, and others.

# **Air Corps Tactical School**

**Birthplace of  
American Air Doctrine**



**A sampling of the texts used for the Air Corps Tactical School**

# Air Corps Tactical School



**Maj. Orvil A. Anderson**  
ACTS Class 1936-37



**Lt. Clayton L. Bissell**  
ACTS Class 1920-21  
ACTS Staff 1926-30



**Maj. Lewis Brereton**  
ACTS Staff 1924-25



**Maj. George H. Brett**  
ACTS Class 1927-28



**Capt. Claire L. Chennault**  
ACTS Class 1930-31  
ACTS Staff 1931-36



**Maj. John F. Curry**  
*shown as 1st Lt.*  
ACTS Class 1927-28  
ACTS Staff 1930-35

## Graduates and Staff



**Maj. Ira C. Eaker**  
*shown as Lt. Col.*  
ACTS Class 1935-36



**1st Lt. Frederick W. Evans**  
*shown as Capt.*  
ACTS Class 1933-34  
ACTS Staff 1934-37



**Maj. Muir S. Fairchild**  
ACTS Class 1934-35  
ACTS Staff 1937-41



**Maj. Walter H. Frank**  
ACTS Class 1924-25  
ACTS Staff 1926-30



**Capt. Harold L. George**  
ACTS Class 1931-32  
ACTS Staff 1932-36



**2nd Lt. Davenport Johnson**  
*shown as Maj.*  
ACTS Class 1920-21  
ACTS Staff 1920-21, 1926-28

# Air Corps Tactical School



**Capt. George C. Kenney**  
ACTS Staff 1927-31



**Maj. William E. Kepner**  
ACTS Class 1935-36



**Maj. Hugh J. Knerr**  
ACTS Class 1925-26



**Capt. Lester J. Maitland**  
*shown as Lt.*  
ACTS Class 1934-35



**Maj. Joseph T. McNarney**  
ACTS Class 1920-21  
ACTS Staff 1920-25

## Graduates and Staff



**Lt. Elwood R. Quesada**  
ACTS Class 1935-36



**1st Lt. Charles McK. Robinson**  
ACTS Class 1929-30  
ACTS Staff 1930-34



**Maj. Ralph Royce**  
ACTS Class 1926-27

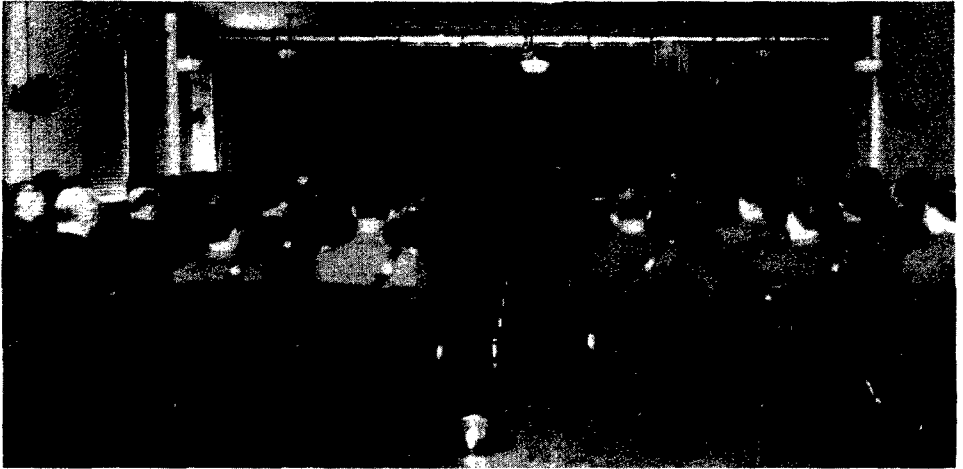


**Maj. Carl Spatz**  
(later Spaatz)  
ACTS Class 1924-25



**Brig. Gen. Walter R. Weaver**  
ACTS Staff 1938-41

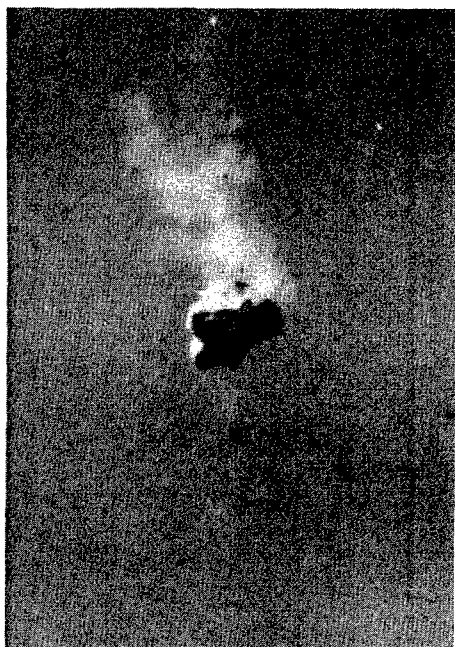




**Opening exercises, Maxwell Field, 1931**



**Classroom, Air Corps Tactical School, Maxwell Field**



**ACTS students attack a captive balloon, Langley Field**



**Capt. Guy H. Gale and Maj. Spencer A. Townsend practice aerial photography at Langley Field, 1931**

10-11-44





**Gen. Mason M. Patrick  
presents diplomas to  
Air Service Tactical  
School's class of 1923,  
Langley Field**

## Development of Doctrine at the Air Corps Tactical School

In 1936, the infantry officer who reported his experience at the Tactical School\* criticized some of the instructors for "apologizing and making excuses for the lack of conclusive proof to bear out their theories regarding tactics and technique (particularly the former)." Admittedly instruction as to just how the air force and its constituent parts were to fulfill their missions was sometimes indecisive. But by the mid-thirties, though developing slowly, the concepts that the air force was an indispensable part of the military establishment and that an air war, separate and distinct from surface engagements, would characterize future warfare had become firmly entrenched in ACTS literature.

Throughout the post-World War I period there was a variance between the concepts of airmen and the War Department General Staff (WDGS) on the proper employment of airpower. Basically, the General Staff view was that the airplane was simply a valuable adjunct to ground armies and that its principle function would be to assist ground forces. Even as late as 1935, after the creation of the GHQ Air Force, the General Staff considered the air force "a highly mobile and powerful combat element which...conducts the operations required for carrying out army missions."<sup>1</sup> Airmen, on the other hand, were convinced that warfare in the future would be increasingly dependent upon airpower, which they regarded as a major offensive striking arm. A few even went so far as to proclaim that aviation represented a third and equal, or perhaps even superior, branch of warfare. And all airmen agreed that the air weapon should be considered as more than a mere auxiliary to the ground forces. Although the experience of the Air Service in World War I was

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\* See above, p. 42

## *AIR CORPS TACTICAL SCHOOL*

limited, nevertheless, it had inculcated in airmen the following specific beliefs: control of the air is mandatory for successful surface or air operations; to be effective, airpower should be employed in mass; air units should be commanded by competent airmen who understand not only the capabilities and limitations of the air weapon but also personnel problems peculiar to flyers.

### **The School as the Air Corps Doctrinal Center**

Despite the firm conviction of airmen on these points, the Office of the Chief of Air Service (Air Corps after 1926) was faced with the stern realities both of the budgetary deficiencies under which the service operated and the subordinate place of the air arm within the military establishment. Moreover, in view of the isolationist philosophy which prevailed in the United States in the two decades after World War I, OCAC found itself forced into the position of delineating the role of aviation within the framework of the national policy of defense against hostile attack. It is not to be inferred that responsible airmen surrendered their firm convictions that airpower to be effective had to be concentrated and that by its very nature it was an offensive instrument, even when used for defense. Nevertheless, OCAC could find little time to consider fully the impact of airpower on war with its resultant ramifications. Accordingly, it called upon subordinate agencies to consider such problems in detail. Matters relating to technical and tactical aspects of airpower were handed to such organizations as flying training schools, the Materiel Division at Wright Field, and the GHQ Air Force. Logically, the Tactical School, with the assistance of the Air Corps Board, became the agency which developed air doctrine. Although its mission was the training of air officers for higher staff duties, the chief value of the school to the Air Corps lay in its extra-legal function of serving as a sounding board for ideas concerning the critical issue of the role of airpower in war.

If one person were to be singled out as having had the most decided influence on the school, it would probably be Brig. Gen. 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.\* After his court-martial in 1925 it would have been decidedly impolitic for airmen at the Air Corps school to indorse openly

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\* See above, p. 42

## DEVELOPMENT OF DOCTRINE

Mitchell's views or to include reference to his writings in school literature. Thus, when the host of ideas on airpower were being synthesized into a body of fully developed concepts, the influence of "Billy" Mitchell was not as direct as might have been expected. Brig. Gen. Laurence S. Kuter, in an interview in 1942, reflected on Mitchell's influence at the school:

Notes on the Multi-Motored Bombardment Group, Day and Night by Brigadier General William Mitchell, Assistant Chief of Air Service, 1922 . . . was the basis of instruction in the Air Corps Tactical 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 Air Corps Tactical School . . . . Captain Robert Olds, another of Mitchell's aides, 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.<sup>2</sup>

When instructors at the school began to graft the concept of the primacy of the bomber onto the concept of air warfare and strategic air operations, they were consciously or unconsciously providing the covering for the skeleton built by Mitchell.

Another person who could have had an influence on the Tactical School was the great Italian exponent of airpower, Giulio Douhet. But it is doubtful that he had any profound influence on the thought at the school. Although Douhet's writings began to appear in Italy in the early 1920's, they do not seem to have found their way immediately to American publications. At ACTS only an imperfect translation was available and this not until about 1933. By that time school concepts had begun to take shape. However, there were points where Douhet and American theorists coincided, and for a time lecturers at the school cited "the Italian authority" as further evidence of the soundness of their views. His concepts of the "air cruiser" and large formations of unescorted bombers were approved by the school theorists, who also agreed with his over-all concept of air warfare—the totality of the next war, the interdependence of the segments of national structures, and the possibility of airpower upsetting the delicate balance, thereby breaking the civilian morale. Douhet also sensed the necessity first for gaining control of the air, presumably by using bombers since he thought that other types of aviation, save reconnaissance, could be ignored. Once control of the air was established, bombers could go unmolested about their business of disrupting vital

## *AIR CORPS TACTICAL SCHOOL*

industries and thereby bringing the war to a quick decision. But Douhet was never really in vogue at the Tactical School. His advocacy of mass area bombing at night was at variance with the ACTS concept of daylight precision bombardment of pinpoint targets. By the late thirties, when this concept had become firmly entrenched in the school, references to Douhet became less frequent. Gen. Laurence S. Kuter and Maj. Gen. Haywood S. Hansell, Jr., USAF Ret., both have stated that Douhet had little influence at ACTS. Maj. Gen. Donald Wilson, USAF Ret., one of the leading theorists at Maxwell during the thirties, has said that he had never read all of Douhet, and, in any case, disagreed with his idea of mass bombing.<sup>3</sup> Actually foreign influences seem 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.

Ideas concerning airpower in war automatically gravitated toward the ACTS where they underwent a variety of tests, analyses, and comparisons. Those that successfully ran the gantlet were adopted to fill gaps in the slowly accumulating body of school concepts; those that fell were discarded. Too, out of the clash of ideas there merged new thoughts within the school itself. In handling ideas, the school was unencumbered by the restraining factors surrounding the OCAC. For experimental and theoretical purposes, the offensive use of aircraft could be visualized and the diminutive air force in being could be supplanted by vast air armadas. Also at the school, faculty and students alike had an opportunity—very probably for the first and only time in their military careers—to analyze their own thoughts on the matter of the employment of airpower; of equal importance, officers were exposed to the stimuli of other thoughts. But the faculty and students did not confine themselves to a consideration of the application of the air weapon to traditional concepts of surface engagements; rather, they explored the whole theory of warfare to discover whether or not this new, relatively untried weapon had altered the nature of war. Maj. Harold L. George, while director of the Department of Air Tactics and Strategy, explained the problem to the student body at the first session of the Air Force course in 1935:

From today on much that we shall study will require us to start with nothing more than an acknowledged truth and then attempt, by the utilization of common sense and logic, to evolve a formula which we believe will stand up under the crucial test of actual conditions. We shall at tempt to develop logically, the role of air power in future war, in the next war. We are not concerned with fighting the past war;—that was done 18 years ago. We are concerned, however, in determining how air power shall be employed in the next war and what constitutes the principles governing its



## *DEVELOPMENT OF DOCTRINE*

employment, not by journeying into the hinterlands of wild imaginings but by traveling the highway of common sense and logic.

In pursuing this purpose, we realize that air power has not proven itself under the actual test of war. We must also realize that neither land power nor sea power has proven itself in the face of modern air power.

The question for you to consider from today on war, to have constantly before you as you continue your careers, is substantially this:

Has the advent of air power brought into existence a method for the prosecution of war which has revolutionized that art and given to air forces a strategical objective of their own independent of either land or naval forces the attainment of which might, in itself, accomplish the purpose of war; or has air power merely added another weapon to the waging of war which makes it in fact only an auxiliary of the traditional military forces?<sup>4</sup>

Students were urged to inquire "into the very depths of the philosophy of war." They were to determine: What is war? Why does war occur? What is the object of war? How has it been waged in the past and why has it been waged in that manner? Is it to the advantage of civilization to change the methods of waging war if such change is possible? Has modern civilization reduced or increased the vulnerability of nations? Consideration of the central issue of the role of airpower in war was influenced by technological developments in aeronautics. From the close of their World War I, airmen envisaged eventual production of aircraft possessing far greater destructive powers range than those used in that war, and many of their concepts of the future of airpower were rooted in their faith that before another war occurred such aircraft would be available. The appearance of the B-10, B-12, and, more important, the B-17 by the mid-thirties served to solidify those concepts. As a result of the technological advances and the serious study and thought given to the question of the employment of airpower in war the Army Air Corps at the outbreak of World War II had both the nucleus of a modern air force and a body of concepts to guide its use.

The long-range bomber and the concepts of its truth employment were 15 years in evolution. During the Tactical School's early years, such a weapon and such concepts were beyond the ken of the instructors. Only with time could the air experience of World War I be analyzed and its portents the future be determined. Hence, however great their faith in the future of airpower, because they had so little precedent or doctrine to guide them into and so little time to contemplate the future potentialities of the air weapon, instructors at first were forced to draw on the limited experience of the war just ended as the basis for their discussion of the employment of airpower.

## *AIR CORPS TACTICAL SCHOOL*

### **Observation Aviation**

Instruction at the Tactical School from its beginning was based on the belief that the air arm should be divided into two distinct classes: the air service, which was made up of observation, and forces, the air force, which consisted of the remaining branches of aviation and which constituted "a true arm."<sup>5</sup>

On the basis of "the heritage of our proving ground-the World War,"<sup>6</sup> and throughout the 20-year history of the school, observation was considered as an integral part of armies, corps, and divisions, and worked with the infantry like any other auxiliary. By the mid-thirties the need for reconnaissance within the air force was recognized, but instruction in observation continued to be based on World War I situations. In view of the mechanization of armies, which began in the mid-thirties and obviously quickened the pace and widened the scope of ground force operations, and in view of the striking advances made in pursuit aircraft, it should have been apparent that observation based on World War I standards would be completely inadequate in another war. Unfortunately, thinking on the employment of observation did not keep pace with the steadily expanding concepts of the employment of the elements of the air force. As late as February 1941 Col. Robert M. Goolrick, commanding Air Corps Troops, IX Corps, called attention to the lack of progress in observation:

I had not served with Observation Aviation for nine or ten years until returning to this station. I find, after all these years, practically no change in the basic theories of the branch and very little change in the equipment assigned . . . . This important branch of the Air Corps has stagnated for the past fifteen years . . . .

A short time later Goolrick wrote that

there has been little change in the technique of employment of the equipment of observation for many years, though conditions under which Observation Aviation is employed have undergone radical and revolutionary changes.<sup>7</sup>

Had the Tactical School sensed the need for modernizing observation aviation, conceivably the doctrine for the command and employment of this important branch of the air arm and the question of the types of planes essential to its functioning would have been determined before a crisis arose. As it was, when the United States entered the war observation

## *DEVELOPMENT OF DOCTRINE*

was undergoing a reorganization\* which was not completed until mid-1943 when observation units were redesignated reconnaissance units.

### **Doctrine of Air Force Employment, 1920-1926**

The World War I experience which so influenced the teaching of observation throughout the history of the school was an important factor for only five or six years in the instruction given in the employment of the elements of the air force (which excluded observation). During this early period, school instructors expressed few advanced ideas on the employment of the air force. Air operations were closely related to surface strategy, with the air arm considered a vital element in winning the ground objective. Because the first duty of pursuit aviation was the gaining of air superiority which was a prerequisite to successful surface and air operations, pursuit was regarded as the most important element of the air force. Pursuit was to achieve its mission by offensive actions against the hostile air force and not by such defensive operations as close protection of observation planes or bombers by a flight of pursuit aircraft, and aerial barrage, in which friendly aircraft set up a barrage over the front lines to serve as a barrier to hostile aircraft. Both close protection and aerial barrage techniques had been tried and proved unsound during the war, asserted the 1922 school text for air subjects. The successful employment of pursuit not only would protect surface forces from attacks by hostile aircraft, but would also permit the other elements of the air force and observation to accomplish their missions.<sup>8</sup>

From the time of its establishment the school recognized bombardment as a potentially powerful weapon. It visualized two kinds of bombardment, tactical and strategical. Both types were to be planned on the basis of their ultimate effect on the ground campaign. For several years instruction in bombardment was imprecise; targets were vaguely described as communications and troop concentrations. This same general approach was followed for the next few years and as late as 1926 the Bombardment text noted that the course was to deal primarily with operations in support of, or in conjunction with large forces of ground troops rather than with "what may be termed independent air force operations."<sup>9</sup>

Despite the absence of concrete evidence of the capabilities of the air weapon, the school early gave thought to the possibilities of airpower in

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\* For a comprehensive account of the observation problem, see Air Historical Study 24, Command of Observation Aviation: a Study in Control of Tactical Air Power, 1952.

## AIR CORPS TACTICAL SCHOOL

the future. The 1922 air subjects text challenged “the professed doctrine of the military world of today” that the success or failure of the army depended on the success or failure of the infantry and that all other arms were auxiliary and of value in proportion as they rendered aid to the infantry. Thinking on air matters was not then far enough advanced for airmen to advocate a strategic air war but this text suggested that airplanes might possibly be decisive against infantry. It noted that a disparity in the effectiveness of weapons did exist between the infantry and the airplanes that, although the airplane could easily close in to the attack at will, the infantry would be unable to come to grips with airpower.\* These conditions, said the text, clearly indicated that the doctrine that “the success or failure of the infantry determines the success or failure of the army” could not be “called a true and unalterable fundamental,” and suggested that the doctrine “may be altered at some future time.”<sup>10</sup> Summing up the impact of the air weapon on surface warfare, the 1922 text asserted that the air force assisted the infantry, in the same broad sense that the Navy assisted the infantry. The text then warned that in deriving the doctrine that must underlie all principles of employment of the Air Force, we must not be guided by conditions surrounding the use of ground troops, but must seek out our doctrine, as with the Navy, in the element in which it operates.”<sup>11</sup>

### **Evolution of the Theory of Daylight, High-Altitude Precision Bombardment of Pinpoint Targets**

By 1926 a concept of warfare differing from the traditional one had begun to take form. Heretofore, military doctrine had been in terms of surface engagements. The Clausewitzian principle on which War Department doctrine was based was set forth in the Field Service Regulations of 1923: “The ultimate objective of all military operations is the destruction of the enemy’s armed forces by battle. Decisive defeat in battle breaks the

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\* Antiaircraft fire was expected to continue “to be what it is—a very troublesome thing to the inexperienced, a source of mild annoyance to the veteran, never a formidable enemy.” The school believed that the speed and altitude of aircraft and the immensity of the sky would afford protection to the aircraft from ground fire. In recalling the lack of emphasis placed on antiaircraft artillery, Brig. Gen. Hume Peabody USAF Ret., stated in 1954: “I believe we missed the boat in the '30's in another field, also. Too little attention was given to the possible developments in A.A. Artillery. I have always had the feeling that we treated the A.A. people too much as we ourselves had been treated by the earthbound General Staff. I believed then and still believe that A.A. should be an integral part of the Air Force.” (See Memo for The Director, RSI, from Hume Peabody, 19 April 1954).

## DEVELOPMENT OF DOCTRINE

enemy's will to war and forces him to sue for peace." Achieving the objective demanded the combined employment of all arms, for no one arm won battles. Nevertheless, the infantry was still the "Queen of Battle" and the "coordinating principle which underlies the employment of the combined arms is that the mission of the infantry is the general mission of the entire force. The special missions of other arms are derived from their powers to contribute to the infantry mission." The 1926 Tactical School text, *Employment of Combined Air Force*, deviated slightly from the Clausewitz theory. It asserted that in the past, except in most unusual circumstances, an enemy's capital, commerce, industrial centers, or resources had not been considered proper military objectives because of the limited mobility and striking power of surface forces. But the air force operated in three dimensions and could terrorize the whole population of a belligerent country while at the same time conserving life and property of both friend and foe to the greatest possible extent. In short, using airpower to strike heavily at the vital points of a nation's structure rather than conducting exhausting wars of attrition was a means of achieving the military objective with the least possible cost.

Authors of the manual frankly admitted that because of lack of experience any statement on the influence of strategic air operations on future warfare was a matter of conjecture. They declared, however, that by virtue of its mobility and range of action, the air force exceeded any other means available to a commander for striking quickly and decisively at an enemy's bases and centers of concentration. When friendly ground forces were on the defensive, strategic air operations could and should be continued; even when ground elements were engaged in important tactical operations, air forces should be used extensively in strategic operations. A cardinal principle in the strategic employment of the air force was voiced in the warning that once an element of the enemy's economic structure was singled out for attack that particular element should be completely destroyed before the main action shifted to some other objective.<sup>12</sup>

If the destruction of the enemy's morale was not possible at the outbreak of hostilities, then the air force objectives should be selected with the view of destroying the enemy's military strength. The most suitable objectives for this purpose were listed as: the hostile air force; troops, supplies, and lines of communication in the combat zone; concentration centers and lines of communication in the communications zone; and industrial and transportation centers in the Zone of Interior. If a ground campaign developed, tactical air operations (defined as "those missions which are conducted for the purpose of having an immediate effect on operations in the combat zone,") might be carried out by the entire air force. However, the belief was expressed that only rarely would all the air force be engaged in work of a tactical nature;<sup>13</sup> normally, a portion of the

## *AIR CORPS TACTICAL SCHOOL*

air force would continue to carry on strategic operations. Stress was laid on a GHQ Air Force which not only could be shifted in strength to different sectors within a particular theater but also could be moved from one theater of operations to another with comparative ease thus fully exploiting the inherent flexibility of the air weapon. With such a force it would be possible to concentrate superior numbers where and when necessary to assume and maintain offensive action. Thus was emphasized the necessity for centralized control of airpower.

The text also reflected a new emphasis on bombardment aviation. Heretofore, because pursuit was the particular branch charged with gaining and maintaining air superiority through air combat, it was considered the backbone of the air force. The 1926 text maintained that it was futile to attempt to stop hostile aerial activity through aerial combat alone; once airborne an air attack was virtually impossible to stop. The only effective method of gaining and maintaining air superiority was to destroy hostile aircraft before they could get into the air in force. Therefore, the mission of bombardment and attack aviation, particularly during the initial stages of hostilities, was to attack grounded hostile aircraft. Thus, although pursuit continued to be viewed as valuable for air combat and for escorting the other elements of the air force, by 1926, bombardment (including attack) was coming to be considered the most important element of the air force.<sup>14</sup>

By 1930 the concept of the primacy of bombardment was firmly established at the Tactical School. That year the authors of the text for the Air Force course left no doubt that in their opinion pursuit could not guarantee immunity from hostile air attack, and consequently that the only way to gain control of the air was through a determined bomber offensive. They asserted that an air force preponderantly pursuit could not materially affect the ground situation except through the indirect method of destroying hostile aircraft. But an air force preponderantly bombardment and attack could affect the ground situation not only indirectly by participating in the counter-air campaign but directly by attack against ground targets.<sup>15</sup> In their discussion of attacks against ground targets, the authors of the manual emphasized the strategic employment of bombardment. They wrote that, excepting operations against an enemy air force, by far the greater portion of the operations of an air force would be strategic. An air force was viewed as a tremendously powerful agency of war whose chief characteristics were intensity and volume of fire, speed, flexibility, long range, and, when in flight, independence of the terrain. The concept that the air force would not attack objectives on or in the immediate vicinity of the battlefield except in the most unusual circumstances was expressed far more positively than in earlier school manuals. The manual recognized

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that the air force on occasion would be required for direct support of the infantry, but warned that even an army was too small a unit to utilize to the maximum the great range and flexibility of an air force. As the bomber grew in importance in the minds of the Bombardment and Air Force instructors at the school, increasing emphasis was placed on its use against targets in rear areas and in the interior of enemy nations. Nevertheless, in 1930, and for the next two years, the strategic employment of bombardment still hinged on surface strategy; for targets were vaguely defined as those whose destruction would impede military operations.<sup>16</sup>

In 1933 when Maj. Donald Wilson was assigned the task of preparing the Air Force course, he reasoned that far more specific targets in the interior of an enemy's country should be designated as the objectives for bomber operations. The problem, as Wilson saw it, was to select targets whose destruction would disrupt the entire fabric of an enemy's economy and thereby to discommode the civilian population in its normal day-to-day existence and to break its faith in the military establishment to such an extent that public clamor would force the government to sue for peace.

From his experience as a civilian with American railroads, Wilson was aware that the destruction of a few vital links would disrupt an entire railroad system. If this was true of railroads, might not the same be true for other industries? Wilson's general idea of applying pressure to a few vital links in the enemy's economic structure received a tremendous boost in the thirties by a classic example which emphasized the possibilities of selective bombardment: it was discovered that the lack of a particular highly specialized spring, manufactured by one particular firm and essential to the functioning of the controllable-pitch propellers nullified, to all intents and purposes, a very large portion of the aircraft production in the United States. Maj. Gen. Haywood S. Hansell, USAF Ret., has said that this practical example set the pattern for the selection of ideal precision targets; items of similar criticality for basic industries were sought.<sup>17</sup>

By 1933, instruction in the employment of the air forces centered on the interdependence of the segments of the economic structure of a nation. The farmer depended upon industrial centers for clothing, tools, and machinery; the city dweller depended upon the farmer for food; the miner depended upon the farmer for his food and upon the industrial laborer for other necessities and luxuries. Moreover, the producer and consumer frequently were brought together only through the medium of intricate transportation systems. The school, therefore, viewed transportation, steel, iron ore, and electric power complexes as the most likely objectives for the air force. Since the purpose of military operations was to bring about the submission of the enemy, it was maintained that the creation of an imbalance in the intricate economic structure which rested

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on these basic industries could defeat any modern industrial nation by bringing about a collapse of morale and by denying the nation the economic factors essential to waging the war. The interruption of this closely-knit web by destroying one or more of its threads was considered the primary objective for an air force. Not only were such concepts being taught at the school but they also served as the basis for the testimony of school representatives before the Federal Aviation Commission in 1934.<sup>18</sup>

At about the same time that Wilson began to broach his ideas, the school was moving toward the concept of daylight bombardment. As far back as 1926 the Bombardment text had noted that small targets which were difficult to see from the air and which required precision bombing would best be destroyed in daylight attacks. However until about 1930, night bombing was emphasized. Tactical targets, which were only lightly protected by pursuit and which called for only shallow penetrations, might be attacked by day, but targets requiring deep penetration would be bombed at night. The 1931 Bombardment text noted that day bombardment was stressed in the training of light bomber units. Nevertheless, the 1931 text gave increased attention to day bombardment of strategic targets in the statement that heavy bomber units not only would be required to perform day missions in coastal defense operations, but, because of the greater accuracy of day bombing, would also in many instances operate by day against difficult precision targets. By 1932, the school had indorsed explicitly the concept of daylight bombardment, and during the 1932-1933 session a lecturer in the Air Force course stated:

The Italians are exponents of large formations at night . . . .  
However, we do not subscribe to this idea, at present. We want to transport our mass to the objective. If we can, it is that much simpler. When we arrive at our objective, the better the visibility, the better our chance of accomplishing our desired destruction.<sup>19</sup>

Airmen, too, had long valued altitude, and at the Tactical School, instructors had constantly stressed the necessity for raising the ceiling of service aircraft. The Bombardments text for 1931, for example, maintained that a high ceiling and rapid rate of climb not only would increase the difficulty of location and interception of bombers by enemy pursuit aviation, but would also decrease the effectiveness of anti-aircraft artillery. This manual called for a service ceiling of 15,000 feet for light bombers and 18,000 feet for heavy bombers.<sup>20</sup>

Instructors had also begun to indorse the theory of bomber invincibility. In 1931 the Bombardment text guardedly expressed this theory in the statement that bombers could operate either by day or by night, singly or



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in mass, with or without support of other aviation. Bomber defense against hostile pursuit was based on the mutually supporting fire of machine guns of airplanes flown in close formation.<sup>21</sup> As the speed of bombardment aircraft approached that of pursuit, the difficulty of interception by the latter would be increased and the time interval during with pursuit might attack bombers after interception would decrease.<sup>22</sup>

With the appearance of the B-9 and B-10 airplanes in the early thirties, the competition between bomber and pursuit seemed so even that it appeared that bombers would be relatively safe from fighter interception. The production of a bomber equal to—with promise of a bomber superior to—pursuit in speed and range presented school theorists with a complicated problem; for their concept of employing bombers tended more and more toward that of attacking the interior of a hostile nation immediately upon outbreak of hostilities. But if pursuit lacked both the range and speed necessary to accompany bombers, obviously the latter could not depend on the former for protection. Moreover, if pursuit aircraft were not capable of accompanying bombers, it was anticipated that nations would concentrate their pursuit around their most vulnerable targets as a defense against attacking bombers. However, instructors believed that pursuit would have difficulty in intercepting bombers. For example, Lt. Kenneth N. Walker, in a lecture in the Bombardment course, asserted: "Military airmen of all nations agree that a determined air attack, once launched, is most difficult, if not impossible to stop."

From the beginning instructors had been forced to admit that because of lack of experience much of their instruction was pure theory. But their theory was made even more abstract by the stubborn fact that no aircraft existed with the range and destructive capacity necessary to test it. Undoubtedly the operational capabilities of the B-9, B-10, and B-12 aircraft in the early thirties served as a stimulus to the theorists at the Tactical School; certainly the development of these greatly improved bombers and of more advanced views at the school coincided. As encouraging as the new bombers must have been, instructors at the school were thinking in terms of even more advanced aircraft with unprecedented range and destructive capacity. In pointing out to the Federal Aviation Commission the reasonableness of the school view that the defense of the United States could best be assured by attacking an enemy at the source of his power, Capt. Harold L. George, in 1934 noted that the aeronautical industry could, within two years, provide aircraft with a range of 3,000 miles.<sup>23</sup>

Less than a year later, the XB-17, a four-engine bomber of revolutionary design, flew its initial test flight. The B-17 was not an intercontinental bomber; it still would need forward bases for employment against,

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the interior of probable enemy nations. But its range, bomb-carrying capacity, armament, service ceiling, and rate of climb were impressive by comparison with earlier models. Its potential for attacking targets in the interior of a hostile nation was far greater than that of any previous plane.<sup>24</sup>

With the appearance of the B-17 many bomber enthusiasts declared that nothing could stop the bombers and that escorts were unnecessary. The B-17 not only outperformed any known pursuit, but it was generally believed at the Tactical School that any pursuit designed to keep pace with the new bomber would have to sacrifice its fundamental pursuit characteristics to the point that it would be virtually useless for air fighting. Although the employment of the B-17 could be planned—at least insofar as its characteristics of speed, range, and service ceiling were known—any concept that entailed the bomber's being escorted by pursuit would have to be based on aircraft that did not exist, and as far as the majority of the instructors were concerned, could not be produced for engineering reasons. Therefore, instructors, forced to make a virtue of necessity embraced whole-heartedly the concept of bomber invincibility.

The impact of the B-17 on thought at the Tactical School was profound, and was made more so by another technological development which strengthened the formula for successful strategic air operations. Virtually from the close of World War I, airmen had recognized the need for improvements in bombsight equipment. In the school's consideration of air attacks on communication targets, the point was continually made that the bombing inaccuracy of World War I against such targets as bridges would be offset in another war by improved sights. The 1931 edition of the Bombardment text noted that because the bombsight was the most important part of the fire control system of the bombardment airplane every effort should be made to develop the most efficient bombsight possible if the full powers of bombardment were to be realized.<sup>25</sup> Finally, in 1933 orders were placed for improved models of the Sperry bombsight and for a new and more advanced piece of equipment, the Norden Mark XV. This, with the successful test of the B-17 in 1935, it appeared that the Air Corps had the plane and the bombsight which would accurately place heavy destructive loads on small, distant targets.<sup>26</sup>

By 1935 the full-blown theory of high-level, daylight precision bombardment of pinpoint targets was being taught at the Tactical School. From the early days when teaching was limited to the air experience of World War I, the school had given purpose and direction to the steadily accumulating body of ideas on the employment of airpower in war. It had consolidated these ideas into an integrated body of concepts and had added to them. And from this synthesis came the capstone of the theory—the selectivity of targets.

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### **Conflict with the War Department General Staff**

The Tactical School's concept of employing the heavy bomber in daylight against critical pinpoint targets in the interior of a hostile nation was contrary to the views of the War Department General Staff (WDGS). In fact, before World War II the WDGS would never have approved a long-range bomber solely for eventual employment in a strategic role. Throughout the controversy over the development and procurement of heavy, long-range bombers (even after the B-17 was developed, the General Staff hesitated to purchase it in quantity), responsible airmen were careful to avoid the advanced concepts of the ACTS in their arguments favoring the new plane.<sup>27</sup> Hence, officially, the long-range bomber was developed as a defensive weapon, and from 1935 (which marked not only the appearance of the B-17 but also the creation of the GHQ Air Force [GHQAF]) until the outbreak of war in Europe, the WDGS, OCAC, and GHQAF were concerned with the problem of how the Air Corps could best assist in the defense of the United States.

Official planning for the future employment of the air force was based on the 1935 version of Training Regulation 440-15, Employment of the Air Forces of the Army, which governed the use of the air forces of the Army and constituted the basis for their training. Although this regulation clearly indicated that the General Staff still considered airpower to be mainly a valuable means of influencing ground strategy, in some minor respects it was a compromise between air and ground concepts. It stated, for example, that the power of air forces had not yet been fully tested, nor had the effect they might produce or the extent to which they would influence warfare yet been determined. At the same time the regulation admitted that skillful use of air forces would greatly affect operations in future wars. It also made a slight concession to the necessity for counter-air operations by agreeing that such operations were "generally of primary importance." But if the document admitted that warfare of the future might give airpower a larger role, it also revealed that as far as the General Staff was concerned the primary function of the air force still was support of ground operations. In brief, "Air operations, like many other military operations, are governed by the same fundamental principles that have governed warfare in the past," and consequently, "Air Forces constitute a highly mobile and powerful element which conducts the operations required for carrying out the Army mission."<sup>28</sup>

In 1938, when Brig. Gen. Henry C. Pratt, commandant of the Tactical School, ventured to suggest that the ACTS texts dealing with air subjects were accepted throughout the Air Corps as the guiding doctrine of tactical units, he was reminded by The Adjutant General that school texts were in no way to be considered an announcement of the official tactical doctrine

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or procedure; such official announcement appeared only in the field service regulations, training regulations, and field manuals.<sup>29</sup> As late as 1940, when the first Air Corps field manual FM 1-5, *Employment of Aviation of the Army*, finally appeared, the General Staff concept of the employment of airpower still prevailed; air operations were to be planned and executed in accordance with the over-all strategic plan for the surface campaign. The nearest the manual came to making a concession to the airmen's view that airpower could break the will of a hostile nation was the statement that the strategic air operations conducted by bombardment aviation are undertaken "to nullify the enemy's war effort or to defeat important elements of the hostile military forces."<sup>30</sup>

### **Clarifying and Refining the Bomber Concept**

Regardless of War Department official doctrine, the Tactical School, stimulated by the existence of the B-17, continued to expound its own concept of air warfare.\* For the immediate future, airpower was the primary weapon of destruction in war. By quickly and efficiently disrupting national life, it could achieve war's basic purpose—the submission of the hostile nation. Because airpower could leap over armies and navies to strike at the economic and social life of an enemy nation was obvious that war had changed its form. No longer did war need to consist of surface force against surface force. Since the tactics for precision bombing demanded accurate bombsights and daylight visibility, the school, emphasizing the value of the new bombsights, in the last five years of its existence switched whole-heartedly to the concept of daylight bomber operations. For defense against hostile pursuit attacks and for concentrated effect upon the target, tactics required formation flying; for protection in daylight against antiaircraft artillery, high-altitude operation was necessary. These concepts became standard for instruction purposes. Moreover, centralized control of airpower continued to be stressed. Concentrated action, independent of surface operations, was regarded as the most appropriate use of military aviation.

As for primary air force objectives, emphasis continued to be placed upon dislocating the enemy nation's structure through precision attacks against vital points. Creation of the GHQ Air Force in 1935 presented the school theorists with an offensive air striking force in being for whose

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\* This basic concept, which by 1935 was well established, remained firm throughout the remainder of the school's existence.

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employment they could plan. And despite the fact that national policy remained one of defense, and although the GHQ Air Force was viewed officially as a means of implementing that policy, instructors at the Tactical School proceeded to refine their theories and tactics of strategic attacks on the theoretical basis of eventually sending the GHQ Air Force against the interior of a hostile nation. Most instructors were convinced that the extreme accuracy required for knocking out small targets could be achieved with the improved planes and bombsights. They were just as firmly convinced that airpower should be employed against small vital targets during the initial phase of hostilities, because only in this way could a long costly surface war be avoided. Between 1935 and 1940 Lt. Cols. Harold L. George and Donald Wilson (who returned to the school in 1936), Majs. Muir S. Fairchild and Robert M. Webster, Lts. Haywood S. Hansell and Laurence S. Kuter, and other instructors attempted to determine just what those targets should be.

The Air Force text for 1935 noted that interlaced social, economic, political, and military divisions made up a national structure and that dislocation in one of these divisions would produce sympathetic disturbances of varying intensity in all of the others. The 1935 text emphasized target selection within the various systems be made on the basis of scientific advice. Such selection was essentially a problem for in economists, but there were no such specialists at the Tactical School, nor was money available to hire them. It was assumed, however, that the industrial structure of any great power would parallel that of the United States, and that conclusions drawn from an analysis of American industry might apply to any other highly industrialized nation. Therefore, instructors at the school, especially Fairchild and Webster, undertook an analysis of the American industrial structure with a view toward determining the geographic centralization of industry, the component parts of industry, the importance of the various parts, and the vulnerability to air attack of the most critical elements.<sup>31</sup> In short, during the years 1935-1940, instructors at the Tactical School surveyed American industry with the object of determining the points of vulnerability of industrial systems in general. In the course of conducting this survey, they not only established a method to be used in determining the vulnerability of industrial targets and selecting critical targets within a specific industrial complex, but they also considered the results desired in the light of the capability of available weapons.

The significance of the Tactical School's insistence on developing and teaching a concept of strategic air warfare is readily apparent. Although, from a practical point of view, American planes did not have sufficient range to reach the vitals of any major industrial nation, careful analysis was given to the whole broad field of strategic airpower. School instructors developed a doctrine of air employment in terms of general capabilities of

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the air weapon; they did not restrict themselves to the expressed national strategic policy, probable combinations of allies, or existing aircraft equipment. It was fortunate that the small group at the Tactical School did not allow themselves to be swayed either by the popular disillusionment with World War I or the strongly-held public view that American military strength should be designed solely for defense. Had air concepts been limited to defense of the American coast line, the Army Air Forces would not have had the theory, organization, or planes necessary for the planning and execution of the strategic air war of World War II.

### **Air-Ground Cooperation**

With the increase in emphasis on the strategic employment of the bomber, there was a decline in attention paid to air support of surface operations. Nevertheless, this phase of air force activities was never completely neglected; throughout the history of the school, instructors recognized that air operations in support of ground forces might be required. But by 1935 the Tactical School had adopted some advanced ideas of what constituted air support of ground operations. In reviewing a G-3 paper which set forth the General Staff concept that since success on the battlefield was the decisive factor in war all elements of the air force had important ground-support functions, ACTS took occasion to state its position on this point. The school held that whether it was a question of how the Army could best obtain security from enemy air operations or of how GHQ Air Force could furnish the Army with the greatest possible degree of support, the answer in either case must inevitably be by defeating the hostile air force. Any deviation from this line of action would invite disaster. To be sure, in any war against an enemy with an air force both the ground forces and the GHQAF would have the common purpose of defeating that enemy; but each had a distinct and separate objective and only by concentrating all the resources of each upon its proper objective could victory be assured. The idea of employing both ground forces and the GHQAF only against oppressing ground forces, and thereby defeating the enemy in detail, was viewed as an alluring but false doctrine. Once the air force had defeated the hostile air arm, its subsequent operations, by denying tactical concentration to the enemy, would automatically support the ground forces.<sup>32</sup>

This probably represented the most extreme school view on this subject. It is true that as concepts moved away from those derived from World War I experience toward the idea of an independent air mission, less emphasis was placed on aviation in support of ground troops. Nevertheless, a subsection of the Air Force course was entitled Aviation in

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Support of Ground Forces, in which by the mid-thirties, the concept was taught that gaining air superiority was the most valuable contribution the air force could make to the ground campaign; next in importance was attacking enemy lines of communications. Except in unusual situations, airpower was not to be employed against targets within range of friendly artillery; in an emergency, all or part of the air force might be diverted to support of ground troops. A cardinal point in the air philosophy expounded at the school was that airpower had to be centralized to be effective either in a close-support or strategic role. The school opposed, vigorously and vociferously, the assignment of combat elements of the air force to Army formations. It held that even when a segment of the air force was allotted to the task of close support it should be retained under the centralized control at theater level in order that its inherent flexibility might be exploited. Only under such a system could airpower in the proper amount be employed at the right place at the right time.

### **Impact of Bomber Concept on Theory of Air Superiority**

Although instructors continued to stress the importance of air superiority over surface operations the basic assumptions underlying the school's concept of the changed nature of warfare were in conflict with the earlier-held tenet of school instruction that air superiority was also a prerequisite to successful air operations. By 1935 ACTS had adopted the view that airpower, judiciously employed, could defeat an enemy nation. That year one lecturer in the Air Force course, in which the thoughts and ideas at the school were synthesized, made the point-blank assertion that the airplane was a weapon which could immediately reach the economic and political heart of a nation and thereby defeat that nation.<sup>33</sup> In short, airmen became obsessed with the idea that airpower could leap over opposing armies and navies and strike at the interior of a hostile nation without first having overcome the enemy's air force. The very nature of the air weapon, the vastness of the medium in which operated, and the invulnerability of the bomber (protected from pursuit by the mutual supporting fire from the close formation and greater speed—and from ground fire, and to a limited extent from pursuit, by altitude) precluded any pitched air battle. This fallacy, together with an overrating of the destructive power of the bomb, led them to the conclusion that airpower would force quick decisions in war without having to go through the time-consuming process of eliminating an opposing force. For a time there was recognition of the obvious conflict between the view that strategic airpower could be applied immediately upon the outbreak of hostilities and the view that air superiority was a prerequisite to successful air

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operations and therefore the first-priority mission of the air force. Authors of the counter-air section of the Air Force text noted that many authorities maintained that Clausewitz's principle that the defeat of the enemy armed forces was the only sure method by which one nation could impose its will on another was just as applicable to air as to surface forces; other authorities believed that the development of military aviation had provided the practical means of applying pressure against the nation itself. The latter group held that where the economic life of a nation was within the range of an enemy air force, no reason existed to doubt the ability of that air force to attack with devastating results. The authors listed as "the point at controversy" the question of whether the enemy air force should first be defeated, thus removing the only force that could successfully oppose the air offensive and permitting the unhampered application of pressure against the nation, or whether that pressure should be applied in the first instance, to the neglect of the hostile air force as an object of other than casual concern.<sup>34</sup>

Instructors at the Tactical School never fully resolved the issue. The increased range and performance of bombardment aircraft had convinced them that control of the air, in the sense that control of the air was maintained by one side or the other in World War I, would be impossible in future warfare. Since it would seldom be practicable to clear the air of enemy pursuit before driving home the offensive of the striking force, control of the air was considered a defensive operation. The battle for air mastery, to the extent that any such battle might be fought, was to be a battle of pursuit vs. bomber over friendly territory.<sup>35</sup> From about 1935 until 1937 or 1938, instructors recognized that the limited range of aircraft and lack of "properly placed" strategic air bases precluded an immediate attack by American airpower against the interior of any probable enemy nation. As long as that condition obtained, the American air arm would not be faced with the problem of making a choice between attacking a hostile nation's air force and mounting an offensive against that nation's economic structure. An aggressor nation was expected to direct initial attacks against the industry of the United States and thus to place the United States air arm on the strategic defensive.

As to the all-important question of whether the strategic campaign should be directed first against the hostile air force or against a hostile nation's economy, it is certain that by 1939 the consensus at the Tactical School favored the latter course. By that time it was assumed that the United States would engage in the next war in a coalition with other nations which might furnish the American air arm with the bases required for carrying out the strategic air campaign.<sup>36</sup> If such conditions prevailed there was no doubt that attacks against an enemy's economic structure should take precedence over counter-air force operations. Friendly nations



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might suffer initially from the enemy's forces in being, but a strategic air offensive directed against vital industrial targets combined the advantages of striking the enemy national structure objectives and the armed force objective. Since no nation could afford to maintain in reserve the supplies, munitions, replacement equipment, and the like to offset the consumption demanded by war, a strategic air offensive designed to destroy "machines that make the machines and so destroy whole generations of machines" not only would render the armed forces in being ineffectual but would also have repercussions on the civilian population. The industrial capacity which provided the means of war to the armed forces and the industrial capacity which provided the means of sustaining normal civilian life were not separate, disconnected entities, but were joined at many vital points. Elements common to both, such as electric power, might be rendered inoperative at a single blow. Major Fairchild noted in 1939: "The nationwide reaction to the stunning discovery that the sources of the country's power to resist and to sustain itself are being relentlessly destroyed, can hardly fail to be decisive."<sup>37</sup> Instructors believed that this could be accomplished without first having to win air superiority.

The concept that the strategic air war against the industrial fabric of a nation could and should begin immediately upon the outbreak of hostilities at the expense of a counter-air campaign was based on pure theory. Air operations in Ethiopia, China, or Spain had little to offer in the way of experience in strategic air warfare; the Battle of Britain had yet to be fought when classes at the Tactical School were suspended. The falseness of the theory would be proved only through actual experience in a war against a highly developed industrialized nation.

### Changing Concept of Pursuit Employment

The changing concept of pursuit employment was closely parallel to and vitally affected by the changing concept of air superiority. Because its primary mission was to gain and maintain air superiority, until about 1926 pursuit was considered the basic arm of the air force. Although at this time replaced in importance by bombardment, pursuit continued to be considered an important offensive weapon. Its chief value still lay in its ability to operate against the hostile air force either on offensive sweeps or while accompanying friendly bombers and attack aircraft. As late as November 1933 the school announced that it would continue to recommend the development of a fighter capable of accompanying bombers and furnishing protection from hostile pursuit.<sup>38</sup>

After 1932, however, pursuit went into a decline. Pursuit instruction reached its all-time low during the period from 1934 to 1936.<sup>39</sup> The sudden

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decline in pursuit is accounted for chiefly by the appearance of the B-9, B-10, and B-12 high speed bombers in 1933 and 1934. Moreover, in 1933 proposals were distributed among manufacturers for a multi-engine bomber even more advanced than the current models. During the same year Col. John F. Curry gave concise expression to the problem which improvements in bombers presented to the Tactical School:

... the more important our targets are the more determined will be their defense and we can expect to have our formations opposed by interceptor pursuit. This opposition will be encountered beyond the radius of our present single-engine pursuit unless we are willing to confine our operations to that limited radius. It is probably impossible to determine accurately how much pursuit opposition will be encountered, and it is most difficult to determine from the effort so far expended, how much of such opposition a defensive formation can withstand. But it is unthinkable to confine our aerial operations to the limited range of present pursuit aviation. Furthermore, it is obvious that we must return a large proportion of our formation from any particular mission, so that it will be available for further operations. The questions to be determined are: is protection of our formation necessary, and (if so) what should be the proportion between a given number of planes available, how can we deliver the greatest amount of high explosives?<sup>40</sup>

The first thing to decide, according to Colonel Curry, was the mission of pursuit. If it was decided that bombers would require pursuit escort, then pursuit would have two functions: protection of bombers and interception of hostile formations. At that time the possibility of developing a multi-seat pursuit aircraft was under consideration, but it was immaterial, thought Curry, what form the airplane took so long as it was the most efficient for the jobs. And the school commandant made the observation, which was contrary to the belief of many of his colleagues, that once pursuit's function had been definitely determined, it should not be difficult to produce the most efficient aircraft for the accomplishment of that function.<sup>41</sup>

Despite Curry's optimistic view, interest in pursuit was already on the decline. Maj. Gen. Claire L. Chennault, USAF Ret., who as a captain taught pursuit at the school from 1931 through 1936, quotes an air umpire of the 1933 exercises at Wright Field as having said that "due to increased speeds and limitless space it is impossible for fighters to intercept bombers and therefore it is inconsistent with the employment of air force to develop fighters."<sup>42</sup> Moreover, in the same year Pacific coast maneuvers (which Chennault charged at the time with being rigged in favor of the bomber) indicated to many that available pursuit aircraft were no match for the bombers, the test having been between the P-26 pursuit (the Air Corps'

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earliest and already outmoded standard all-metal monoplane fighter) and the B-12 (the Air Corps' most modern bomber). At the Tactical School the bomber enthusiasts had begun to consider pursuit simply a defensive weapon.\*<sup>43</sup>

The decline of interest in pursuit was accelerated by the appearance of the B-17 in 1935. To be sure, Captain Chennault, as long as he remained at the school, fought stubbornly to maintain pursuit as a vitally important element in the air force. But Chennault's arguments paled before the impact of the B-17. Given the proper strategic bases, B-17's could strike within the interior of a hostile nation, and attack either the air force or vital industrial targets, preferably the latter. No pursuit existed that could keep pace with the bombers in the execution of such missions; as far as most instructors were concerned, because of engineering reasons, none could be produced.<sup>†</sup> Hence, pursuit instructors following Chennault tended to define the role of pursuit in terms of the capabilities of existing aircraft.

Although relegated to an inferior place in the scheme of air force employment, pursuit continued to be taught at the school. Its chief function, however, had been altered from that of gaining air superiority to one of defending civilian and military centers and aircraft in flight-interception and escort. Because of pursuit's limited range, however, its operations would consist almost wholly of interception missions, and even there, range limitations would force pursuit to await the enemy bombers, not seek them out. "In a word it becomes a defensive force."<sup>44</sup> Although, more actual hours were devoted to pursuit each year after 1937 than in any of the previous three years,<sup>45</sup> the basic concept of pursuit as a defensive force continued to be stressed through the last session of the school. Instructors at ACTS have been criticized for not sensing the need for a long-range escort plane. From an over-all point of view the lag in pursuit development can be accounted for, in part by the shortage of funds for aircraft development and the belief that bombardment should be given priority and in part by the generally held belief that a long range pursuit plane would lose the necessary air fighting characteristics. As late as May 1939 the Air Corps Board indorsed this view in a study of the employment

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\* See above, p. 67, for school view of the improbability of engineers being able to produce a pursuit equal to the bomber.

<sup>†</sup> An unidentified instructor took issue with this view. In reviewing a paper prepared by Lt. Col. Donald Wilson, in which the latter attempted to set forth a basis for pursuit instruction, this critic wrote: "The school seems to feel that accompanying pursuit is not practicable, Again I do not concur." (See, memo for Harmon from Wilson, 1 May 1939, and attached papers.)

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of aircraft in the defense of the United States. Such reasons, however, do not explain why school theorists did not see the requirement. Possibly had they insisted that the strategic air war would be dependent on fighter escort for the bombers, the engineering difficulties in producing such a plane would have been overcome sooner. It seems that their lack of emphasis on fighter escort was due in large measure to the fact that they did not know exactly how the air phase of the next war was going to be fought. They visualized masses of bombers flying over hostile territory to vital targets within the interior; they noted that pursuit probably would be concentrated around certain targets; they hoped that, because of the vastness of the air, bombers might cover a considerable amount of the distance to a target without being detected, or if detected might avoid combat; but on the crucial issue of what happened when a bomber formation was opposed by hostile pursuit, it can only be concluded that there was some sketchy thinking.

## Discontinuance of Air Corps Tactical School

### Planning for Short Courses

Because the Air Corps Tactical School was limited to a yearly capacity of 60 to 70 students by the mid-thirties the feeling was growing that it was not reaching a sufficient number of Air Corps officers. Late in 1938, Maj. Gen. Henry H. Arnold, Chief of Air Corps, directed that a study be made to determine whether it would be feasible to suspend the regular nine-month course and institute a series of short courses in order to permit a greater number of officers to attend the school. A study incident to this directive revealed that in the Air Corps there were 425 officers over the age of 32 who were not graduates of ACTS. Since officers 32 years of age and over constituted the group of senior officers who were becoming eligible for responsible assignments, it was considered highly desirable to give all suitable officers in this category an opportunity to attend the school. In view of the large number of officers already in this age bracket who were not Tactical School graduates—a number which would be increased yearly—it was felt that a scheme should be adopted to train these officers in the shortest possible time. Accordingly, the Tactical School recommended that the regular course be discontinued for the school year 1939–1940 and that there be substituted three special 12-week classes, each with 100 Air Corps students drawn from the current list of officers over 32. The advantages were numerous. In one year a majority of all suitable officers over the age of 32 would have been given at least a short course at the school; by the end of that year no more than 100 Air Corps officers in this age bracket would remain as nongraduates, and these could be given training within three years after the school resumed its

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normal course.\* The maximum number of officers removed from their regular duties at any one time would be 100; the faculty would require no increase in order to operate efficiently; facilities were sufficient to care for 100 students.<sup>1</sup> Only one year would elapse between the discontinuance and resumption of the regular course.

School authorities recognized that such a plan had certain disadvantages. A limited 12-week course could not give the students the detail included in the regular course. Suspension of the regular course for a year would cause some loss of efficiency when it was resumed. Nevertheless, school authorities felt that if the faculty were left intact for the short courses and its members had no other responsibilities, if the curriculum were adjusted in some slight particulars and advantage taken of Saturday mornings, and if classroom instruction continued throughout the afternoon in lieu of flying, a good, sound course could be given during the abbreviated period.<sup>2</sup> In considering the proposal, Lt. Col. Donald Wilson, director of the Department of Air Tactics and Strategy, noted that "The Air Force picture for a *fundamentally sound basis of employment*" should be the chief emphasis of the courses. He considered this "the only thing we can give which can be obtained at no other place." He noted, too, that faculty personnel was the most critical issue and that the transfer of some instructors, notably Muir S. Fairchild and Laurence S. Kuter, might be a serious blow to the short-course program.<sup>3</sup>

The school recommendations were approved with the modification that there should be four rather than three short courses. The four courses of 12-weeks each were conducted from 1 June 1939 through 30 June 1940, during which time officers were graduated: 380 Air Corps officers, 16 officers of other branches of the Regular Army, 1 Marine Corps officer, 1 Naval officer, and 2 foreign officers.<sup>4</sup>

The curriculum for the short sessions was substantially the same as that for the regular nine-months session but the total number of hours was reduced from 712 hours to 298 hours. The abbreviated courses consisted of the Air Force, Attack,<sup>†</sup> Bombardment, Pursuit, Reconnaissance, and Naval Operations in the Department of Air Tactics and Strategy; Combat Orders, Communications, Logistics, Military Intelligence, Staff Duties, and Observation (which was transferred from Air Tactics and Strategy) in the

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\*The study assumed that the number of 125 would be reduced to less than 100 by retirement, resignation, etc.

<sup>†</sup>In December 1939 in compliance with a minor recommendation of an Air Board appointed by the War Department to study the entire field of military aviation, the Attack Section was renamed the Light Bombardment section. (See, ACTS School Circular No. 10, 1 Dec. 1939, in 248. 125, 1935-1940.)

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Department of Command, Staff, and Logistics; Antiaircraft, Cavalry, Chemical Warfare, Ground Tactics, Field Artillery, Infantry, and Map Reading in the Department of Ground Tactics.<sup>5</sup>

### **Suspension of the School**

Early planning for the short courses was based on the assumption that the regular nine-month course would be resumed immediately upon their completion. Before plans for the short courses had been consummated, however, the Tactical School was asked to make a study of possible reduction of its activities during the initial phases of the Air Corps expansion program which began in January 1939. The Air Corps was faced with the problem of providing qualified officers for responsible positions during the period of expansion and at the same time of continuing its normal administrative and operating functions. Obviously, faculty members at the school and school graduates were particularly well equipped to fill special assignments in the expansion program. It was equally obvious that if the school were closed completely for one year, several years would be required to rebuild it to its current efficient status. The problem posed, therefore, was how the school could make a substantial contribution of experienced, well-trained officers to the expansion program and at the same time maintain a staff large enough to keep current all phases of school activities. The school study concluded that the school should not cease to function altogether. The course should continue to be 9 months long, but the faculty should be reduced by 6 members and classes should be reduced from the current 60 Air Corps officers to 20, thereby freeing 46 Air Corps officers from school duty.<sup>6</sup>

The outbreak of war in Europe in 1939 sealed the fate of the Tactical School. Requirements for officers in the tremendous expansion program which followed that event were far too great to permit the experienced, well-trained officers who were the framers of air force concepts at the Tactical School to follow their academic pursuits. The series of 12-week courses were allowed to reach completion, but on 13 June 1940 OCAC directed that instruction at the school be suspended as of 30 June and the staff and faculty be reduced to five Air Corps officers and two from either branches. During the suspension, the skeleton staff was to be concerned with:

- Preparation, revision, and editing of Army Extension Courses in accordance with approved War Department programs.
- Continuation of collaboration with the Air Corps Board.

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- Continued research in tactical air doctrine and the employment of air forces, with a view to keeping abreast of modern developments and applications of air power.
- Maintenance of files in a manner to facilitate prompt institution of courses at such time as it is decided to open the school.
- Preparation of specialized correspondence courses on tactical subjects for the instruction of junior Air Corps officers.
- Continued operation of the reproduction plant as required to meet the demands of the service for Air Corps Tactical School publications.<sup>7</sup>

When classes were suspended, it was assumed, both by the skeleton staff and the OCAC that instruction would be resumed as soon as possible. In fact, in June 1941 when the school was placed under the jurisdiction of the Southeast Air Corps Training Center, the commanding general of the center was directed to complete a study of the ways and means by which the school could be re-opened with a minimum of delay.<sup>8</sup> This study, submitted to the Chief of Air Corps on 29 July 1941, reflected a somewhat changed concept of the school. The course to be established was to be known as the Basic Course, Air Force Tactical School. Its purpose was to train flight and squadron leaders, squadron staff officers and junior group staff officers in tactical duties incident to combat operations. On the basis of a 10-week course, instruction was planned for 2,000 junior grade officer pilots per year, with provision for increasing this number to 5,000 per year by September 1942. The course would include instruction in tactics of each type of combat aviation staff duties, administration and logistics of the group and smaller units, tactics of air force units in support of ground forces, and tactics of the air forces in independent offensive and defensive operations. In short, the old mission of the school of training senior officers for high command and the acquired mission of serving as a doctrinal center for the air arm had been lost.<sup>9</sup>

In the summer of 1941 the final disintegration of the school occurred. Before the end of the summer, the Air Corps Board had been moved to Eglin Field to become a part of the Proving Ground. The school also lost its reproduction department and training film preparation unit.

The skeletonized academic section was moved to Washington and placed under the Directorate of Individual Training. Because the library did not move, the staff was deprived of its facilities. Despite this and a shortage of personnel the staff produced training literature urgently needed by the AAF, maintained the school files, and tried to keep the courses of instruction in such condition as to facilitate preparation of lectures in the



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event the school should be reopened. In June 1942 Lt. Col. John A. Greene, acting commandant, urgently recommended the reopening of the school at the earliest practicable moment.<sup>10</sup>

### **Establishment of AAF School of Applied Tactics**

In the meantime there had been a trend away from the Tactical School idea. As early as 1933 the commandant of the school, Lt. Col. John F. Curry, urging the establishment of a real tactical center, had written:

The present system of tactical research in our Air Corps seems to be trying out of ideas in a particular unit and the formulation of a particular doctrine for that unit. As there are many different commanders, the doctrine varies throughout the service, and in the same units may change when commanders are changed. Much of this doctrine is founded on the particular ideas of an individual man and not based on the research and study from which should grow such doctrine. There should be in the Air Corps some clearing-house into which tactical ideas can flow where they can be tried and where the doctrine can go out to the service to be put into practice and be evaluated. It is clearly recognized that there can be no fixed solution to the problems involved in air warfare, and that changing conditions will result in frequent modifications. This emphasizes the necessity for establishing a research center.<sup>11</sup>

Colonel Curry believed that with the physical plant already established and the faculty gathered, the Tactical School might well serve as the nucleus for the center. This idea gained momentum over the years. Col. Walter R. Weaver, commandant of the school during its last year at Maxwell, made a similar recommendation, and with the outbreak of war the idea gained favor in AAF headquarters. There obviously was a need for one center at which the thousands of totally inexperienced future combat leaders could be trained in all aspects of air warfare. Therefore, instead of reopening the Air Corps Tactical School, AAF headquarters on 9 October 1942 authorized the establishment of the new AAF School of Applied Tactics, which was activated on 27 October at Orlando, Florida.

The new school did not completely fill the gap left by the passing of the Tactical School. True, the AAF Board was established at Orlando as an adjunct to the school (but under the jurisdiction of the Commanding General, Army Air Forces). And undoubtedly the school considered many of the same types of problems as had been handled by the Tactical School. But the new organization was a wartime agency concerned chiefly with the multitude of problems connected with global air war; theories of the

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employment of airpower were less important than the evaluation and analysis of current combat experiences as a means of determining the method of future operations. Only at the end of the war would airmen be able to resume the process of theorizing.

### **Establishment of the Air University**

Just as had been the case at the close of World War I, immediately after the end of World War II airmen began planning for a thorough professional education for air officers. Air leaders of the future very obviously would be needed. More important, World War II had pointed far more clearly than had World War I to the potentialities of the air weapon and to the need for a careful analysis of the war experience, and, in the light of that experience, for a reinvestigation and reevaluation of the whole broad question of military aviation in the national defense structure, both in peace and in war. In considering the requirements for an Air Force educational system, airmen took note of the pre-World War II Air Corps problems which resulted from the absence of separate facilities for training junior and senior officers and the division of doctrinal, educational, and various agencies. Thus, when the Air Force set up its post-World War II educational system, it established a unique military educational institution, the Air University, which within one integrated school system presented a coordinated program of professional education for United States Air Force officers. The Air University fell heir to the purpose and tradition of the old "Tac School." Like its predecessor, the new institution's program was "planned to equip officers with the knowledge and skills necessary for assuming progressively more important assignments in command and staff positions through the Air Force;" and its motto, *Proficimus More Irretenti*, was adopted from the Tactical School.

There are notable differences between the Tactical School and the Air University. ACTS was a single institution which offered instruction in command and staff functions, intelligence, logistics, the tactics and techniques of the various classes of aviation, theories of the employment of the air force, and the tactics, techniques and doctrines of the other services, plus many other subjects; at the Air University the fields of study are divided among its various colleges. Except during the four short courses which were attended by 100 officers each, classes at ACTS never exceeded 60 students; students numbering in the thousands pass through the Air University's colleges and special courses each year. But aside from the difference in the size and scope, another significant difference between the two institutions lies in the fact that while the Tactical School's work in

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developing a concept of air force employment lay outside the pale of its official function, the Air University since its inception has been recognized as the doctrinal, educational, and research center of the Air Force.

The air experience of World War II presented instructors at the Air University with more definite ground on which to base their judgments of the employment of the air weapon than their counterparts at the Air Corps Tactical School had enjoyed yet when the time came to resume the process of theorizing and of determining doctrine for air force employment, the value of that experience diminished before the impact of new types of aircraft and new weapons. Thus, the faculty of the Air University has had to be just as much concerned with the theory of war, the problems of bomber versus fighter, the effectiveness of bombs, and the question of air superiority as were instructors at ACTS.

# Notes

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## Chapter 1

1. William A. Ganoe, *History of the United States Army* (New York, 1942), p. 78.
2. *Ibid.*, Emory Upton, *The Military Policy of the United States* (Washington, 1917), p. 90.
3. Ltr, George Washington to Maj. General Alexander Hamilton, 12 Dec 1799, in John C. Fitzpatrick, *The Writings of George Washington from the Original Manuscript Sources, 1745-1799* (Washington, 1931-44), XXXVII, 473.
4. Quoted in Upton, *The Military Policy of the United States*, p. 90; Col. Oliver L. Spaulding, in *The United States Army in War and Peace* (New York, 1937), p. 122 states that General Knox proposed the establishment of a military academy as early as 1776.
5. Spaulding, *The United States Army*, p. 154.
6. Charles DeF. Chandler and Frank P. Lahm, *How Our Army Grew Wings* (New York, 1943), pp. 194-243; 259-75; Interview with Brig Gen Thomas DeW. Milling, USAF Ret, by author 29 Jun 54.
7. Quotations in this paragraph cited in Isaac D. Levine, *Mitchell: Pioneer of Air Power* (New York, 1943), pp. 92-97.
8. *Ibid.*, p. 129.
9. *Ibid.*, pp. 128-29.
10. Final Report of the Chief of Air Service, AEF to the Commander in Chief, AEF, p. 11; Levine, *Mitchell*, p. 132; Clayton Bissell, Brief History of the Air Corps and its Late Developments, 1 Jan 27, pp. 55-60; Craven and Cate, eds, *The Army Air Forces in World War II*, I (Chicago, 1948), 14.
11. Final Report, Chief of Air Service, pp. 9-13; Bissell, Brief History of Air Corps, pp. 61-63; ACTS text, Attack Aviation, History and Development, 12 Dec 1935; GHQAEF 2d Sec, General Staff Summaries of Air Info 47, 17 Sep 18, and 68, 8 Oct 18.
12. *AAF in World War II*, I, 14.
13. Col E. S. Gorrell, Early History of the Strategic Section, Air Service, n.d., in History of the Air Service, AEF, Vol 6B, pp. 371-400, in National Archives.
14. It was believed at the time that in the lower commissioned grades the Air Service would be composed of personnel whose period of active duty would be limited to about three or four years and there would be 300 to 400 of such officers to be replaced each year. (see WD, Off. Direc. of Air Service, Pamphlet 12, Comments on Strength, Organization and Training of the Air Service, 19 Oct 19, in 167.41-3) [except where otherwise noted, all file numbers refer to the Archives of the USAF Historical Division, Maxwell Air Force Base, Ala.]
15. *Ibid.*
16. Air Historical Study 13, The Development of Tactical Doctrines at AAFSAT and AAFTAC, p. 6; The Army Air Service School of Application. in 167.4-5. Internal evidence indicates that this is a copy of the 1919 proposal made by the Director of Air Service for the establishment of an Air Service School. AHS-13 cites a letter, Director

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- of the Air Service to TAG, 21 Oct 19 (AAF 352.9 Tactical School), in which the director requested authority to establish the school.
17. The Army Air Service School of Application.
  18. The other schools were: two Air Service Pilot Schools (one at Carlstrom Field, Arcadia, Fla., and the other at March Field, Riverside, Calif.); Air Service Pursuit School, Air Service Bombardment School, Air Service Observation School (a course for communication personnel was also authorized for this school); Air Service Engineering School (a course for enlisted storekeepers also authorized for this school); Air Service Mechanics School for enlisted men; two Balloon Schools (one at Ross Field, Arcadia, Calif., and one at Lee Hall, Va., with a course for enlisted balloon-mechanics authorized for each); and an Airship School (a course for enlisted balloon-mechanics also authorized for this school). See ltr, TAG to Director of Air Service, 25 Feb 20.
  19. *Ibid.*
  20. Maj T. D. Milling, *The Air Service Tactical School, Its Function and Operation*. Sep 24 (in writer's possession). Although originally designated as the Field Officers' Course, before the school opened in the fall of 1920, the name Field Officers' School was in use. On 3 Apr 20, Brig Gen William Mitchell, in a letter to the commanding officer, McCook Field, referred to "the Air Service Field Officers' School." See ltr, Mitchell to CO McCook Field, 3 Apr 20, in 203.6 v.2, 1916-1947.
  21. Ltr, C/AS to CO Langley Fld., 30 Oct 20; ltr, C/AS to Comdt. Air Service Schools, Langley Fld., 15 Jun 21, and 1st ind thereto, Comdt. Air Service Schools to C/AS, 17 Jun 21; *Army Register*, 1921.
  22. John D. Barker, *History of the Air Corps Tactical School*; Milling, *The Air Service Tactical School*.
  23. One source indicates that classroom instruction stopped "early in the spring"; others indicate the classroom work continued until May. All agree that the school year was cut short. See, Milling, *The Air Service Tactical School*; ltr and ind, cited in n. 19; Barker, *ACTS*, pp. 5-6; Lt Col J. W. S. Wuest, *History of Langley Fld., Va., 1916-31 Dec 29*, p. 16.
  24. Barker, *Hist. ACTS*, pp. 45.

## Chapter 2

1. Ltr, OCAS to Capt T. D. Milling, 21 Feb 21, in 248.192, 1921; ltr, Milling to Comdt., 20 Jun 23.
2. John D. Barker, *History of the Air Corps Tactical School*, p. 7; Wuest, *History of Langley Fld.*, p. 21; Milling, *The Air Service Tactical School*. Official change of the name was reported in AR 350-105, 8 Nov 22 and OCAS Cir. 101, 20 Nov 22.
3. These changes were incorporated in a course of instruction drawn up by a War Department board appointed to prepare programs of instruction for the general and special service schools. The board was composed of representatives from the General Staff, Coast Artillery, Cavalry, Infantry, Field Artillery, and Air Service. Maj William C. Sherman, assistant to the officer in charge, ASFOS, represented the Air Service. See *Report of Board of Officers Appointed to Prepare Programs of Instruction for the General and Special Service Schools*, n.d., in 248.122-7.
4. *Ibid.* The course of instruction approved by the War Department was for the Air Service Tactical School, *not* Air Service Field Officers' School. Interestingly a course in equitation was added, because "every officer of the Army is a potential commander or staff officer . . ." See ltr, Earl L. Naiden to Asst. Comdt, ASTS, 30 Jun 24.
5. Rpt cited in n. 3.

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6. Ltr, TAG to Chief of all WD Branches and Bureaus and others, AG 352.01 (7-17-23 and 7-19-23) M-C, subj. Program of Instruction of Air Service Special Service Schools, 24 Aug 23, in 248.192; ltr, T. D. Milling to Comdt. ASTS, 30 Jun 23, in 245.111.
7. As long as the school remained at Langley, having the post commander be the school commander caused considerable confusion, since school matters were frequently handled by the post adjutant, or in the office of the commanding officer, without reference to the school proper. See ltrs, Earl L. Naiden to Asst. Comdt. ASTS, 30 Jun 24; T. D. Milling to Comdt. ASTS, 30 Jun 24; OCAS to Comdt. ASTS, 27 Aug 24, all in 245.111, 1923-24; memo for Comdt. ASTS from T. D. Milling, 20 Jun 24, in 248.12602; Wuest, History of Langley Field.
8. Ltr, Milling to Comdt. ASTS, 30 Jun 24, in 245.111.
9. Annual Rpts, ACTS, 1921-40, in 245.111; The Air Corps Tactical School, an unsigned and undated brief history of the school from 1920 through 1940, in 245.01B; A History of Maxwell Field, 20 Feb 1910-31 Dec 1938 (in a History of Maxwell Field, Third Installment, Appendixes I and II, in 286.263, Vol. III), 571-72.
10. Ltr, H. F. Rouse, librarian to officer in charge, 30 Jun 23, in 245.111. See also Books and Publications on File in Field Officers; School Library, 1 Feb 21, in 248.161.
11. Ltr, Naiden to Comdt., 23 Jun 26.
12. 1st ind (ltr, C/AS to Comdt., Air Service Schools, 15 Jun 21) Comdt. to C/AS, 17 Jun 21.
13. Ltr, Earl L. Maiden to Comdt., 26 Jun 26, in 245.111.
14. History, Langley Fld., Inception to 1 March 35; 1st ind (ltr, ODAS to Comdt., Air Service Schools, 15 Jun 21) Comdt. to C/AS, 17 Jun 21. See also, ltr, Lt Col C. C. Culver to C/AC, 30 June 29.
15. Quoted in History of the Army Air Forces Board, Pt. I, p. 1, in 246.6-1.
16. Ltr, Comdt. to C/AS, 30 Jun 24.
17. OCAS stated in 1924 that "the first and... most important duty of the Board is the preparation of Air Service Correspondence Courses and Training Regulations which are used as texts in these courses. For the purpose of accomplishing the correspondence school work, a Correspondence Section will be formed within the Board..." (See ltr, Maj W. G. Kilner, exec. OCAS to CG Langley Fld., 15 Sep 24; OCAS Personnel Orders 28, 15 Sep 24; Memo for Lt Burt from Maj O. Westover, 17 Sep 24, all in 3-2580-3. See also, ltr, Maj O. Westover to C/AS, 14 Jul 24, in 245.111; Hist. AAF Board, Pt. I, pp. 1-2).
18. Ltrs, Earl L. Naiden to Asst. Comdt., 30 Jun 24; T. D. Milling to Comdt., 30 Jun 24; Comdt. ASTS to C/AS, 30 Jun 24, all in 245.111, 1923-24.
19. Ltr, OCAS to Comdt., ASTS, 27 Aug 24, in 245.111.
20. Ltrs, Maj Earl L. Naiden to Comdt., 30 Jun 25; Maj W. H. Frank to Comdt., 30 Jun 30, both in 245.111. In his Annual Report of the year before, Major Frank had pointed out that "The number of instructors required depends not so much on the size of the student body as upon the amount of instruction to be given, the number of problems to be prepared, and most of all upon the amount of work and research necessary for preparation of courses." (See ltr, Frank to Comdt., 26 Jun 29, in 245.111.)
21. Ltr, Milling to Comdt., 30 Jun 24, in 245.111.
22. Ltr, Naiden to Comdt., 30 Jun 25, in 245.111.
23. Annual Rpts, ACTS, 1925, 1926, 1927, 1928, 1929, in 245.111.
24. Annual Rpt C/AS for the Fiscal Year Ending 30 Jun 21, 4 Oct 21, p. 17.
25. Ltr, Frank to Comdt., 30 Jun 27, in 245.111.
26. Interestingly, the chapter on attack aviation was reviewed and amended in certain particulars by Maj G. C. Marshall, Jr., Infantry. (See ltr, Marshall to Maj William C. Sherman, 20 Jan 22, in 248.101-4A Draft).
27. See lecture, Aeronautical Engineering by Prof. F. H. Norton, NACA presented during the Engineering course, Air Service Field Officers' School in 1922, in 248.2002-3, 1922.
28. Ltrs, Naiden to Asst. Comdt., 30 Jun 24; Comdt., ASTS, to C/AS, 10 Feb 24; and WD [probably TAG to C/AS], 13 May 25, cited in ltr, Naiden to Comdt., ASTS, 30 Jun 25.

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29. Milling, *The Air Service Tactical School*; Barker, *Hist. ACTS*, p. 9; ltr, Comdt. to C/AS, 30 Jun 24.
30. See *Annual Rpts, Comdt., Asst. Comdt., and Direc. of Instr., ASTS, 1923-31*, in 245.111.
31. Ltrs, Maj W. H. Frank, Asst. Comdt., to Comdt., *ACTS*, 30 Jun 30; Maj John F. Curry, Asst. Comdt. to Comdt. *ACTS*, 30 Jun 31, in 245.111.
32. Ltrs, Earl L. Naiden to Comdt., 30 Jun 25 and 23 Jun 26, both in 245.111.
33. *Annual Rpt, ACTS, 1928*, in 245.111.
34. *Annual Rpt, ACTS, 1930*, in 245.111.
35. Ltr, Maj John F. Curry, Asst. Comdt. to Comdt. *ACTS*, 30 Jun 31, in 245.111.
36. School authorities objected because 1) the fog on New York harbor would make flying impossible during more than half the winter; 2) flying was made hazardous by real estate developments on three sides of the field and by Rariton Bay on the fourth side; 3) no suitable site for a bombing and gunnery range existed in the vicinity; 4) there were no Air Corps tactical units nearby with which the school could cooperate in carrying out its tactical instruction; 5) construction estimated in the neighborhood of \$500,000 would be required to provide facilities for the school and its equipment. (See ltrs, OCAC to Comdt. *ACTS*, 15 Aug 27; OCAC to Comdt. *ACTS*, 21 Jun 28, and 1st ind thereto, *ACTS* to OCAC, 26 Jun 28, all in 248.12606, 1927-31.)
37. The exact date on which Maxwell Field was chosen as the new site for the school has not been determined. *Hist. Maxwell Fld.*, 20 Feb 10-31 Dec 38, states that the decision was made in 1929. This obviously is in error, for in Dec 28 Maj Walter R. Weaver, commanding officer at Maxwell, wrote Maj Walter H. Frank at the school at Langley: "I believe with some money you could patch things up around here so as to move in this summer." (See ltr, Weaver to Frank, 17 Dec 28, in 248.12606, 1927-31). Moreover on 18 Jan 29 OCAC appointed a board of officers to take "the necessary steps to arrange for the donation of additional ground required for the Air Corps Tactical School at Maxwell Field, Montgomery, Alabama." (See OCAC Personnel Orders 15, 18 Jan 29, in 248.12606.) Untitled and undated report of Board Appointed by OCAC Personnel Orders 15, 18 Jan 29, sgd Maj Frank M. Kennedy and Walter R. Weaver and Capt W. D. Farthing; ltrs, OCAC to CG *ACTS*, 15 Jul 30; Walter [Weaver] to Jack [Maj John F. Curry], 3 Apr 31, all in 248.12606. Apparently the tract amounted to 737 acres. See *A History of Maxwell Field, 1910-1938*, p. 512.
39. In Dec 28 Major Weaver wrote Major Frank at Langley that there was one large building with approximately 70,000 square feet of floor space, the aero repair building, which although in a dangerous condition "could be jacked up" and be repaired. Another building, formerly an enlisted men's club, with 5,000 square feet of floor space was available as were "five vacant hangars, two vacant Barracks, and one vacant Mess Hall." Major Weaver conceded, however, that "it would be very much better if funds could be secured and new buildings put up." (See ltr, Maj Walter Weaver to Maj W. H. Frank, 17 Dec 1928, in 248.12606.)
40. *WD Bul. 5*, 3 Apr 1930.
41. Maj Walter R. Weaver, commanding officer at Maxwell, and Maj John F. Curry, assistant commandant of the school at Langley and who was to become commanding officer of Maxwell and commandant when the school moved, during 1929-1931 carried on steady correspondence regarding both the construction program and the layout of the field. A file containing many of these letters, as well as many others dealing with construction at Maxwell for the school is in 248.12606, 1927-31. See also *A History of Maxwell Field, 1910-38*; ltr, OCAC to CO *ACTS*, 15 Jul 30.
42. See correspondence and papers relating to the Maxwell construction program in 248.12606 and *A History of Maxwell Field, 1910-38*.
43. See n. 41.
44. Ltr, Lt Col C. C. Culver to C/AS, 19 Apr 29, in 248.12606; *Annual Rpt of the C/AC, 1929*, 19 Aug 29, p. 42; ltr, Lt Col C. C. Culver to C/AC, 30 Jun 29, in 245.111.
45. Ltrs, TAG to CG 3d Corps Area, 15 Apr 31, and TAG to CG 4th Corps Area, 15 Apr 31; *A History of Maxwell Field, 1910-38*; Wuest, *Hist. Langley Fld.*

## Chapter 3

1. A History of Maxwell Field, 1910-1938, pp. 555-66.
2. Annual Rpts, ACTS, 1929 through 1941, in 245.111; Geraldine V. Carlisle, The Air Corps Tactical School Library, Maxwell Field, Alabama, paper read before the Alabama State Library Association at Birmingham, Ala., 27 April 1934, in 248.111.
3. In the summer of 1935 a bombing and gunnery range was established near Valparaiso, Florida. Each autumn thereafter, through 1939, the entire student body spent two or more weekends at the range to engage in bombing and gunnery exercises. For the next three years the students spent an entire week in April or May at the range to carry out exercises which included field training in the courses on staff duties and navigation. Ltr, Lt Col Wm. Ord Ryan to CG 4th Corps Area, 17 Jun 35, and 1st, 2d, 3d, and 4th inds, in 145.91-367; A History of Maxwell Field, 1910-1938, pp. 166-67; Annual Rpts, ACTS, 1936-39.
4. Memo for C/AC from Lt Col J. E. Chaney, 21 Oct 32; memo for C/Plans Div. from Maj W. H. Frank, C/Sec. III, Plans Div., 16 Mar 33; memo for AC/AC from Maj. A. N. Duncan, 13 Feb 1933; memo for AC/AC from Lt Col Chaney, C/Plans Div., 20 Mar 33, all in 145.91-409.
5. Memo for The Commandant from Maj Hume Peabody, 1-3 Oct 34, in 3-2565-48.
6. *Final Report of War Department Special Committee on Army Air Corps*, pp. 44-72.
7. Ltr, TAG to C/AC, 14 Aug 34, in 145.91-409.
8. Ltr, TAG to C/AC, 28 Sep 34, in 145.91-409.
9. Hist. AAF Bd, Pt. I, p. 5; A History of Maxwell Field, 1910-1938, p. 79.
10. Ltr, TAG to CAC, 28 Sep 34, and 1st ind thereto, C/AC to TAG, 15 Nov 34; ltr, Lt Col John F. Curry to OCAC, 5 Feb 35; 1st ind (ltr, Brig Gen F. M. Andrews to OCAC, 25 Apr 35), OCAC to CG GHQ Air Force, 4 May 35; Memo for Gen Westover from Col A. G. Fisher, 5 Oct 36, all in 3-2565-52; WD Special Orders 58, 11 Mar 35, in 3-25803; ltr, Lt Col John F. Curry to Chief of Air Corps, n.d., and 1st ind OCAC to the President, Air Corps Board, 13 Mar 35, in 3-2565-48.
11. Memo for C/AC from Col Arthur G. Fisher, C/Plans, 24 Aug 34; ltr, TAG to C/AC, 28 May 35, with 2d wrapper ind, Pres., ACB to C/AC, 2 Jun 35, and 1st ind, OCAC to TAG, 10 Jun 35, all in 145.91-409.
12. Memo for C/Plans Div. from Maj R. C. Candee, 6 Mar 35, in 145.91-409.
13. Hist, AAF Board, Pt. I, pp. 58, Pt. II, p. 4; A History of Maxwell Field, 1910-1938, pp. 579-91.
14. Monthly Status of Studies of the Air Corps Board, Jan 36 through May 40, in 167.5. For files of correspondence and papers concerning Study No. 3, see 167.5-3 and 167.5-3A. For another valuable collection dealing with the Air Corps Board, see 145.91-409.
15. R & R, H. H. Arnold to C/Plans Sec., 20 Feb 39; memo for C/AC from Lt Col Hume Peabody, acts. C/Plans Sec., 6 Mar 39, both in 145.91-328.
16. Ltr, TAG to Comdt. ACTS, 20 Jul 39; memo for Gen W. R. Weaver from Col Edgar P. Sorensen, 11 Dec 40. Both of these documents are in 145.91-328, which is an extensive file on the creation of the 23rd Composite Group. See also History of Maxwell Field, 1 Jan 39-Dec 41, pp. 60-69, for a brief account of the group while it was stationed at Maxwell Field.
17. Annual Rpts, ACTS, 1921 through 1940, in 245.111; ltrs, Maj Vernon G. Olsmith to C/Inf., 2 Jun 34; Maj L. B. Glasgow to C/Inf., 15 Jun 36, both in 245.111.
18. Ltrs, Curry to Comdt. AWC, 17 Feb 33; Maj Gen G. S. Simonds, Comdt. AWC to Comdt. ACTS, 26 Jun 33; Curry to C/AC, 13 Jul 33; OCAC to Comdt. ACTS, 17 Apr 34," all in 248.12601, 1933.
19. Program of Instruction for the ACTS for the Years 1931-1932 through 1939-1940, in 248.192; ltr, Lt Col Donald Wilson to Asst. Comdt., 20 Jan 38, in 248.12601.
20. Ltr, Lt Col John F. Curry to TAG, 22 May 34.
21. ACTS Instructors Memo 3, 19 Sep. 33, and 1 Jul 34.
22. ACTS Instructors Memo 10, 12 Feb 35; ACTS School Order 1, 1 Jul 34; School Order No. 1, n.d.



## AIR CORPS TACTICAL SCHOOL

23. ACTS School Order 6, 29 Mar 35; ACTS School Order 2 (Rev.) 10 Oct 35.
24. Memo for Director Dept of AT & S from Lt Col H. A. Dargue, 20 Jun 36; ltr, All Instructors from Harold L. George, n.d., both in 248.126, 1935-36.
25. The Air Corps Tactical School [1920-1940] in 245.01B; ACTS School Order 2 (Rev.), 10 Oct 35; memo for Dept. of Air Tactics and Strategy from Lt Col H. A. Dargue, 28 Sep 35, in 248.126, 1935-36.
26. The Air Corps Tactical School [1920-1940]; Brig Gen H. C. Pratt, "Air Tactics," in *Western Flying*, Jan 38, quoted in *A History of Maxwell Field, 1910-1938*.
27. The Air Corps Tactical School (As Seen by an Air Corps Student), in *Air Corps News Letter*, 15 Apr 36.
28. Ltr, Lt Col John F. Curry to TAG, 11 Jul 33.
29. Ltr, Brig Gen H. C. Pratt to TAG, 11 Jun 38, in 245.111.
30. Annual Rpts of the various commandants, 1920-40, in 245.111; ACTS School Orders 2 (Rev.), 10 Oct 35; 4, 15 Feb 35, 1, 1 Jul 36, 1, 1 Jul 37, 2, 16 Apr 37, 1 Jul 38, 1-A, 20 Sep 38, 4, 19 Jun 39, 6, 8 Jan 40, all in 248.125.
31. Annual Rpts of the various commandants of the Tactical School, 1920-40, in 245.111.
32. Ira C. Eaker, "The Air Corps Tactical School (As Seen by an Air Corps Student)" in *Air Corps News Letter*, 15 Apr 36; Annual Rpts of the various commandants, 1934-40.
33. "The School Situation for Air Corps Officers," in *Air Corps News Letter*, 1 Sep 35; interview with Brig Gen Hume Peabody, USAF Ret. by writer, 25 Mar 54.
34. Maj M. F. Lindsey, Inf., "A Doughboy at an Air Corps School," in *Air Corps News Letter*, 15 Apr 36.

## Chapter 4

1. WDTR 440-15, 15 Oct 1935.
2. Draft, interview with Brig Gen Laurence S. Kuter by Maj C. W. Williams, 21 Oct 42, in 101-10A.
3. General Hansell also noted that the translation of Douhet at the school was of little value, since it was a poor translation from French. Interview with Maj Gen Haywood S. Hansell, Ret., by author, 5 Feb 54. See also Air Historical Study 89, Development of Air Doctrine in the Army Air Arm, 1917-1941.
4. ACTS Lecture, An Inquiry into the Subject of "War," 1935, in 248.11-9.
5. Air Service Field Officer School, Training Regulations No. 440-15, Air Tactics, 1922, sec. 2, pp. 7-8.
6. *Ibid.*
7. Ltrs, Col R. M. Goolrick to CG IX Corps, 25 Feb 41 and 17 Mar 41, 145.91-303.
8. ASFOS TR 440-15, 1922, *passim*.
9. *Ibid.*; ASTS, Bombardment, 1924-1925, pp. 76-77; ACTS, Bombardment, 1925-1926.
10. ASFOS TR 440-15, 1922, sec. 2, pp. 4-7.
11. *Ibid.*, p. 8.
12. ACTS, Employment of Combined Air Force, 1926.
13. *Ibid.*, p. 13.
14. *Ibid.*, pp. 91-1, 23-24.
15. ACTS, The Air Force, 1930, pp. 23-26.
16. *Ibid.*
17. Air Historical Study 89, Development of Air Doctrine in the Army Air Arm, 1917-1941, p. 207.
18. ACTS, Air Force Principles, 1933-1934, in 248.21015A-1; Testimony presented by Major Wilson, *et al*, before the Federal Aviation Commission, Wash., D. C., nd in 248.121-3.
19. ACTS, Bombardment, 1926 and 1931; ACTS, The Air Force, 1931; ACTS, Lecture, Air Force, 1932-1933, in 248.2014A-3.

## NOTES

20. ACTS, Bombardment, Feb 31, p. 26.
21. ACTS, Bombardment, p. 70.
22. *Ibid.*, p. 25.
23. A Brief of Testimony Presented by Capt Harold L. George, Air Corps, United States Army, to the Federal Aviation Commission, pp. 2, 7, in 248.121-3.
24. W. F. Craven and J. L. Cate, eds, *The Army Air Forces in World War II*, 1 (Chicago, 1948), 65-66.
25. ACTS, Bombardment, Feb 31, pp. 13-14.
26. AHS-89, p. 146.
27. For a detailed account of the problem, see AHS-6, The Development of the Heavy Bomber, 1918-1944.
28. TR 440-15, 15 Oct 35.
29. Ltr, OCAC to TAG, 18 Jun 38, and 1st ind thereto, TAG to C/AC, 16 Jun 38, in 145.95-116.
30. FM 1-5, p. 29.
31. AHS-89, pp. 206-7.
32. Memo for Asst. C/S G-1 and others from Brig Gen Charles E. Kilbourne, AC/S WPD, 21 Dec 34, w/incl., Doctrines of Army Air Corps; A Study of Proposed Air Corps Doctrine, Made by the Air Corps Tactical School, Based Upon Information Furnished by the War Plans Division, General Staff, in memo, dtd 21 Dec 34, 31 Jan 35, in 145.93-116.
33. ACTS, Lecture—The Air Force, General, p. i, in The Air Force, 1934-1935, in 248.101-1.
34. ACTS, Air Force, Counter Air Force Operations, 1934-1935, p. 1.
35. *Ibid.*, pp. 3-4; Memo for Col Harmon from Lt Col Wilson, 1 May 39, w/attached comments, in 248.282-21.
36. Maj Muir S. Fairchild, Primary Strategic Objectives of Air Forces, Lecture, Air Force Course, 11 Apr 39, in 248.2020A-14.
37. *Ibid.*
38. ACTS, Instructor's Memo 6, 21 Nov 33. See also ACTS Pursuit texts for 1926, 1929, and 1933.
39. Ltr, Harmon to Brig Gen B. K. Yount, 25 Nov 39, in 145.91-456.
40. Ltr, Curry to C/AC, 14 Jul 33, in 2015A-6.
41. *Ibid.*
42. Quoted in AHS-89, p. 150.
43. Interview by the author with Maj Gen Donald Wilson, USAF Ret, and Maj Gen H. S. Hansell, Jr, USAF Ret; ACTS, Pursuit Aviation, 1937, 1938, 1939; memo for Col Harmon from Lt Col Wilson, 1 May 39, w/attached comments, 248.282-21.
44. ACTS, Pursuit Aviation, Oct 37, p. 65. The same statement is repeated in the Pursuit texts dated Oct 38 and Sep 39.
45. Ltr, Harmon to Yount, 25 Nov 39.

## Chapter 5

1. Report of the Air Corps Tactical School on Plans for the Conduct of a Special Abbreviated Course for the Regular Air Corps Officers over 32 Years of Age Who Have Not Attended the Air Corps Tactical School, 8 Nov 38, in 248.121-4B.
2. *Ibid.*; memo for Col Harmon from Col Donald Wilson, 23 Mar 39, in 248.121-4B.
3. Memo for Harmon from Wilson, 23 Mar 39.
4. Memo for Commandant ACTS from Col M. F. Harmon, 26 Jul 39, in 248.121-4B; ltr, Col W. R. Weaver to TAG, 5 Jul 40, in 245.111.
5. ACTS School Order 4, 19 Jun 39; Program of Instruction for ACTS, 1939-1940, 14 Jul 39. For comparison with long course curriculum see Program of Instruction for ACTS, 1937-1938, all in 248.192-40.

## *AIR CORPS TACTICAL SCHOOL*

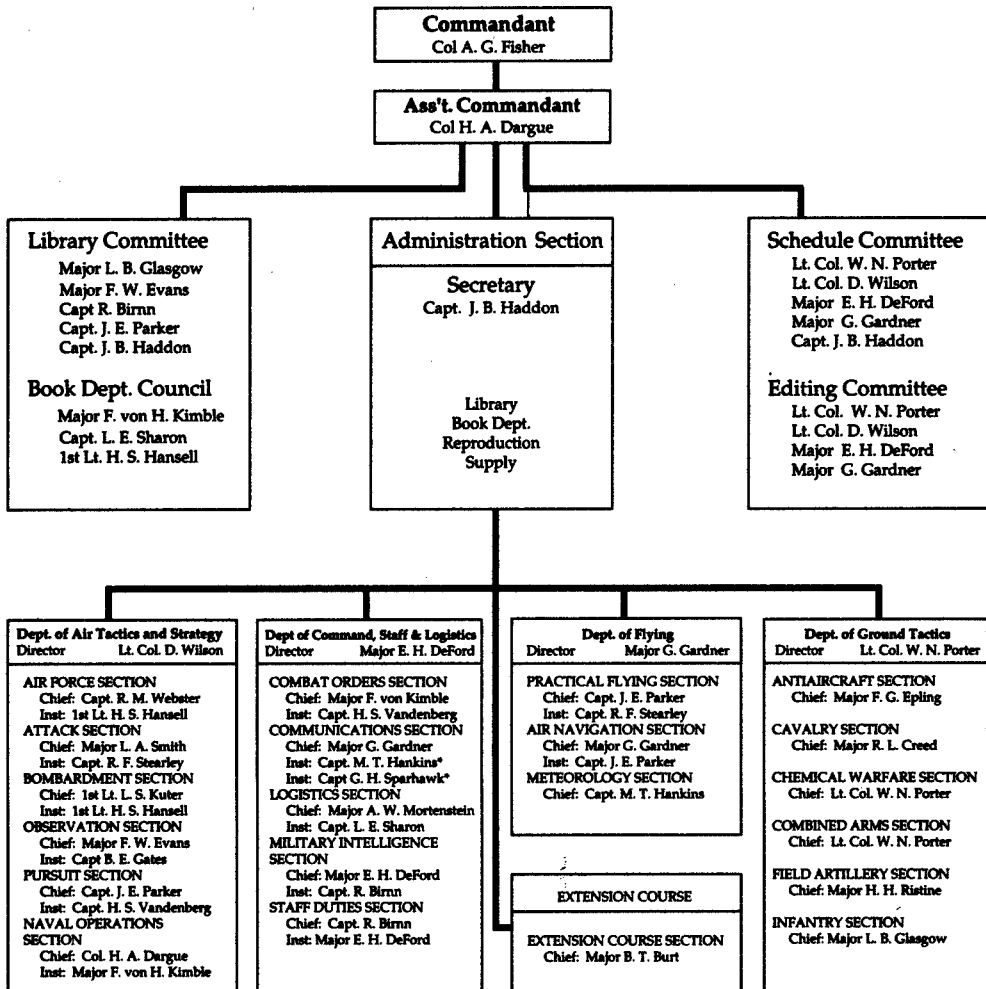
6. 1st ind (basic ltr unidentified) Comdt. ACTS to OCAC, 25 Jan 39, w/incl, Study on Reduction of Activities of the Air Corps Tactical School During Period of Proposed Air Corps Expansion, in 248.121-4B.
7. Ltr, Lt Col Ira C. Eaker, OCAC to Comdt. ACTS, 13 Jun 40.
8. Ltr, Brig Gen Davenport Johnson, C/T & O Div to CG Southeast Air Corps Training Center, 26 Jun 41.
9. Study on Reopening of the ACTS and the Establishment of a Course of Instruction for Junior Officers to be Called The Basic Course, Air Force Tactical School, 29 Jul 41.
10. Ltr, Green to TAG, 30 Jun 42, in 245.111.
11. Ltr, Curry to C/AC, 8 Apr 32, in 248.12601, 1932.

## **Appendices**

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# Appendix 1

## Air Corps Tactical School 1936



\* Post Officer not assigned to Staff and Faculty

## Appendix 2

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### Staff and Faculty, Air Corps Tactical School, 1920-1942

#### 1920-1921\*

Maj. Thomas DeW. Milling, AS, Officer in Charge  
Maj. William C. Sherman, AS, Assistant to Officer in Charge  
Capt. Gerald E. Brower, AS, School Adjutant  
Maj. Davenport Johnson, AS, Director  
Maj. Joseph T. McNarney, AS, Director  
Maj. Thomas J. Hanley, Jr., AS, Director  
Capt. Harry C. Drayton, AS, Commanding School Detachment  
1st Lt. George C. McDonald, AS, Duty with School Detachment  
1st Lt. Jacob M. Woodard, AS, Armament Officer

#### 1921-1922

Lt. Col. Charles H. Danforth, AS, Commandant  
Maj. Thomas DeW. Milling, AS, Officer in Charge  
1st Lt. Harold R. Rouse, AS, Adjutant  
Maj. William C. Sherman, AS, Director  
Maj. John H. Jouett, AS, Instructor  
Capt. Louis R. Knight, AS, Instructor  
Capt. Joseph T. McNarney, AS, Instructor

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\* In only a few instances do available sources for the period 1920-1934 designate specific instructors for a course. It is known, for example, that McNarney taught observation, Kenney taught the Attack course, Bissell Pursuit, and Walker taught Bombardment. But because so few of the specific assignments are known, no attempt is made here to designate particular fields of interest for the instructors for this period.

## *AIR CORPS TACTICAL SCHOOL*

### **1922-1923**

Lt. Col. Charles H. Danforth, AS, Commandant  
Maj. Thomas DeW. Milling, AS, Officer in Charge  
1st Lt. Harold R. Rouse, AS, Adjutant  
Maj. William C. Sherman, AS, Director  
Maj. John H. Jouett, AS, Instructor  
Capt. Louis R. Knight, AS, Instructor  
Capt. Joseph T. McNarney, AS, Instructor  
Capt. Arthur R. Brooks, AS, Instructor  
1st Lt. Floyd N. Shumaker, AS, Instructor

### **1923-1924**

Lt. Col. Charles H. Danforth, AS, Commandant  
Maj. Thomas DeW. Milling, AS, Assistant Commandant  
1st Lt. Harold R. Rouse, AS, Secretary.  
Capt. Earl L. Naiden, AS, Director of Instruction  
Maj. John H. Jouett, AS, Instructor (until 10 March 1924)  
Maj. Joseph T. McNarney, AS, Instructor  
1st Lt. Horace N. Heisen, AS, Instructor  
1st Lt. Walter J. Reed, AS, Instructor (reported on 17 March 1924)  
1st Lt. Harvey W. Cook, AS, Instructor

### **1924-1925**

Lt. Col. Harry Graham, AS, Commandant (until 11 September 1924)  
Maj. Oscar Westover, AS, Commandant  
Maj. Thomas DeW. Milling, AS, Assistant Commandant (until 18 June 1925) (Attached Hqs. 2d Wing from 9 January 1925)  
1st Lt. Harold F. Rouse, AS, Adjutant and Secretary (Attached 50th Observation Squadron from 3 Dec. 1924)  
Capt. Horace N. Heisen, AS, Detachment Commander (Attached 58th Service Squadron)  
Maj. Earl L. Naiden, AS, Director of Instruction  
Maj. Lewis H. Brereton, AS, Instructor (from 16 September 1924 to 15 June 1925)  
Maj. Joseph T. McNarney, AS, Instructor (attached Hqs. 2d Wing from 1 March 1925)  
Maj. Edwin B. Lyon, AS, Instructor  
Capt. Harvey W. Cook, AS, Instructor  
1st Lt. Walter J. Reed, AS, Instructor  
1st Lt. Charles B. Austin, AS, Instructor  
1st Lt. Rex K. Stoner, AS, Instructor (attached 50th Observation Squadron)

## APPENDIX 2

### 1925-1926

Maj. Oscar Westover, AS, Commandant  
Maj. Earl L. Naiden, AS, Assistant Commandant  
1st Lt. Edwin J. House, AS, Secretary  
Maj. Henry W. Harms, AS, Instructor  
Maj. Edwin B. Lyon, AS, Instructor  
Capt. Francis M. Brady, AS, Instructor  
Capt. Harvey W. Cook, AS, Instructor  
Capt. William W. Wise, CWS, Instructor  
1st Lt. Walter J. Reed, AS, Instructor  
1st Lt. Charles B. Austin, AS, Instructor

### 1926-1927

Lt. Col. Clarence C. Culver, AC, Commandant  
Maj. Walter H. Frank, AC, Assistant Commandant  
Capt. Edwin J. House, AS, Secretary  
Maj. Courtney Hodges, Inf, Instructor  
Maj. Davenport Johnson, AC, Instructor  
Maj. Francis T. Armstrong, FA, Instructor  
Maj. Spencer B. Akin, SC, Instructor  
Maj. John D. Kelly, Cav, Instructor  
Capt. Francis M. Brady, AC, Instructor  
Capt. Laurence F. Stone, AC, Instructor  
Capt. William W. Wise, CWS, Instructor  
1st Lt. Clayton Bissell, AC, Instructor  
1st Lt. Charles B. Austin, AC, Instructor

### 1927-1928

Lt. Col. Clarence C. Culver, AC, Commandant  
Maj. Walter H. Frank, AC, Assistant Commandant  
Capt. Edwin J. House, AC, Secretary  
Maj. Davenport Johnson, AC, Instructor  
Maj. Michael F. Davis, AC, Instructor  
Maj. Francis T. Armstrong, FA, Instructor  
Maj. Howell M. Estes, Cav, Instructor  
Maj. Courtney Hodges, Inf, Instructor  
Capt. George C. Kenney, AC, Instructor  
Capt. Laurence F. Stone, AC, Instructor  
Capt. William W. Wise, CWS, Instructor  
1st Lt. Charles B. Austin, AC, Instructor  
1st Lt. Clayton Bissell, AC, Instructor  
Capt. Francis M. Brady, AC, Instructor



## *AIR CORPS TACTICAL SCHOOL*

### **1928-1929**

Lt. Col. Clarence C. Culver, AC, Commandant  
Maj. Walter H. Frank, AC, Assistant Commandant  
Capt. Edwin J. House, AC, Secretary  
Maj. Follett Bradley, AC, Director  
Maj. Francis T. Armstrong, FA, Instructor  
Maj. Robert C. Candee, AC, Instructor  
Maj. Courtney Hodges, Inf, Instructor  
Maj. Michael F. Davis, AC, Instructor  
Capt. George C. Kenney, AC, Instructor  
Capt. Daniel S. Seaton, AC, Instructor  
Capt. Robert Olds, AC, Instructor  
Capt. William W. Wise, CWS, Instructor  
Capt. Laurence F. Stone, AC, Instructor  
1st Lt. Clayton Bissell, AC, Instructor

### **1929-1930**

Lt. Col. Jacob W. S. Wuest, AC, Commandant  
Maj. Walter H. Frank, AC, Assistant Commandant  
Capt. William V. Andrews, AC, Secretary  
Maj. Follett Bradley, AC, Director of Instruction  
Maj. Francis T. Armstrong, FA, Instructor  
Maj. Robert C. Candee, AC, Instructor  
Maj. Howell M. Estes, Cav, Instructor  
Maj. Percy E. Van Nostrand, AC, Instructor  
Maj. Lyman S. Frasier, Inf, Instructor  
Maj. Vincent B. Dixon, AC, Instructor  
Capt. George C. Kenney, AC, Instructor  
Capt. Daniel S. Seaton, AC, Instructor  
Capt. George H. Weems, AC, Instructor  
Capt. Charles W. Walton, CWS, Instructor  
Capt. Robert Olds, AC, Instructor  
Capt. Donald Wilson, AC, Instructor  
1st Lt. Clayton Bissell, AC, Instructor  
1st Lt. Kenneth N. Walker, AC, Instructor  
1st Lt. Charles C. Chauncey, AC, Instructor

### **1930-1931**

Lt. Col. Roy C. Kirtland, AC, Commandant  
Maj. John F. Curry, AC, Assistant Commandant  
1st Lt. John D. Barker, AC, Secretary  
Maj. Follett Bradley, AC, Director of Instruction  
Maj. Francis T. Armstrong, FA, Instructor

## APPENDIX 2

Maj. Lyman S. Frasier, Inf, Instructor  
Maj. Percy F. Van Nostrand, AC, Instructor  
Maj. Robert C. Candee, AC, Instructor  
Maj. Howell M. Estes, Cav, Instructor  
Capt. George H. Weems, Inf, Instructor  
Capt. Daniel S. Seaton, AC, Instructor  
Capt. George C. Kenney, AC, Instructor  
Capt. Charles W. Walton, CWS, Instructor  
Capt. Robert Olds, AC, Instructor  
1st Lt. Kenneth N. Walker, AC, Instructor  
1st Lt. Charles McK. Robinson, AC, Instructor

### 1931-1932

Lt. Col. John F. Curry, AC, Commandant  
Maj. Hume Peabody, AC, Assistant Commandant  
1st Lt. John D. Barker, AC, Secretary  
Maj. Vernon G. Olsmith, Inf, Instructor  
Maj. Harry A. Flint, Cav, Instructor  
Maj. Vernon E. Prichard, FA, Instructor  
Maj. Robert C. Candee, AC, Instructor  
Maj. Donald Wilson, AC, Instructor  
Capt. George H. Weems, Inf, Instructor  
Capt. Charles W. Walton, CWS, Instructor  
Capt. David S. Seaton, AC, Instructor  
Capt. Edmund W. Hill, AC, Instructor  
Capt. Claire L. Chennault, AC, Instructor  
Capt. James T. Curry, Jr., AC, Instructor  
Capt. Charles McK. Robinson, AC, Instructor  
1st Lt. Kenneth N. Walker, AC, Instructor

### 1932-1933

Lt. Col. John F. Curry, AC, Commandant  
Maj. Hume Peabody, AC, Assistant Commandant  
1st Lt. John D. Barker, AC, Secretary  
Maj. Robert R. Welshmer, CAC, Instructor  
Maj. Vernon G. Olsmith, Inf, Instructor  
Maj. Harry A. Flint, Cav, Instructor  
Maj. Vernon E. Prichard, FA, Instructor  
Maj. Donald Wilson, AC, Instructor  
Capt. Frederick I. Eglin, AC, Instructor  
Capt. Charles W. Walton, CWS, Instructor  
Capt. Edmund W. Hill, AC, Instructor  
Capt. John I. Moore, AC, Instructor

## *AIR CORPS TACTICAL SCHOOL*

Capt. Claire L. Chennault, AC, Instructor  
Capt. Arthur K. Ladd, AC, Instructor  
Capt. James T. Curry, AC, Instructor  
Capt. Charles McK. Robinson, AC, Instructor  
Capt. Harold L. George, AC, Instructor  
1st Lt. Kenneth N. Walker, AC, Instructor

### **1933-1934**

Lt. Col. John F. Curry, Commandant  
Maj. Hume Peabody, Assistant Commandant  
1st Lt. John D. Barker, Secretary  
Capt. James T. Curry, AC, Instructor  
Maj. Vernon G. Oldsmith, AC, Instructor  
Maj. Donald Wilson, AC, Instructor  
Maj. George H. Weems, Inf, Instructor  
Lt. Col. Robert R. Welshmer, CAC, Instructor  
Maj. William N. Porter, AC, Instructor  
Capt. Harold L. George, AC, Instructor  
Capt. Grandison Gardner, AC, Instructor  
Capt. Arthur K. Ladd, AC, Instructor  
Capt. Edmund W. Hill, AC, Instructor  
Capt. Charles McK. Robinson, AC, Instructor  
Capt. Emil Kiel, AC, Instructor  
Capt. Frederick I. Eglin, AC, Instructor  
Capt. Claire L. Chennault, AC, Instructor  
Capt. John I. Moore, AC, Instructor  
Capt. Odas Moon, AC, Instructor  
Lt. Warren R. Carter, AC, Instructor  
Capt. Walter G. Layman, AC, Instructor  
Maj. Vernon E. Prichard, AC, Instructor

### **1934-1935\***

#### *School Staff*

Col. John F. Curry, AC, Commandant  
Lt. Col. Herbert A. Dargue, AC, Assistant Commandant  
Capt. Julian B. Haddon, AC, Secretary and Officer Librarian

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\* Annual Reports of the School for the period 1934-1938 give complete listings of duty assignments of staff and faculty.

## APPENDIX 2

### *Instructors*

#### *Directors*

Lt. Col. Harold L. George, AC, Department of Air Tactics

Maj. Frederick I. Eglin, AC, Department of Basic and Special Instruction

Lt. Col. Vernon G. Olsmith, Inf, Department of Ground Tactics

#### *Chiefs of Sections (Air)*

Lt. Col. Harold L. George, AC, Air Force Section

Maj. Warren R. Carter, AC, Air Intelligence Section

Maj. Lotha A. Smith, AC, Attack Section

Maj. Odas Moon, AC, Bombardment Section

Maj. Frederick W. Evans, AC, Observation Section

Maj. Claire L. Chennault, AC, Pursuit Section

Maj. Raymond E. O'Neill, AC, Balloons and Airships Section

Maj. Austin M. Martenstein, AC, Logistics Section

Maj. Frederick I. Eglin, AC, Combat Orders Section

Maj. Emil C. Kiel, AC, Communications Section

Maj. John I. Moore, AC, Extension Course Section

Maj. Grandison Gardner, AC, Air Navigation Section

Maj. Frederick I. Eglin, AC, Staff Duties Section

Maj. Warren R. Carter, AC, Practical Flying Section

#### *Chiefs of Sections (Ground)*

Lt. Col. Vernon G. Olsmith, Inf, Combined Arms Section

Lt. Col. Vernon G. Olsmith, Inf, Infantry Section

Maj. Richard L. Creed, Cav, Cavalry Section

Maj. Vernon E. Prichard, FA, Field Artillery Section

Lt. Col. William N. Porter, CWA, Chemical Warfare Section

Lt. Col. Robert R. Welshmer, CAC, Antiaircraft Section

#### *Other Instructors*

Capt. Robert M. Webster, AC, Air Force

Capt. Gordon P. Saville, AC, Maps and Photographs

The following instructors were transferred during the academic year: Capt.

Edmund W. Hill, AC; Maj. Arthur K. Ladd, AC; Maj. Eugene

L. Eubank, AC.

### **1935-1936**

#### *School Staff*

Col. Arthur G. Fisher, AC, Commandant

Lt. Col. Herbert A. Dargue, AC, Assistant Commandant

Capt. Julian B. Haddon, AC, Secretary and Officer Librarian

## *AIR CORPS TACTICAL SCHOOL*

### *Instructors*

#### *Directors*

Lt. Col. Harold L. George, AC, Department of Air Tactics and Strategy

Maj. Frederick I. Eglin, AC, Department of Command, Staff and Logistics

Maj. Lotha A. Smith, AC, Department of Flying

Lt. Col. William N. Porter, CWS, Department of Ground Tactics

#### *Chiefs of Sections (Air)*

Lt. Col. Harold L. George, AC, Air Force Section

Maj. Lotha A. Smith, AC, Attack Section

Maj. Odas Moon, AC (relieved 29 January 1936), Bombardment Section

Maj. Robert M. Webster, AC (appointed 7 March 1936), Bombardment Section

Maj. Frederick W. Evans, AC, Observation Section

Maj. Byron E. Gates, AC, Pursuit Section

Lt. Col. Herbert A. Dargue, AC, Naval Operations Section

Maj. Frederick I. Eglin, AC, Combat Orders Section

Maj. Emil C. Kiel, AC, Communications Section

Maj. Austin W. Martenstein, AC, Logistics Section

Maj. Earl H. DeFord, AC, Air Intelligence Section

Maj. Frederick I. Eglin, AC, Staff Duties Section

Maj. Lotha A. Smith, AC, Practical Flying Section

Maj. Grandison Gardner, AC, Air Navigation Section

Maj. John I. Moore, AC, Extension Course Section

#### *Chiefs of Sections (Ground)*

Lt. Col. William N. Porter, CWS, Combined Arms Section

Maj. Lawrence B. Glasgow, Inf, Infantry Section

Maj. Richard L. Creed, Cav, Cavalry Section

Maj. Harold H. Ristine, FA, Field Artillery Section

Lt. Col. William N. Porter, CWS, Chemical Warfare Section

Maj. Benjamin F. Harmon, CAC, Antiaircraft Section

#### *Other Instructors*

1st Lt. Haywood S. Hansell, AC, Air Force Section

1st Lt. Laurence S. Kuter, AC, Bombardment Section

Capt Gordon P. Saville, AC, Maps and Photographs\*

Capt Milton T. Hankins, SC, Meteorology\*

Maj. Claire L. Chennault, AC, Pursuit Section\*

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\* Not assigned to Staff and Faculty. Due to shortage of instructors it was necessary to utilize the services of these post officers.

## APPENDIX 2

### 1936-1937

#### *School Staff*

Col. Arthur G. Fisher, AC, Commandant (from 1 September 1936 to 5 March 1937)

Brig. Gen. Henry C. Pratt, USA, Commandant (reported: 14 March 1937)

1st Lt. Dwight B. Schanep, AC, Aide-de-Camp (reported: 25 March 1937)

Col. Herbert A. Dargue, AC, Assistant Commandant

Capt. Julian B. Haddon, AC, Secretary and Officer Librarian

#### *Instructors*

##### *Directors*

Lt. Col. Donald Wilson, AC, Department of Air Tactics and Strategy

Maj. Earl H. DeFord, AC, Department of Command, Staff and Logistics

Maj. Grandison Gardner, AC, Department of Flying

Lt. Col. William N. Porter, CWS, Department of Ground Tactics

##### *Chiefs of Sections (Air)*

Capt. Robert M. Webster, AC, Air Force Section

Maj. Lotha A. Smith, AC, Attack Section

1st Lt. Laurence S. Kuter, AC, Bombardment Section

Maj. Frederick W. Evans, AC, Observation Section

Capt. James E. Parker, AC, Pursuit Section

Col. Herbert A. Dargue, AC, Naval Operations Section

Maj. Grandison Gardner, AC, Communications Section

Maj. Frederick von H. Kimble, AC, Combat Orders Section

Maj. Austin W. Martenstein, AC, Logistics Section

Maj. Earl H. DeFord, AC, Military Intelligence Section

Capt. Roland Birnn, AC, Staff Duties Section

Capt. James E. Parker, AC, Practical Flying Section

Maj. Grandison Gardner, AC, Air Navigation Section

Capt. Milton T. Hankins, SC, Meteorological Section\*

Maj. Byron T. Burt, AC, Extension Course Section

Lt. Col. William N. Porter, CWS, Combined Arms Section

Maj. Lawrence B. Glasgow, Inf, Infantry Section

Maj. Richard L. Creed, Cav, Cavalry Section

Maj. Harold H. Ristine, FA, Field Artillery Section

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\* Post officer not assigned to staff or faculty.

## *AIR CORPS TACTICAL SCHOOL*

Lt. Col. William N. Porter, CWS, Chemical Warfare Section  
Maj. Fenton G. Epling, CAC, Antiaircraft Section

### *Other Instructors*

1st Lt. Haywood S. Hansell, AC, Air Force Section  
Capt. Ralph F. Stearley, AC, Attack Section  
Maj. Byron E. Gates, AC, Observation Section  
Capt. Hoyt S. Vandenberg, AC, Pursuit Section  
Lt. Bennett W. Wright, USN, Naval Operations Section  
Maj. Leon E. Sharon, AC, Logistics Section

### **1937-1938**

#### *School Staff*

Brig. Gen. Henry C. Pratt, USA, Commandant  
1st Lt. Dwight B. Schanep, AC, Aide-de-camp  
Col. Herbert A. Dargue, AC, Assistant Commandant  
Maj. Harland W. Holden, AC, Secretary and Officer Librarian

#### *Instructors*

##### *Directors*

Lt. Col. Donald Wilson, AC, Department of Air Tactics and Strategy  
Maj. Earl H. DeFord, AC, Department of Command, Staff and Logistics  
Lt. Col. Charles P. Hall, Inf, Department of Ground Tactics

##### *Chiefs of Sections (Air)*

Maj. Muir S. Fairchild, AC, Air Force Section  
Maj. Lotha A. Smith, AC, Attack Section  
Capt. R. A. Snavely, AC, Bombardment Section  
Maj. Byron E. Gates, AC, Observation Section  
Capt. James E. Parker, AC, Pursuit Section  
Lt. Comdr. M. R. Browning, USN, Naval Operations Section  
Maj. Frederick von H. Kimble, AC, Combat Orders Section  
Maj. Earl H. DeFord, AC, Communications Section  
Maj. Leon E. Sharon, AC, Logistics Section  
Maj. Earl H. DeFord, AC, Military Intelligence Section  
Capt. Roland Birnn, AC, Staff Duties Section  
Capt. Ralph A. Snavely, AC, Air Navigation Section  
Capt. Benjamin Stern, SC, Meteorological Section\*  
Maj. Byron T. Burt, AC, Extension Course Section

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\* Post officer not assigned to staff or faculty.

## APPENDIX 2

### *Chiefs of Sections (Ground)*

Lt. Col. Charles P. Hall, Inf, Combined Arms Section  
Maj. Lawrence B. Glasgow, Inf, Infantry Section  
Maj. Richard L. Creed, Cav, Cavalry Section  
Maj. Harold H. Ristine, FA, Field Artillery Section  
Maj. Alden H. Waitt, Inf, Chemical Warfare Section  
Maj. Fenton G. Epling, CWS, Antiaircraft Section

### *Other Instructors*

1st Lt. Haywood S. Hansell, AC, Air Force Section  
Capt. Ralph F. Stearley, AC, Attack Section  
Capt. Augustine F. Shea, AC, Observation Section  
Capt. Hoyt S. Vandenberg, AC, Pursuit Section  
Col. Herbert A. Dargue, AC, Naval Operations  
Maj. Frederick von H. Kimble, AC  
Maj. Charles E. Thomas, AC, Logistics Section  
Maj. Harland W. Holden, AC, Staff Duties Section  
Capt. Robert C. Oliver, AC, Extension Course Section

### **1938-1939**

#### *School Staff*

Col. Albert L. Sneed, AC, Acting Commandant (from 19 September 1938 to 21 November 1938)  
Col. Millard F. Harmon, AC, Commandant (from 22 November 1938 to 31 March 1939)  
Col. Walter R. Weaver, AC, Commandant (from 1 April 1939)  
Col. Millard F. Harmon, AC, Assistant Commandant (from 1 April 1939)  
Maj. Harland W. Holden, AC, Secretary and Officer Librarian  
Col. Millard F. Harmon, AC, Assistant Commandant (from 19 September 1938 to 21 November 1938 and from 1 April 1939)  
Lt. Col. Donald Wilson, AC, Assistant Commandant (from 22 November 1938 to 31 March 1939)  
Maj. Harland W. Holden, AC, Secretary and Officer Librarian

#### *Instructors*

##### *Department of Air Tactics and Strategy*

Lt. Col. Donald Wilson, AC, Director  
Lt. Comdr. William H. Buracker, USN\*

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\* Annual Reports for the years 1938-42 do not specify the exact course taught by the individual instructor.



## *AIR CORPS TACTICAL SCHOOL*

Maj. Muir S. Fairchild, AC  
Maj. Frederick M. Hopkins, Jr., AC  
Maj. Byron E. Gates, AC  
Maj. Charles E. Thomas, Jr., AC  
Maj. James E. Parker, AC  
Maj. Augustine F. Shea, AC  
Maj. Ralph F. Stearley, AC  
Capt. Ralph A. Snavely, AC  
Capt. Earl E. Partridge, AC  
Capt. Earl W. Barnes, AC  
Capt. Laurence S. Kuter, AC

### *Department of Command, Staff and Logistics*

Lt. Col. Leo A. Walton, AC, Director  
Maj. Harland W. Holden, AC  
Maj. John Y. York, Jr., AC  
Maj. Frederick von H. Kimble, AC  
Maj. Leon E. Sharon, AC  
Maj. Roland Birnn, AC  
Capt. Robert C. Oliver, AC

### *Department of Ground Tactics*

Lt. Col. Charles P. Hall, Inf, Director  
Lt. Col. John C. Mullenix, Cav  
Lt. Col. Harold H. Ristine, FA  
Maj. Allison J. Barnett, Inf  
Maj. Fenton G. Epling, CAC  
Maj. Alden H. Waitt, CWS

### *Extension Course Section*

Maj. Byron T. Burt, AC, Director  
Capt. Robert C. Oliver, AC

## **1939-1940**

### *School Staff*

Col. Walter R. Weaver, AC, Commandant  
Col. Millard F. Harmon, AC, Assistant Commandant  
Lt. Col. Harland W. Holden, AC, Secretary  
Lt. Col. Harland W. Holden, AC, Officer Librarian (from 5 June 1939 to  
30 December 1939)  
Maj. John M. Davies, AC, Officer Librarian (from 30 December 1939 to  
19 April 1940)  
Lt. Col. David S. Seaton, AC, Officer Librarian (from 19 April 1940 to  
29 June 1940)

## APPENDIX 2

### *Instructors*

#### *Department of Air Tactics and Strategy*

Lt. Col. Donald Wilson, AC, Director (from 5 June 1939 to 8 January 1940)

Maj. Muir S. Fairchild, AC, Director (from 8 January 1940 to 29 June 1940)

Lt. Comdr. Joseph L. Kane, USN

Maj. Muir S. Fairchild, AC

Maj. Frederick M. Hopkins, Jr., AC

Maj. Byron E. Gates, AC

Maj. Charles E. Thomas, Jr., AC

Maj. Randolph P. Williams, AC

Maj. James E. Parker, AC

Maj. Ralph F. Stearley, AC

Maj. Ralph A. Snavely, AC

Maj. Earl E. Partridge, AC

Capt. Earl W. Barnes, AC

#### *Department of Command, Staff and Logistics*

Col. Leo A. Walton, AC, Director

Lt. Col. Harland W. Holden, AC

Lt. Col. John Y. York, Jr., AC

Maj. Frederick von H. Kimble, AC

Maj. Roland Birnn, AC

Maj. Augustine F. Shea, AC

Maj. Robert C. Oliver, AC

#### *Department of Ground Tactics*

Lt. Col. Charles P. Hall, Inf, Director (from 5 June 1939 to 2 January 1940)

Lt. Col. Sidney Erickson, Inf, Director (from 2 January 1940 to 29 June 1940)

Lt. Col. John C. Mullenix, Cav

Maj. Allison J. Barnett, Inf

Maj. Fenton G. Epling, CAC (from 5 June 1939 to 2 April 1940)

Maj. George W. Ricker, CAC (from 5 December 1939 to 29 June 1940)

Maj. Alden H. Waitt, CWS

Capt. Stephen C. Lombard, FA

#### *Extension Course Section*

Lt. Col. Byron T. Burt, AC, Director

Lt. Col. Harvey H. Holland, AC, Assistant Director (from 2 May 1940 to 29 June 1940)

## *AIR CORPS TACTICAL SCHOOL*

### **1940-1941**

#### *School Staff*

- Brig. Gen. Walter R. Weaver, AC, Commandant (from 1 July 1940 to 7 August 1940)
- Col. Edgar P. Sorensen, AC, Commandant (from 8 August 1940 to 30 June 1941)
- Col. Millard F. Harmon, AC, Assistant Commandant (from 1 July 1940 to 1 July 1940)
- Lt. Col. Harland W. Holden, AC, Secretary (from 1 July 1940 to 8 September 1940)
- Maj. Robert C. Oliver, AC, Secretary (from 9 September 1940 to 30 June 1941)
- 1st Lt. Thomas B. DeRamus, AC, Assistant Secretary (from 13 May 1941 to 30 June 1941)
- Col. David S. Seaton, AC, Officer Librarian (from 16 August 1940 to 30 June 1941)
- 1st Lt. Thomas J. Taylor, AC, Assistant Officer Librarian (from 26 April 1941 to 30 June 1941)
- 1st Lt. Merrill W. Doss, AC, Assistant Officer Librarian (from 6 June 1941 to 30 June 1941)
- 1st Lt. George N. Robinson, Jr., AC, Officer in Charge, Reproduction (from 26 May 1941 to 30 June 1941)

#### *Instructors*

##### *Academic Department*

- Maj. Robert C. Oliver, AC (entire period)
- Lt. Col. John Y. York, Jr., AC (until relieved 14 July 1940)
- Lt. Col. Allison J. Barnett, Inf (until relieved 13 August 1940)
- Maj. George W. Ricker, CAC (until relieved 16 August 1940)
- Maj. Alden H. Waitt, CWS (until relieved 17 July 1940)
- Maj. Muir S. Fairchild, AC (until relieved 10 July 1940)
- Maj. Frederick von H. Kimble, AC (until relieved 12 July 1940)
- Maj. Byron E. Gates, AC (until relieved 10 July 1940)
- Maj. Charles E. Thomas, Jr., AC (until relieved 21 March 1941)
- Maj. Randolph P. Williams, AC (until relieved 7 July 1940)
- Maj. James E. Parker, AC (until relieved 9 July 1940)
- Maj. Augustine F. Shea, AC (until relieved 25 July 1940)
- Maj. Ralph A. Snively, AC (until relieved 9 July 1940)
- Capt. Stephen C. Lombard, FA (until relieved 2 July 1940)
- Capt. Earl W. Barnes, AC (until relieved 13 August 1940)

##### *Training Literature Unit*

- Lt. Col. Byron T. Burt, AC (until relieved 21 September 1940)
- Lt. Col. Harvey H. Holland, AC (entire period)

## APPENDIX 2

Lt. Col. Elmer J. Bowling, AC (entire period)

### 1941-1942

#### *School Staff*

##### *Commandant*

Col. Edgard P. Sorensen, AC (from 1 July 1941 to 16 July 1941)

Col. David S. Seaton, AC (from 17 July 1941 to 19 August 1941)

Col. William D. Wheeler, AC (from 20 August 1941 to 2 November 1941)

Col. Elmer J. Bowling, AC (from 3 November 1941 to 5 January 1942)

Lt. Col. John A. Greene, AC (from 6 January 1942 to 30 June 1942)

##### *Assistant Commandant*

Col. David S. Seaton, AC (from 1 July 1941 to 16 July 1941)

Lt. Col. Harvey H. Holland, AC (from 17 July 1941 to 12 August 1941)

Lt. Col. Elmer J. Bowling, AC (from 13 August 1941 to 2 November 1941)

Maj. Robert C. Oliver, AC (from 3 November 1941 to 8 November 1941)

Maj. John A. Greene, AC (from 9 November 1941 to 5 January 1942)

Maj. Hyter H. Ruggles, AC (from 6 January 1942 to 18 April 1942)

Capt. Arthur D. Etienne, AC (from 19 April 1942 to 19 May 1942)

Capt. George N. Robinson, Jr., AC (from 20 May 1942 to 31 May 1942)

Maj. Guy R. Windrom, AC (from 1 June 1942 to 30 June 1942)

##### *Secretary*

Maj. Robert C. Oliver, AC (from 1 July 1941 to 8 November 1941)

Capt. Thomas B. DeRamus, AC (from 9 November 1941 to 15 May 1942)

1st Lt. Stuart A. Warren, AC (from 16 May 1942 to 30 June 1942)

##### *Assistant Secretary*

Capt. Thomas B. DeRamus, AC (from 1 July 1941 to 8 November 1941)

Capt. George N. Robinson, Jr., AC (from 9 November 1941 to 15 May 1942)

##### *Officer Librarian*

Col. David S. Seaton, AC (from 1 July 1941 to 30 July 1941)

Capt. Merrill W. Doss, AC (from 31 July 1941 to 22 April 1942)

Capt. George N. Robinson, Jr., AC (from 23 April 1942 to 30 June 1942)

##### *Officer in Charge, Reproduction*

Capt. George N. Robinson, Jr., AC (from 1 July 1941 to 28 January 1942)

Maj. Hyter H. Ruggles, AC (from 29 January 1942 to 18 April 1942)

## AIR CORPS TACTICAL SCHOOL

### *Instructors*

#### *Training Literature Unit*

- Lt. Col. Harvey H. Holland, AC (from 1 July 1941 to 12 August 1941)
  - Lt. Col. Elmer J. Bowling, AC (from 1 July 1941 to 3 November 1941)
  - Lt. Col. John A. Greene, AC (from 18 August 1941 to 5 January 1942)
  - Maj. Guy R. Windrom, AC (from 17 July 1942 to 30 June 1942)
  - Maj. John F. McNeill, AC (from 22 September 1941 to 30 June 1942)
  - Capt. Arthur D. Etienne, AC (from 8 December 1941 to 30 June 1942)
  - Capt. Clyde S. DeMonbrun, AC (from 21 August 1941 to 14 May 1942)
  - Capt. Nathan M. Faulk, AC (from 4 September 1941 to 30 June 1942)
  - Capt. Vincent S. Lamb, AC (from 3 July 1941 to 30 June 1942)
  - Capt. John S. Scott, AC (from 15 September 1941 to 30 June 1942)
  - Capt. William S. Chambers, AC (from 10 October 1941 to 30 June 1942)
  - 1st Lt. Wayne E. Scrivener, AC (from 21 July 1941 to 15 May 1942)
  - 1st Lt. Milton M. Norton, AC (from 7 August 1941 to 30 June 1942)
  - 1st Lt. Joseph P. Sell, Jr., AC (from 20 August 1941 to 30 June 1942)
  - 1st Lt. Stuart A. Warren, AC (from 27 August 1941 to 30 June 1942)
  - 1st Lt. Lawrence H. Haskins, Jr., AC (from 11 September 1941 to 30 June 1942)
  - 1st Lt. Walter M. Fenner, Jr., AC (from 4 October 1941 to 14 May 1942)
  - 1st Lt. Maurice R. Demers, AC (from 21 August 1941 to 29 May 1942)
  - 1st Lt. Francis B. Alexander, AC (from 11 August 1941 to 28 April 1942)
  - 1st Lt. Joseph R. Lloyd, AC (from 11 August 1941 to 6 May 1942)
  - 1st Lt. John A. Dilworth, III, AC (from 7 September 1941 to 16 May 1942)
- (Detached Service from 7 January 1942 to 16 May 1942)

#### *Academic Department*

Classes were suspended during the school year 1940-1941, and no officers were on duty at the Army Air Forces Tactical School as instructors.

## Appendix 3

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### Air Corps Tactical School Graduates, By Class, 1920-1940

Class & Name	Rank	Branch
<b>1920-1921</b>		
BISSELL, Clayton L.	1st Lt.	Air Service
BLACKBURN, Thomas W.	1st Lt.	Air Service
EASTERBROOK, Arthur E.	Captain	Air Service
HANLEY, Thomas J., Jr.	Major	Air Service
JOHNSON, Davenport	Major	Air Service
KNIGHT, Louis R.	Captain	Air Service
LAWSON, Walter R.	Captain	Air Service
McNARNEY, Joseph T.	Major	Air Service
MILLING, Thomas DeW.	Major	Air Service
REYNOLDS, Clearton H.	Captain	Air Service
WALTON, Leo A.	Major	Air Service
<b>1921-1922</b>		
BROOKS, Arthur R.	Captain	Air Service
BROWER, Gerald E.	Major	Air Service
COLGAN, John G.	Captain	Air Service
DRAYTON, Harry C.	Captain	Air Service
HALE, Frasier	Captain	Air Service
HEISEN, Horace N.	Captain	Air Service
HOUGH, Romeyn B.	Captain	Air Service
HOUSE, Edwin J.	Captain	Air Service
PARKS, Victor, Jr.	Captain	Chemical Warfare
PHILLIPS, Charles T.	Captain	Air Service
STURCKEN, Harold E.	Captain	Air Service
VOSS, Thomas S.	Captain	Air Service

## *AIR CORPS TACTICAL SCHOOL*

### **1922-1923**

BEAM, Rosenham	Captain	Air Service
BRADY, Francis M.	Captain	Air Service
CLAGETT, Henry B.	Major	Air Service
COKER, Robert	Major	Air Service
FORD, Christopher	1st Lt.	Air Service
GATES, Warner B.	Captain	Air Service
GUIDERA, Albert	Captain	Air Service
HILL, Edmund W.	Captain	Air Service
HOPKINS, Hubert V.	Captain	Air Service
HOUGHLAND, Howard J.	Captain	Air Service
HUNTER, Frank O'D.	1st Lt.	Air Service
JACOBS, Lynwood B.	Captain	Air Service
JOHNSON, George P.	1st Lt.	Air Service
JOUETT, John H.	Major	Air Service
McCHORD, William C.	Major	Air Service
WARREN, George S.	Captain	Air Service
WHEELER, Chilion F.	1st Lt.	Air Service

### **1923-1924**

AUSTIN, Charles B.	1st Lt.	Air Service
BROOKS, John B.	Major	Air Service
BURROWS, Paul E.	1st Lt.	Air Service
DAVIES, Isaiah	1st Lt.	Air Service
DAVIES, John M.	1st Lt.	Air Service
GRAHAM, Harry	Lt. Colonel	Air Service
GRISHAM, James L.	1st Lt.	Air Service
HARDEE, David L.	1st Lt.	Infantry
HARMS, Henry W.	Major	Air Service
LYND, William E.	Captain	Air Service
LYON, Edwin B.	Captain	Air Service
REYNOLDS, John N.	Major	Air Service
SNEED, Albert L.	Major	Air Service
WOOTEN, Ralph H.	Captain	Air Service

### **1924-1925**

BENEDICT, Charles C.	Major	Air Service
BOLAND, Thomas	Captain	Air Service
CHANEY, James E.	Major	Air Service
DUTY, William B.	Major	Air Service
FICKEL, Jacob E.	Major	Air Service
FISHER, Arthur G.	Lt. Colonel	Air Service
FRANK, Walter H.	Major	Air Service

## APPENDIX 3

MARTIN, Frederick L.	Major	Air Service
QUINN, Orlo H.	Captain	Air Service
SEATON, David S.	Captain	Air Service
SPATZ, Carl	Major	Air Service
TINKER, Clarence L.	Major	Air Service
VAN NOSTRAND, Percy E.	Major	Air Service
WHITESIDES, John G.	Captain	Air Service

### 1925-1926

BOURNE, Louis M., Jr.	Captain	U.S. Marine Corps
COLEMAN, Fred H.	Major	Air Corps
DAVIS, Michael F.	Major	Air Corps
DUNCAN, Early E. W.	Captain	Air Corps
FARTHING, William E.	Captain	Air Corps
GEIGER, Harold	Major	Air Corps
HARVEY, Lloyd L.	Captain	Air Corps
HEFFERNAN, Leo G.	Major	Air Corps
HICKAM, Horace M.	Major	Air Corps
KENNEY, George C.	Captain	Air Corps
KNERR, Hugh J.	Major	Air Corps
LUTZ, Charles A.	Major	U.S. Marine Corps
MOTLEY, L. W.	1st Lt.	Air Corps
ROGERS, Ford O.	1st Lt.	U.S. Marine Corps
SARTORIUS, Carlos	Captain	Spanish Army
STREETT, St. Clair	1st Lt.	Air Corps

### 1926-1927

AKIN, Spencer B.	Major	Signal Corps
ARMSTRONG, Francis T.	Major	Field Artillery
BRADLEY, Follett	Major	Air Corps
BUBB, Charles B. B.	Captain	Air Corps
CANDEE, Robert C.	Captain	Air Corps
CHESTER, Einar W.	Captain	Infantry
EPLING, Fenton G.	Captain	Coast Artillery
FARRELL, Walter G.	1st Lt.	U.S. Marine Corps
GOOLRICK, Robert E. M.	Major	Air Corps
HAINES, Oliver L.	Captain	Cavalry
LOHMAN, Eugene A.	Major	Air Corps
MITCHELL, Ralph J.	Captain	U.S. Marine Corps
RADER, Ira A.	Major	Air Corps
REEL, Gordon	Major	Air Reserve
ROYCE, Ralph	Major	Air Corps
SINHASANI, M.	1st Lt.	Siamese Air Service



## AIR CORPS TACTICAL SCHOOL

STENSETH, Martinus	1st Lt.	Air Corps
SVASTI, V. L.	1st Lt.	Siamese Air Service
TURNER, T. C.	Lt. Colonel	U.S. Marine Corps
WESTOVER, Oscar	Major	Air Corps

### 1927-1928

ANDREWS, Frank M.	Major	Air Corps
ARNEMAN, George E.	Major	Field Artillery
BALLARD, Richard H.	Captain	Air Corps
BLATT, Raymond C.	Lieutenant	Cavalry
BONNET, E.	Lieutenant	Argentine Navy
BRETT, George H.	Major	Air Corps
BROWN, Roy S.	Major	Air Corps
CUNNINGHAM, Charles H.	Major	Corps of Engineers
CURRY, John F.	Major	Air Corps
CUTLER, Stuart	Captain	Infantry
DAVIS, J. E.	Captain	U.S. Marine Corps
EVANS, Francis T.	Major	U.S. Marine Corps
HALE, Willis H.	Major	Air Corps
JONES, Junius W.	Major	Air Corps
KROGSTAD, Arnold N.	Major	Air Corps
MORALES, Oscar	Major	Guatemalan Army
MULCAHY, Francis P.	Captain	U.S. Marine Corps
OLDS, Robert	Captain	Air Corps
PHILLIPS, Thomas R.	Captain	Coast Artillery
RICHARDS, Harrison H.C.	Major	Air Corps
SCANLON, Martin F.	Major	Air Corps
STONE, Laurence	Captain	Air Corps
WALSH, Robert LeG.	Major	Air Corps
WISE, William W.	Captain	Chemical Warfare

### 1928-1929

ANDRUS, Burton	Captain	Calvary
BORDEN, Fred G.	Captain	Signal Corps
CAMPBELL, Harold D.	Captain	U.S. Marine Corps
CHAPIN, Frank K.	Major	Calvary
COLE, Ross F.	Captain	Air Corps
CONNELL, Carl W.	Captain	Air Corps
CORDERO, Mario	Captain	Coast Artillery
DeFORD, Earl H.	Captain	Air Corps
DIXON, Vincent B.	Major	Air Corps
DUNCAN, Asa N.	Captain	Air Corps
FERSON, Oliver	Captain	Air Corps

APPENDIX 3

FRASIER, Lyman S.	Major	Infantry
FREAR, Seth H.	Major	Signal Corps
JOHNSTON, Douglas	Captain	Air Corps
LACKLAND, Frank D.	Major	Air Corps
MANGAN, Walter D.	Major	Field Artillery
PEABODY, George H.	Major	Air Corps
PEEK, Norman W.	Major	Air Corps
REARDAN, John D.	Major	Air Corps
ROBINS, Augustine W.	Major	Air Corps
ROWELL, Ross E.	Major	U.S. Marine Corps
RUDOLPH, Jacob H.	Major	Air Corps
WALKER, Kenneth N.	1st Lt.	Air Corps
WALTON, Charles W.	Captain	Chemical Warfare

1929-1930

AMARA, Luang	Lt. Colonel	Siamese Air Service
BARKER, John D.	1st Lt.	Air Corps
BASSICH, Cyril	Captain	Field Artillery
BLACK, Percy G.	Captain	Field Artillery
BRANSON, Harry L.	Captain	Cavalry
BROWN, Robert J., Jr.	1st Lt.	Air Corps
CURRY, James T., Jr.	Major	Air Corps
DEVES, Luang	Major	Siamese Air Service
EGLIN, Frederick I.	Captain	Air Corps
FITZ, Harold G.	Major	Field Artillery
FLICKINGER, Harrison W.	Captain	Air Corps
HODGES, James P.	1st Lt.	Air Corps
HOYT, Ross G.	Captain	Air Corps
LADD, Arthur K.	Captain	Air Corps
LEWIS, John E.	Major	Field Artillery
MAJOR, Harold C.	Captain	U.S. Marine Corps
METZGER, Earl H.	Major	Coast Artillery
MILEY, William M.	1st Lt.	Infantry
MILLER, Henry J. F.	Major	Air Corps
MOORE, James T.	Captain	U.S. Marine Corps
MOORE, J. Merriman	Major	Infantry
MOORE, John I.	Captain	Air Corps
QUESENBERRY, Marshall H.	Major	Infantry
ROBINSON, Charles McK.	1st Lt.	Air Corps
SHUFELT, James V. V.	Captain	Cavalry
STRATEMEYER, George E.	Major	Air Corps
SZILAGYI, Nicholas	Captain	Infantry
TYNDALL, Frank B.	1st Lt.	Air Corps

## *AIR CORPS TACTICAL SCHOOL*

WEIR, Benjamin G.	Major	Air Corps
WOODS, Louis E.	Captain	U.S. Marine Corps
YOUNT, Barton K.	Major	Air Corps

### **1930-1931**

ANDREWS, William V.	Captain	Air Corps
BEATON, Harold W.	1st Lt.	Air Corps
BOONE, Abbott	Lt. Colonel	Field Artillery
BREENE, Robert G.	Captain	Air Corps
BROWNE, Harrison C.	Major	Infantry
CADAVAL, F. J.	1st Lt.	Argentine Navy
CHAUNCEY, Charles C.	1st Lt.	Air Corps
CHENNAULT, Claire L.	Captain	Air Corps
COLLAR, Gilbert T.	Captain	Air Corps
COUSINS, Ralph P.	Major	Air Corps
EDWARDS, Idwal H.	Captain	Air Corps
EUBANK, Eugene L.	Captain	Air Corps
FITZGERALD, Shepler W.	Major	Air Corps
FLANIGEN, Barrington L.	Major	Coast Artillery
FLINT, Harry A.	Major	Cavalry
FRENCH, Charles A.	Major	Coast Artillery
GLESSNER, Hamilton H. T.	Captain	Signal Corps
GRAVELY, William S.	Captain	Air Corps
HARRINGTON, Arthur S.	Major	Field Artillery
HARRIS, Field	Captain	U.S. Marine Corps
HERMAN, Harrison	Major	Cavalry
HYDE, James F. C.	Captain	Corps of Engineers
JONES, William H., Jr.	Major	Infantry
LARSON, Westside T.	1st Lt.	Air Corps
McDONALD, George C.	1st Lt.	Air Corps
McHENRY, George A.	1st Lt.	Air Corps
McKIERNAN, William J., Jr.	1st Lt.	Air Corps
MEDARIS, Lester N.	Captain	U.S. Marine Corps
MERRITT, Lewie G.	Captain	U.S. Marine Corps
MILLER, Lester T.	Captain	Air Corps
MOON, Odas	1st Lt.	Air Corps
OLDFIELD, Charles B.	Major	Air Corps
PURSLEY, Charles A.	Captain	Air Corps
REED, Walter J.	Captain	Air Corps
STROM, Gustaf Q.	Captain	Swedish Royal AF
WHEELER, William D.	Captain	Air Corps
WHITEHEAD, Ennis C.	Captain	Air Corps

APPENDIX 3

WILSON, Donald	Captain	Air Corps
YOUNG, Harry H.	Captain	Air Corps
<b>1931-1932</b>		
ADLER, Elmer E.	Captain	Air Corps
BOND, Oliver J.	Major	Chemical Warfare
BURWELL, Harvey S.	Major	Air Corps
BUTLER, William O.	Captain	Air Corps
CHANDLER, Clark P.	Lt. Colonel	Cavalry
CRAIG, Howard A.	1st Lt.	Air Corps
CROM, William H.	Major	Air Corps
CUMMINGS, Charles M.	1st Lt.	Air Corps
EASTERDAY, George W.	Major	Coast Artillery
ECHOLS, Oliver P.	Major	Air Corps
EMMONS, Delos C.	Major	Air Corps
ENNIS, Arthur I.	1st Lt.	Air Corps
EVANS, William T.	Captain	U.S. Marine Corps
GALE, Guy H.	Captain	Air Corps
GEORGE, Harold L.	Captain	Air Corps
GILKESON, Adlai H.	Major	Air Corps
HAYNES, Caleb V.	1st Lt.	Air Corps
HICKEY, Lawrence P.	Captain	Air Corps
KAUCH, Robert	Captain	Air Corps
KENNEDY, Frank M.	Major	Air Corps
KIEL, Emil C.	Captain	Air Corps
KIRK, James	Major	Ordnance
KOENIG, Theodore J.	Captain	Air Corps
LOVELL, George E. Jr.	Major	Air Corps
McKINNON, Morton H.	1st Lt.	Air Corps
McREYNOLDS, Edwin R.	1st Lt.	Air Corps
MULLINS, Charles L., Jr.	Captain	Infantry
MUSE, Donald P.	Major	Air Corps
NETHERWOOD, Douglas B.	Major	Air Corps
PEABODY, Paul E.	Major	Infantry
PEEK, William H.	Lt. Colonel	Field Artillery
RALEY, Edward W.	Captain	Air Corps
REID, Walter H.	Captain	Air Corps
RISTINE, Harold H.	Major	Field Artillery
STRAHM, Victor H.	Captain	Air Corps
TOWNSEND, Spencer A.	Major	Cavalry
WALLER, Alfred E.	1st Lt.	Air Corps
WASH, Carlyle H.	Major	Air Corps
WELSHMER, Robert R.	Major	Coast Artillery

## AIR CORPS TACTICAL SCHOOL

### 1932-1933

ANDERSON, Glenn P.	Major	Coast Artillery
BARNES, Theodore	Major	Chemical Warfare
BARRETT, Henry L.	Captain	Infantry
BEVERLY, George H.	1st Lt.	Air Corps
BOBZEIN, Edwin B.	1st Lt.	Air Corps
CARTER, Warren R.	1st Lt.	Air Corps
CORKILLE, John D.	1st Lt.	Air Corps
DAVIDSON, Howard C.	Major	Air Corps
ELLIS, Sam L.	Captain	Air Corps
GALLOWAY, Floyd E.	Captain	Air Corps
GARDNER, Grandison	Captain	Air Corps
HADDON, Julian B.	1st Lt.	Air Corps
HARMON, Hubert R.	Major	Air Corps
HAYES, Wolcott P.	Captain	Air Corps
HINE, Virgil	Captain	Air Corps
HORNSBY, Aubrey	Captain	Air Corps
JOHNSON, Byron F.	Captain	U.S. Marine Corps
JOHNSON, Harry A.	Captain	Air Corps
KASE, John A.	1st Lt.	Air Corps
KING, Clifford B.	Major	Field Artillery
KRAUS, Walter F.	Captain	Air Corps
LAYMAN, Walter G.	Captain	Infantry
McCLELLAN, Hez	1st Lt.	Air Corps
McCOY, Wendell B.	Captain	Air Corps
McDONNELL, John C.	Major	Air Corps
MERRICK, Louis M.	1st Lt.	Air Corps
MILLS, Harry H.	1st Lt.	Air Corps
MILLS, Samuel P.	1st Lt.	Air Corps
MORGAN, John R.	1st Lt.	Air Corps
OLDFIELD, Homer R.	Major	Coast Artillery
PATRICK, Frederick I.	1st Lt.	Air Corps
PAUL, Frank M.	Captain	Air Corps
PETZING, Edwin R.	Captain	Signal Corps
PIERCE, John T., Jr.	Major	Cavalry
PITTS, Younger A.	Captain	Air Corps
PRIME, Charles P.	Captain	Air Corps
RYAN, William Ord	Major	Air Corps
SMITH, Lowell H.	Captain	Air Corps
SULLIVAN, Charles W.	Captain	Air Corps
TRIGG, Otto B.	Major	Cavalry
WOOD, Myron R.	Captain	Air Corps

APPENDIX 3

1933-1934

AUSTIN, Thomas A., Jr.	Captain	Infantry
BANFILL, Charles Y.	Captain	Air Corps
BARNETT, Allison J.	Major	Infantry
BEAU, Lucas V., Jr.	Captain	Air Corps
BEVERIDGE, John, Jr.	Captain	Air Corps
BIRNN, Roland	1st Lt.	Air Corps
BOND, Carlton F.	1st Lt.	Air Corps
BURT, Byron T., Jr.	Captain	Air Corps
DAWSON, Leo H.	1st Lt.	Air Corps
DAY, Robin A.	Captain	Air Corps
EATON, Samuel C.	Captain	Air Corps
EVANS, Frederick W.	Captain	Air Corps
GARDNER, John H.	Captain	Air Corps
GOODRICH, David W.	1st Lt.	Air Corps
GOTHLIN, Oliver P., Jr.	Captain	Air Corps
HAMILTON, Arthur G.	Captain	Air Corps
HICKS, Ronald A.	1st Lt.	Air Corps
HOWARD, Charles H.	1st Lt.	Air Corps
KENNEY, Cornelius J.	Captain	Air Corps
LARKIN, Claude A.	Captain	U.S. Marine Corps
LIGGETT, Arthur G.	Captain	Air Corps
MARTENSTEIN, Austin W.	1st Lt.	Air Corps
McDANIEL, Arthur B.	Captain	Air Corps
McMULLEN, Clements	Captain	Air Corps
McNEIL, Guy L.	Captain	Air Corps
MELOY, Vincent J.	Captain	Air Corps
MUHLENBERG, H. C. Kress	Lt. Colonel	Air Corps
PALMER, George M.	Captain	Air Corps
PATRICK, John B.	Captain	Air Corps
PECK, Walter R.	Captain	Air Corps
RAMEY, Howard K.	Captain	Air Corps
SAVILLE, Gordon P.	1st Lt.	Air Corps
SCHILT, Christain F.	1st Lt.	U.S. Marine Corps
SHEARER, Thomas R.	Captain	U.S. Marine Corps
SMITH, Lotha A.	Captain	Air Corps
SWEELEY, William R.	Captain	Air Corps
THOMAS, Arthur	Captain	Air Corps
THOMPSON, Bernard S.	Captain	Air Corps
WATSON, Dayton D.	Captain	Air Corps
WEBSTER, Robert M.	1st Lt.	Air Corps
WHITTEN, Lyman P.	1st Lt.	Air Corps

## *AIR CORPS TACTICAL SCHOOL*

WILLIAMS, Robert B.	1st Lt.	Air Corps
WILSON, Joseph A.	Captain	Air Corps
<b>1934-1935</b>		
ABBEY, Evers	Captain	Air Corps
AMIS, William N.	Captain	Air Corps
BRANSHAW, Charles E.	Captain	Air Corps
BROWN, Raymond R.	Captain	Air Corps
BURGE, Vernon L.	Major	Air Corps
CHAPMAN, Thomas H.	Captain	Air Corps
CRUMRINE, Clarence E.	Captain	Air Corps
DOUGLAS, Charles	Captain	Air Corps
DOUGLASS, Robert W., Jr.	1st Lt.	Air Corps
EDWARDS, Sheffield	1st Lt.	Field Artillery
FAIRCHILD, Muir S.	Captain	Air Corps
FLOOD, William J.	Captain	Air Corps
GATES, Byron	Captain	Air Corps
GILES, Barney M.	Captain	Air Corps
GILES, Benjamin F.	Captain	Air Corps
GLASGOW, Lawrence B.	Major	Infantry
GLENN, Edward E.	Captain	Air Corps
GONZALEZ, Javier G.	1st Lt.	Mexican Army
GUYMON, Vernon N.	Captain	U.S. Marine Corps
HANSELL, Haywood S., Jr.	1st Lt.	Air Corps
HARMON, Benjamin F.	Captain	Coast Artillery
HEWITT, Leland R.	Captain	Air Corps
HOOD, Reuben C., Jr.	2d Lt.	Air Corps
KENNEDY, Emile T.	1st Lt.	Air Corps
KENYON, Horace S., Jr.	Captain	Air Corps
KILNER, Walter G.	Major	Air Corps
KIMBLE, Frederick von H.	Captain	Air Corps
KINCAID, Alvan C.	Captain	Air Corps
KUTER, Laurence S.	1st Lt.	Air Corps
MAITLAND, Lester J.	Captain	Air Corps
MATHENY, William A.	1st Lt.	Air Corps
McCULLOCH, John M.	Captain	Air Corps
McCUNE, Milo	Captain	Air Corps
MURPHY, William H.	Captain	Signal Corps
OLIVER, Robert C.	1st Lt.	Air Corps
OWENS, Ray L.	Captain	Air Corps
PROPST, Rudolph W.	Captain	Air Corps
RICHTER, John P.	Captain	Air Corps
ROBBINS, Oliver K.	Captain	Air Corps

APPENDIX 3

RODIECK, Leonard H.	1st Lt.	Air Corps
SANDERSON, Lawson H. M.	Captain	U.S. Marine Corps
SCHRAMM, Ned	Captain	Air Corps
SKANSE, Peter E.	Captain	Air Corps
SKEMP, Samuel C.	Captain	Air Corps
STEARLEY, Ralph F.	1st Lt.	Air Corps
STROH, Claire	1st Lt.	Air Corps
TALBOT, Clarence P.	Captain	Air Corps
TEVFIK, Mehmet	Captain	Turkish Army
UMSTEAD, Stanley M.	Captain	Air Corps
UPSTON, John E.	Captain	Air Corps
VANAMAN, Arthur W.	Captain	Air Corps
VANCE, Reginald F. C.	1st Lt.	Air Corp
VANDENBERG, Hoyt S.	1st Lt.	Air Corps
WALLACE, William J.	Captain	U.S. Marine Corps
WEDDINGTON, Harry	Captain	Air Corps
WEIKERT, John M.	1st Lt.	Air Corps
WHEELER, Walter L.	1st Lt.	Air Corps
WRIGHT, William B.	Major	Air Corps
ZIYA, Mustafa	Captain	Turkish Army

1935-1936

BAYLEY, Eugene B.	Captain	Air Corps
BEERY, Levi L.	Captain	Air Corps
BIVINS, Hugh A.	Captain	Air Corps
CALDWELL, Charles H.	Captain	Air Corps
CANNON, John K.	Captain	Air Corps
CHIDLAW, Benjamin W.	Captain	Air Corps
CLARK, Harold L.	Captain	Air Corps
CLARK, John M.	Captain	Air Corps
CONNELL, Samuel M.	Captain	Air Corps
CRAWFORD, Alden R.	Captain	Air Corps
CUMBERPATCH, James T.	Captain	Air Corps
CUSHMAN, Thomas J.	Captain	U.S. Marine Corps
DAVIDSON, Joseph H.	Major	Air Corps
DAYTON, Lewis A.	Captain	Air Corps
DULLIGAN, John H.	Captain	Air Corps
DUNCAN, Claude E.	Captain	Air Corps
EAKER, Ira C.	Major	Air Corps
ELY, Louis B.	Captain	Field Artillery
FAIR, Ford L.	1st Lt.	Air Corps
FERGUSON, Homer W.	Captain	Air Corps
FERRIS, Carlisle I.	1st Lt.	Air Corps



## AIR CORPS TACTICAL SCHOOL

FITZGERALD, Donald D.	Captain	Air Corps
FOSTER, Thad V.	Captain	Air Corps
GAFFNEY, Dale V.	Captain	Air Corps
GLENN, Albert F.	Captain	Air Corps
HALVERSON, Harry A.	Captain	Air Corps
HOAG, Earl S.	Captain	Air Corps
HODGE, John R.	Major	Infantry
HOFFMAN, Edward L.	Lt. Colonel	Air Corps
HOPPOUGH, Clay I.	Major	Signal Corps
HORN, Charles A.	Captain	Air Corps
JOHNSON, Cortlandt S.	Captain	Air Corps
JONES, Aaron E.	Captain	Air Corps
KELLOGG, Crawford M.	Captain	Chemical Warfare
KEPNER, William E.	Major	Air Corps
LANGMEAD, Edmund C.	Captain	Air Corps
LINDSEY, Malcolm F.	Major	Infantry
LONGFELLOW, Newton	Captain	Air Corps
LOWE, Thomas M.	Captain	Air Corps
LYON, Alfred J.	Captain	Air Corps
MAGEE, Richard H.	Captain	Air Corps
MANN, Merrill D.	Captain	Air Corps
MAUGHAN, Russell L.	Captain	Air Corps
MAYHUE, Don W.	Captain	Air Corps
McCATTY, Kenneth	Major	Coast Artillery
McCLELLAND, Harold M.	Major	Air Corps
McGINNIS, Harold A.	Captain	Air Corps
McKITTRICK, William L.	Captain	U.S. Marine Corps
McPIKE, George V.	Captain	Air Corps
MILLER, Leland W.	Captain	Air Corps
MOON, Ernest S.	Captain	Air Corps
MORRIS, William C.	Captain	Air Corps
OLD, William D.	Captain	Air Corps
O'NEILL, Raymond E.	Major	Air Corps
PARKER, James E.	Captain	Air Corps
PHILLIPS, Donald B.	Captain	Air Corps
POWERS, Edward M.	Captain	Air Corps
QUESADA, Elwood R.	1st Lt.	Air Corps
RIDDERHOF, Stanley E.	Captain	U.S. Marine Corps
SCHNEIDER, Max F.	Captain	Air Corps
SHARON, Leon E.	Captain	Air Corps
SHEA, Augustine F.	Captain	Air Corps
SNAVELY, Ralph A.	Captain	Air Corps
SORENSEN, Edgar P.	Major	Air Corps

APPENDIX 3

THOMAS, Charles E., Jr.	Captain	Air Corps
TOOHER, Bernard J.	Captain	Air Corps
TWINING, Nathan F.	Captain	Air Corps
WOLFE, Kenneth B.	Captain	Air Corps
WRIGHT, Bennett W.	Lieutenant	U.S. Navy

1936-1937

ANDERSON, Orvil A.	Major	Air Corps
BACKES, Charles	Captain	Air Corps
BARNES, Earl W.	Captain	Air Corps
BARTRON, Harold A.	Major	Air Corps
BEVANS, James M.	Captain	Air Corps
BLAIR, Shiras A.	Major	Air Corps
BOYDEN, Hayne D.	Captain	U.S. Marine Corps
BRICE, William O.	Captain	U.S. Marine Corps
CARR, Lawrence J.	Captain	Air Corps
CASTOR, Bernard T.	Major	Air Corps
CHAMBERS, William E.	Major	Infantry
DAHLQUIST, John E.	Major	Infantry
DAVIES, Clinton W.	Captain	Air Corps
DICE, Fay O.	1st Lt.	Air Corps
DUNN, Ray A.	Major	Air Corps
ENT, Uzal G.	Captain	Air Corps
EVEREST, Frank F., Jr.	1st Lt.	Air Corps
FINTER, Clyde V.	Major	Air Corps
FRITCH, Donald F.	Captain	Air Corps
GEORGE, Harold H.	Major	Air Corps
GILLESPIE, James M.	Major	Air Corps
GIVENS, James D.	Major	Air Corps
GRANT, David N. W.	Lt. Colonel	Medical Corps
GREGG, Kirtley J.	Captain	Air Corps
HACKETT, Frank D.	Major	Air Corps
HARPER, Robert W.	Captain	Air Corps
HARVEY, Alva L.	Captain	Air Corps
HAWKINS, John R.	Captain	Air Corps
HERRICK, Hugh N.	Major	Coast Artillery
HOLDEN, Harlan W.	Major	Air Corps
HOPKINS, Frederick M., Jr.	Major	Air Corps
HOPKINS, Joseph G.	1st Lt.	Air Corps
IGNICO, Robert V.	Major	Air Corps
JONES, Edward D.	Major	Air Corps
JONES, Ulysses G.	Major	Air Corps
KEESLING, Lloyd N.	Lt. Colonel	Air Corps

## AIR CORPS TACTICAL SCHOOL

KINNISON, Henry L., Jr.	Captain	Cavalry
LAIRD, John A., Jr.	Major	Air Corps
LAWTON, Malcolm S.	Major	Air Corps
LINGLE, David G.	Captain	Air Corps
LOUTZENHEISER, Joe L.	Captain	Air Corps
LYNCH, Edmund C.	Captain	Air Corps
McBLAIN, John F.	Captain	Air Corps
McCOY, George, Jr.	1st Lt.	Air Corps
MEGEE, Vernon E.	Captain	U.S. Marine Corps
MONAHAN, John W.	Major	Air Corps
NISSLEY, John K.	Captain	Air Corps
NOWLAND, Bob E.	Major	Air Corps
PARKER, Elton C.	Lieutenant	U.S. Navy
PARTRIDGE, Earle E.	Captain	Air Corps
PEASLEE, Budd J.	1st Lt.	Air Corps
POLK, George W., Jr.	Major	Air Corps
PORTER, William N.	Lt. Colonel	Chemical Warfare
RIVES, Tom C.	Major	Signal Corps
ROBERTSON, William A. R.	1st Lt.	Air Corps
ROBINSON, Frank H.	1st Lt.	Air Corps
ROSS, Morrill	Major	Field Artillery
SCHLATTER, David M.	Captain	Air Corps
SMITH, Joseph	Captain	Air Corps
SMITH, Wallace G.	Major	Air Corps
STOWELL, James S.	Captain	Air Corps
TAYLOR, Yantis H.	Captain	Air Corps
TOURTELLOT, George P.	Major	Air Corps
WAITT, Alden H.	Major	Chemical Warfare
WELSH, William W.	Major	Air Corps
WHITSON, Wallace E.	Captain	Air Corps
WILLIAMS, Paul L.	Major	Air Corps
WILSON, Harry E.	1st Lt.	Air Corps
WILSON, Russell A.	1st Lt.	Air Corps
WOLFNBARGER, Willard R.	Captain	Air Corps
ZANE, Robert T.	Major	Air Corps

### 1937-1938

ALEXANDER, Edward H.	1st Lt.	Air Corps
ALLAN, Carlisle V.	Captain	Infantry
BOYD, William L.	Major	Air Corps
BRADLEY, Clifford P.	Captain	Air Corps
BURKE, Lawrence T.	Captain	U.S. Marine Corps
CARROLL, Franklin O.	Major	Air Corps

### APPENDIX 3

COATES, Philip D.	1st Lt.	Air Corps
COOK, Orval R.	Captain	Air Corps
CRAW, Demas T.	Captain	Air Corps
CROCKER, Harrison G.	Major	Air Corps
CULLEN, Paul T.	1st Lt.	Air Corps
DAVASHER, Glenn L.	Captain	Air Corps
DAVIS, Everett S.	Captain	Air Corps
DOWMAN, Charles H.	Major	Air Corps
DUNTON, Delmar H.	Major	Air Corps
ELLINGER, David J.	Captain	Air Corps
ENGLER, Howard E.	Captain	Air Corps
EVANS, Bryan	Captain	Field Artillery
FISHER, Ralph E.	Captain	Air Corps
FORSYTH, Andrew E.	Captain	Cavalry
GOODRICH, Donald R.	Captain	Air Corps
GROSS, Mervin E.	Captain	Air Corps
HANSEN, George W.	1st Lt.	Air Corps
HARDY, Wilfrid H.	Captain	Air Corps
HEGENBERGER, Albert F.	Major	Air Corps
HELMICK, Charles G.	Lt. Colonel	Field Artillery
HENRY, Cecil E.	Captain	Air Corps
KAYE, Minton W.	1st Lt.	Air Corps
KIMES, Ira L.	Captain	U.S. Marine Corps
KNAPP, Robert D.	Major	Air Corps
KREUTER, Robert H.	Captain	Coast Artillery
KYLE, Reuben, Jr.	Captain	Air Corps
LANDERS, Sigmund F.	Major	Air Corps
LAWRENCE, Charles W.	Captain	Air Corps
MARRINER, Alfred W.	Major	Air Corps
MAXWELL, Warren A.	Major	Air Corps
McCORMICK, Harlan T.	Captain	Air Corps
McDUFFIE, Jasper K.	Major	Air Corps
McGREGOR, Kenneth C.	Major	Air Corps
McLEAN, Gordon A.	Lieutenant	U.S. Navy
MESSER, Herbert G.	Captain	Signal Corps
MOFFAT, Reuben C.	Major	Air Corps
MYERS, Charles T.	Captain	Air Corps
NIERGARTH, Omer O.	Major	Air Corps
NUGENT, Richard E.	Captain	Air Corps
NUTT, Clifford C.	Major	Air Corps
RICH, Clyde K.	Captain	Air Corps
RIDENOUR, Carlyle H.	Major	Air Corps
ROBBINS, Edward M.	Major	Air Corps

## AIR CORPS TACTICAL SCHOOL

SAVAGE, Mills S.	1st Lt.	Air Corps
SCHOENLEIN, Robert L.	1st Lt.	Air Corps
SCHOW, Robert A.	Captain	Infantry
SCHULGEN, George F.	Captain	Air Corps
SELZER, Edgar T.	Captain	Air Corps
SHIVELY, James C.	Major	Air Corps
SMITH, Paul R.	Captain	Chemical Warfare
SPARHAWK, George H.	Captain	Air Corps
STARKEY, Benjamin T.	Captain	Air Corps
TIMBERLAKE, Patrick W.	Captain	Air Corps
TOWLE, Stewart W., Jr.	Captain	Air Corps
WARREN, John W.	Captain	Air Corps
WASSER, Lee Q.	Captain	Air Corps
WATNEE, Lloyd H.	1st Lt.	Air Corps
WEDDINGTON, Leonard D.	Major	Air Corps
WEYLAND, Otto P.	Captain	Air Corps
WHITE, Thomas B.	Captain	U.S. Marine Corps
WHITE, Thomas D.	Captain	Air Corps
WHITELEY, John F.	Major	Air Corps
WILLIAMS, John G.	Major	Air Corps
WIMSATT, Robert W. C.	Captain	Air Corps
WINN, Raymond L.	1st Lt.	Air Corps
YEAGER, Hobart R.	Captain	Air Corps

### 1938-1939

ALMOND, Edward M.	Lt. Colonel	Infantry
ARNETT, Charles T.	1st Lt.	Air Corps
BAXTER, Henry R.	Captain	Air Corps
BLESSLEY, Rowland C. W.	Major	Air Corps
BRYTE, Walter G., Jr.	Captain	Air Corps
BUMP, Arthur L., Jr.	Captain	Air Corps
BURWELL, James B.	Captain	Air Corps
CABELL, Charles P.	Captain	Air Corps
CHOATE, Robert E. L.	Captain	Air Corps
CLUCK, James C.	Major	Air Corps
COLEMAN, Frank J.	Captain	Air Corps
CRANE, Carl J.	Captain	Air Corps
DALY, Maurice F.	Captain	Air Corps
DeARMOND, James K.	Captain	Air Corps
DEICHELMANN, Matthew K.	Captain	Coast Artillery
DOYLE, John P., Jr.	Captain	Air Corps
DUTTON, Donald L.	Major	Coast Artillery
GAINES, Edmund P.	Major	Air Corps

APPENDIX 3

GERHARD, Frederick W.	Captain	Chemical Warfare
GIBBS, David R.	Captain	Air Corps
GRIFFISS, Townsend	Captain	Air Corps
HARMAN, Leonard F.	Captain	Air Corps
HARRIS, Ray G.	Major	Air Corps
HARRIS, Samuel R., Jr.	Captain	Air Corps
HOLLAND, Harvey H.	Major	Air Corps
JAMISON, Glen C.	Captain	Air Corps
JEROME, Clayton C.	Major	U.S. Marine Corps
JOHNSON, Alfred H.	Captain	Air Corps
JONES, John N.	Captain	Air Corps
KELLY, Oakley G.	Major	Air Corps
KIEFER, Homer W.	Captain	Field Artillery
KINGMAN, Allen F.	Lt. Colonel	Infantry
LANAGAN, William M.	Major	Air Corps
LEE, Walter S.	Captain	Air Corps
LOBER, Clarence B.	Major	Air Corps
LYNCH, Frederick D.	Major	Air Corps
MALONE, A. J. Kerwin	Captain	Air Corps
MARTIN, Darwin D.	Captain	Coast Artillery
McCORMICK, John H.	Captain	Air Corps
McGREGOR, George W.	Captain	Air Corps
McNAUGHTON, Kenneth P.	Captain	Air Corps
MINTY, Russell J.	Captain	Air Corps
MOLLISON, James A.	Major	Air Corps
MOORE, Aubry L.	Captain	Air Corps
MORRIS, Edward M.	Major	Air Corps
MUDGETT, Gilman C.	Captain	Cavalry
NELSON, Fred C.	Major	Air Corps
NICHOLSON, Arthur B.	Captain	Coast Artillery
OVERFIELD, David B.	Lieutenant	U.S. Navy
PEARCY, Charles G.	Captain	Air Corps
PERRIN, Elmer D.	Major	Air Corps
PERSONS, John W.	Captain	Air Corps
PERSONS, Wilton B.	Major	Signal Corps
POST, Leo F.	Major	Air Corps
REILY, Henry H.	Major	Air Corps
RITCHIE, William L.	Captain	Air Corps
ROBINSON, Stanley K.	Captain	Air Corps
RUSH, Hugo P.	Captain	Air Corps
SAMS, William C.	Captain	Air Corps
SHELTON, Cyrus Q.	Captain	Coast Artillery
SMITH, Archibald Y.	Captain	Air Corps

## AIR CORPS TACTICAL SCHOOL

SMITH, Joe N.	Major	U.S. Marine Corps
SMITH, Milton J.	Captain	Air Corps
SOUZA, William B.	Major	Air Corps
SPRINGER, Allen R.	Captain	Air Corps
STACE, Donald F.	Major	Air Corps
STORRIE, Carl R.	1st Lt.	Air Corps
STRAUBEL, Austin A.	1st Lt.	Air Corps
TRUNK, Otto G.	Lt. Colonel	Air Corps
VITZTHUM, Harry L.	Major	Signal Corps
WALKER, Ralph B.	Major	Air Corps
WARBURTON, Ernest K.	Captain	Air Corps
WEIR, Frank D.	Captain	U.S. Marine Corps
WHITE, Walter C.	Captain	Air Corps
WILLIAMS, Randolph P.	Major	Air Corps
WOODRUFF, James A.	Major	Air Corps

### 1939-1940 (1)

AKRE, Roland O. S.	Captain	Air Corps
ALKIRE, Darr H.	Captain	Air Corps
ASP, Melvin B.	Major	Air Corps
ATKINSON, Joseph H.	Captain	Air Corps
BAISLEY, Herbert K.	Captain	Air Corps
BARCUS, Glenn O.	Captain	Air Corps
BLACK, Edward C.	Lt. Colonel	Air Corps
BODLE, John E.	Captain	Air Corps
BORN, Charles F.	Captain	Air Corps
BOWLING, Elmer J.	Major	Air Corps
BRIDGET, Bernard A.	Captain	Air Corps
BRIGGS, James E.	Captain	Air Corps
BUSHEY, Orin J.	Major	Air Corps
CASSIDAY, Benjamin B.	Major	Air Corps
CHEATLE, F. Edgar	Captain	Air Corps
CLARK, Milo N.	Major	Air Corps
COFFEY, John W.	Major	Ordnance
CONWAY, Eugene T.	Major	Coast Artillery
DeROSIER, Leo W.	Captain	Air Corps
DORR, Henry W.	Captain	Air Corps
EDDY, George G.	Captain	Ordnance
EGAN, John F.	Captain	Air Corps
FERGUSON, Thomas D.	1st Lt.	Air Corps
FISHER, Dale D.	Captain	Air Corps
FITZMAURICE, James M.	Captain	Air Corps
FLOCK, Julius T.	Captain	Air Corps

APPENDIX 3

FOULK, Albert C.	Major	Air Corps
FREEMAN, Richard S.	1st Lt.	Air Corps
FRIERSON, Samuel G.	Major	Air Corps
GORDON, John C.	1st Lt.	Air Corps
GUILLETT, John F.	Captain	Air Corps
HANNA, Archibald J.	1st Lt.	Air Corps
HART, John V.	Major	Air Corps
HENRY, Draper F.	Captain	Air Corps
HEYDUCK, Lawrence E.	Captain	Field Artillery
HILLERY, Edward A.	Major	Air Corps
HUGHES, Clayton E.	Captain	Air Corps
HUGLIN, Harold Q.	Captain	Air Corps
JOHNSON, Leon W.	Captain	Air Corps
JOHNSTON, Gerald G.	Captain	Air Corps
JORDAN, James B.	Major	Air Corps
KIRBY, John W.	Captain	Air Corps
KISSNER, August W.	Captain	Air Corps
KOON, Ralph E.	Captain	Air Corps
KUNISH, Lester L. H.	1st Lt.	Air Corps
LAUBACH, David P.	Captain	Air Corps
LAUER Ford J.	Captain	Air Corps
LeMAY, Curtis E.	1st Lt.	Air Corps
LINDEBURG, Alfred	Major	Air Corps
MACNAIR, George H.	Captain	Air Corps
MALLORY, Louie C.	Major	Air Corps
MAVERICK, William H.	Captain	Air Corps
McCAULEY, James W.	Captain	Air Corps
McDANIEL, Carl B.	Captain	Air Corps
McGUIRE, George F.	1st Lt.	Air Corps
McLENNAN, Stuart G.	Captain	Air Corps
MEEHAN, Arthur W.	Captain	Air Corps
MESSMORE, Waldine W.	Captain	Air Corps
MOWER, Clarence T.	Captain	Air Corps
MUNDY, George W.	Captain	Air Corps
MUSSETT, Eugene P.	1st Lt.	Air Corps
MUSTOE, Anthony	1st Lt.	Air Corps
NELSON, Morris R.	Captain	Air Corps
O'CONNOR, Cornelius E.	Major	Air Corps
O'DONNELL, Emmett, Jr.	Captain	Air Corps
OLDS, Thayer S.	Captain	Air Corps
OTT, Isaac W.	Captain	Air Corps
OVERACKER, Charles B., Jr.	Captain	Air Corps
PAUL, Wilfred J.	Captain	Air Corps



## *AIR CORPS TACTICAL SCHOOL*

PIRTLE, Robert E. L.	Captain	Air Corps
PRATT, James G.	Captain	Air Corps
PRENTISS, Paul H.	Major	Air Corps
PROSSER, Harvey W.	Major	Air Corps
PRUDHOMME, Shelton E.	Captain	Air Corps
PYLE, Carl W.	Major	Air Corps
RANDALL, Russell E.	Captain	Air Corps
RICE, Eugene H.	Captain	Air Corps
RUNDQUIST, Elmer T.	Captain	Air Corps
SAUNDERS, LaVerne G.	Captain	Air Corps
SCOTT, Russell	Captain	Air Corps
SILLIN, Norman D.	1st Lt.	Air Corps
SKOW, Charles T.	Major	Air Corps
SMITH, Edwin A.	Major	Infantry
SMITH, Stanton T.	Major	Air Corps
STINSON, David R.	Major	Air Corps
STONE, John N.	Captain	Air Corps
STRICKLAND, Auby C.	Major	Air Corps
TAYLOR, Willis R.	Major	Air Corps
TIBBETTS, Kingston E.	Captain	Air Corps
TINDAL, Lorry N.	1st Lt.	Air Corps
TUCKER, Edwin L.	Captain	Air Corps
TURNBULL, William	Major	Air Corps
UPTHEGROVE, Fay R.	Captain	Air Corps
VALENTINE, Francis B.	Major	Air Corps
WALLACE, James H.	Captain	Air Corps
WELCH, Clarence H.	Major	Air Corps
WILSON, Roscoe C.	Captain	Air Corps
WOOD, Jack W.	Captain	Air Corps
WRISTON, Roscoe C.	Major	Air Corps
WURTSMITH, Paul B.	Captain	Air Corps

### 1939-1940 (2)

ALLISON, Dixon M.	Captain	Air Corps
ARMSTRONG, Frank A., Jr.	Captain	Air Corps
BAEZ, Raphael, Jr.	Major	Air Corps
BALL, William	Captain	Air Corps
BENSON, Joseph W.	Major	Air Corps
BENTLEY, William C., Jr.	Captain	Air Corps
BISSON, Maurice C.	Captain	Air Corps
BLAIR, William P.	Captain	Field Artillery
BULGER, Joseph A.	Captain	Air Corps
BUNDY, John H.	Captain	Air Corps

APPENDIX 3

BUNKER, Howard G.	Captain	Air Corps
CARLMARK, Carl W.	1st Lt.	Air Corps
CARLSON, Oscar F.	Captain	Air Corps
CARROLL, James B.	Major	Air Corps
CLIFTON, Ray W.	1st Lt.	Air Corps
COBB, Richard E.	Captain	Air Corps
CRONAU, Robert T.	Major	Air Corps
CROSS, Thomas J.	Captain	Infantry
DANIEL, James L., Jr.	Captain	Air Corps
DAVIES, John H.	1st Lt.	Air Corps
DAVIES, Ward J.	Captain	Air Corps
DENNISTON, Joseph C. A.	Captain	Air Corps
DUNLAP, Lionel H.	Major	Air Corps
EARECKSON, William O.	Captain	Air Corps
EGAN, John W.	1st Lt.	Air Corps
FEAGAN, John A.	1st Lt.	Air Corps
FITE, John H.	Captain	Air Corps
FORREST, Nathan B.	Captain	Air Corps
GARRISON, Flint, Jr.	Captain	Air Corps
GEER, George R.	Captain	Air Corps
GEORGE, Otto C.	Captain	Air Corps
GIFFIN, Calvin E.	Lt. Colonel	Air Corps
GOSS, Wentworth	Captain	Air Corps
GREELEY, Leonard J.	Captain	Chemical Warfare
GRISWOLD, Francis H.	1st Lt.	Air Corps
GROVER, Orrin L.	Captain	Air Corps
HALL, William E.	Captain	Air Corps
HARDING, Neil B.	Captain	Air Corps
HOLMES, Ralph E.	Captain	Air Corps
HOWARD, Dudley B.	Lt. Colonel	Air Corps
HOYLE, Gerald	1st Lt.	Air Corps
ISRAEL, Robert S., Jr.	Captain	Air Corps
JEWETT, Alfred L.	Major	Air Corps
JOHNSON, Bayard	Major	Air Corps
JOHNSTON, Paul H.	Captain	Air Corps
JOHNSTON, Robert D.	Captain	Air Corps
KENNEDY, John C.	Major	Air Corps
KESSLER, Alfred A., Jr.	Captain	Air Corps
LACEY, Julius K.	1st Lt.	Air Corps
LANDON, Truman H.	Captain	Air Corps
LAUGHINGHOUSE, Newman R.	Major	Air Corps
LAWSON, Ernest H.	Captain	Air Corps
LEE, Richard H.	Captain	Air Corps

## AIR CORPS TACTICAL SCHOOL

LEE, William L.	Captain	Air Corps
LYNCH, Thomas R.	Captain	Air Corps
MACRUM, Robert S.	1st Lt.	Air Corps
MALLORY, Joel E.	Captain	Air Corps
McHUGO, Michael E.	Major	Air Corps
MELVILLE, Phillips	Major	Air Corps
MILLS, John S.	Captain	Air Corps
MORRILL, Phineas K., Jr.	Captain	Air Corps
MORRISON, Raymond	Major	Air Corps
NORSTAD, Lauris	1st Lt.	Air Corps
NORTHRUP, George G.	Captain	Air Corps
O'CONNOR, Charles W.	Captain	Air Corps
OFSTHUN, Sidney A.	Captain	Air Corps
OLIVE, James F., Jr.	Captain	Air Corps
OTT, Frederick W.	Captain	Air Corps
PARKER, Hugh A.	Captain	Air Corps
PENNINGTON, Hansford W.	Captain	Air Corps
PHILLIPS, James F.	Captain	Air Corps
PITTS, Albert B.	Major	Air Corps
REED, Allen W.	Captain	Air Corps
RICE, Herbert E.	Captain	Air Corps
RICKER, George W.	Major	Coast Artillery
ROGERS, Elmer J., Jr.	Captain	Air Corps
RONIN, James A.	Captain	Air Corps
ROSE, Elmer P.	Captain	Air Corps
SAMFORD, John A.	Captain	Air Corps
SCHANNEP, Dwight B.	Captain	Air Corps
SELWAY, Robert R.	Captain	Air Corps
SHEPHARD, Willard R.	Captain	Air Corps
SIRMYER, Edgar A., Jr.	Captain	Air Corps
SPRAGUE, John T.	Captain	Air Corps
STEED, Thomas W.	Captain	Air Corps
STEEL, George H.	Captain	Air Corps
STEELE, Wycliffe E.	Captain	Air Corps
STEWART, Malcolm N.	Major	Air Corps
SUTTON, James S.	1st Lt.	Air Corps
TALLY, Fred O.	Captain	Air Corps
TITUS, Donald W.	Captain	Air Corps
TUNNER, William H.	Captain	Air Corps
WALKER, Ronald R.	Captain	Air Corps
WALTHALL, LeRoy A.	Major	Air Corps
WARREN, Max H.	Captain	Air Corps
WATKINS, Dudley W.	Captain	Air Corps

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WEBSTER, Lewis S.	Major	Air Corps
WOOD, Floyd B.	Captain	Air Corps
WRIGHT, Stuart P.	1st Lt.	Air Corps
ZIMMERMAN, Don Z.	Captain	Air Corps

1939-1940 (3)

ANDERSEN, James R.	Captain	Air Corps
ANDERSON, Frederick L., Jr.	Captain	Air Corps
ANDREW, James W.	Captain	Air Corps
ARNOLD, Donald D.	Captain	Air Corps
BAILEY, Henry M.	Captain	Air Corps
BAILEY, Joseph P.	Major	Air Corps
BEAL, Oscar L.	Major	Air Corps
BELL, William J.	1st Lt.	Air Corps
BENNER, Donald W.	Captain	Air Corps
BOATNER, Bryant L.	Captain	Air Corps
BOGERT, Howard Z.	Major	Air Corps
BOOTH, Charles L.	Captain	Field Artillery
BRADLEY, Mark E., Jr.	1st Lt.	Air Corps
BRANDT, Carl A.	1st Lt.	Air Corps
BROWNFIELD, Ralph O.	Captain	Air Corps
BURGESS, Walter K.	Major	Air Corps
BURLINGAME, Paul, Jr.	1st Lt.	Air Corps
CALLAWAY, Lambert S.	Captain	Air Corps
CLARK, Ray H.	Major	Air Corps
COLMAN, William T.	Captain	Air Corps
COOK, Frank L.	Major	Air Corps
COUTLEE, Melie J.	Captain	Air Corps
CRAIGIE, Laurence C.	Major	Air Corps
CROSTHWAITE, John C.	Captain	Air Corps
DARROW, Don O.	1st Lt.	Air Corps
DAY, Edwin M.	Captain	Air Corps
DEERWESTER, Charles H.	Captain	Air Corps
DENSFORD, Charles F.	1st Lt.	Air Corps
DOLAN, William C.	Captain	Air Corps
DOWNEY, Hugh C.	Major	Air Corps
DU BOSE, Thomas J.	Captain	Air Corps
DUKE, James E., Jr.	Major	Air Corps
EARLY, James F. J.	Major	Air Corps
EASTON, Robert L.	Captain	Air Corps
FARNUM, William C.	Major	Air Corps
FREDERICK, Linus D.	Captain	Air Corps
GIBSON, Richard W.	Major	Air Corps

## AIR CORPS TACTICAL SCHOOL

GILGER, Chester P.	Captain	Air Corps
GLASCOCK, John R.	Major	Air Corps
GODDARD, George W.	Major	Air Corps
GRAVES, Davis D.	Captain	Air Corps
GRIFFITH, John S.	Major	Air Corps
GRUSSENDORF, Richard A.	1st Lt.	Air Corps
HAMLIN, Winfield S.	Major	Air Corps
HAMPTON, Ephraim M	1st Lt.	Chemical Warfare
HAMPTON, Thomas K.	2d Lt.	Air Corps
HANLON, William J.	Major	Air Corps
HEROLD, Armin F.	Lt. Colonel	Air Corps
HOLLOMAN, George V.	Captain	Air Corps
HORTON, Clarence F.	Major	Air Corps
HOUSER, March H.	Major	Chemical Warfare
HOVEY, Burton M., Jr.	Captain	Air Corps
JACOBS, Paul M.	Captain	Air Corps
JORDAN, Howell H.	Captain	Infantry
KANE, Joseph L.	Lt. Comdr.	U.S. Navy
KEILLOR, Russell	Captain	Air Corps
KELLY, Archibald M.	Captain	Air Corps
KENNY, John P.	Captain	Air Corps
KOONTZ, Leonidas L.	Major	Air Corps
LADD, Joseph J.	Captain	Air Corps
LAWSON, Lawrence A.	Major	Air Corps
LEE, Robert M.	1st Lt.	Air Corps
LEHMAN, Arthur J.	Captain	Air Corps
LEWIS, Mark K., Jr.	Captain	Air Corps
LINDSAY, Richard C.	Captain	Air Corps
LUNDBERG, George G.	Major	Air Corps
LYON, Donald R.	Captain	Air Corps
McALLISTER, Charles D.	Major	Air Corps
MEISENHOLDER, Philo G.	Captain	Air Corps
MELANSON, Arthur J.	Lt. Colonel	Air Corps
MENESES, Arturo	Major	Chilean Air Force
MEYER, Walter T.	Major	Air Corps
MILLER, Paul G.	1st Lt.	Air Corps
MORRIS, Joseph T.	Major	Air Corps
NAPIER, Ezekiel W.	Captain	Air Corps
NEWBERRY, James P.	Captain	Air Corps
NOYES, Edgar T.	Captain	Air Corps
PARKER, Lewis R.	Captain	Air Corps
PORTER, Edward H.	Captain	Air Corps
REEVES, Dache McC.	Major	Air Corps

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RICH, Arnold H.	Major	Air Corps
ROGERS, Oscar L.	Major	Air Corps
SALISBURY, Glenn C.	Major	Air Corps
SALSMAN, John G.	Major	Air Corps
SELBY, Irving R.	Captain	Air Corps
SMITH, Arthur LaS.	Captain	Air Corps
SMITH, Donald B.	Captain	Air Corps
SMITH, George F.	Captain	Air Corps
SMITH, Harold D.	Major	Air Corps
SMITH, Harold L.	1st Lt.	Air Corps
TARRO, John A.	Captain	Air Corps
THORPE, Clarence S.	Captain	Air Corps
TRUEDELL, Karl, Jr.	1st Lt.	Air Corps
TURNER, Howard M.	Major	Air Corps
WAINER, Perry	Lt. Colonel	Air Corps
WEST, Casper P.	Captain	Air Corps
WETZEL, Emery L.	Captain	Air Corps
WILLIAMSON, Russell L.	Major	Air Corps
WISEHART, Harry C.	Major	Air Corps
WOODBURY, Murray C.	Captain	Air Corps
YORK, John Y., Jr.	Lt. Colonel	Air Corps
<b>1939-1940 (4)</b>		
AGEE, Walter R.	Captain	Air Corps
ANDERSON, Alvord Van P., Jr.	Captain	Air Corps
ANDERSON, Edward W.	Captain	Air Corps
BASSETT, Charles A.	Captain	Air Corps
BASSETT, Harold H.	Captain	Air Corps
BAER, Thurston H.	Captain	Air Corps
BROWNFIELD, Leon R.	Captain	Air Corps
BRYAN, Thomas L., Jr.	Captain	Air Corps
CARPENTER, Earle J.	Captain	Air Corps
CARR, Harold H.	Major	Air Corps
CARTER, Merlin I.	Captain	Air Corps
CHANDLER, Homer B.	Major	Air Corps
CHEYNEY, Sam W.	Captain	Air Corps
CHIANG, Wego	2d Lt.	Chinese Army
COTE, Narcisse L.	Captain	Air Corps
COVINGTON, John C.	Captain	Air Corps
CRESSEY, George G.	Major	Air Corps
DAVENPORT, Robert B.	Captain	Air Corps
DAVIDSON, Rufus B.	Major	Air Corps
DOUBLEDAY, Daniel C.	Captain	Air Corps

## AIR CORPS TACTICAL SCHOOL

DRAKE, Alonzo M.	Lt. Colonel	Air Corps
DYER, Harvey F.	Captain	Air Corps
EASTON, R. Loyal	Captain	Air Corps
ELLISON, James A.	Captain	Air Corps
FATOR, Lilburn D.	Captain	Air Corps
FOWLER, John G.	Captain	Air Corps
GAVIN, Edward M.	1st Lt.	Air Corps
GERHART, John K.	Captain	Air Corps
GOODRICH, Charles G.	Captain	Air Corps
GRANT, Harold W.	Captain	Air Corps
GREENE, Carl F.	Lt. Colonel	Air Corps
GROSS, Walter W.	Captain	Air Corps
HALE, Dudley D.	Captain	Air Corps
HAMMOND, James W.	Major	Air Corps
HARDY, Donald L.	1st Lt.	Air Corps
HARPER, Earle G.	Lt. Colonel	Air Corps
HEBER, Reginald	Captain	Air Corps
HILDRETH, Edward E.	Major	Air Corps
HOCKENBERRY, Earle W.	1st Lt.	Air Corps
HOLCOMB, Leslie P.	Major	Air Corps
HOUGHTON, Junius H.	Colonel	Air Corps
HUTCHISON, John J.	1st Lt.	Air Corps
JOHNSON, Arnold T.	1st Lt.	Air Corps
KOENIG, Ira R.	Lt. Colonel	Air Corps
LEE, Morris J.	Captain	Air Corps
LEWIS, Millard	Captain	Air Corps
MARTIN, Pardoe	Major	Air Corps
McCOY, Howard M.	Captain	Air Corps
MEYER, Trenholm J.	Captain	Air Corps
MILLER, Joseph A.	Captain	Air Corps
MILLIS, William C.	Captain	Air Corps
MOODY, George P.	Captain	Air Corps
MOORE, Howard	Captain	Air Corps
MOORE, John G.	Major	Air Corps
MORROW, John J.	Captain	Air Corps
MORSE, Winslow C.	Captain	Air Corps
MOSLEY, Thomas L.	Captain	Air Corps
NEWSTROM, Herbert M.	Captain	Air Corps
OFFUTT, William B.	Captain	Air Corps
OLSEN, Norman B.	Captain	Air Corps
O'NEAL, Joel G.	Captain	Air Corps
PERRIN, Edwin S.	Captain	Air Corps
POWER, Thomas S.	Captain	Air Corps

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PRINDLE, Hoyt L.	Captain	Air Corps
PRITCHARD, Frank H	Lt. Colonel	Air Corps
REED, Minthorne W.	Captain	Air Corps
RENSHAW, Harry N.	1st Lt.	Air Corps
ROBEY, Pearl H.	Captain	Air Corps
RYAN, Llewellyn O.	Captain	Air Corps
ST. JOHN, Adrian	Lt. Colonel	Chemical Warfare
SANDERS, Homer L.	Captain	Air Corps
SIMENSON, Edwin G.	1st Lt.	Air Corps
SIMS, Turner A., Jr.	Captain	Air Corps
SMITH, Luther Stevens	Major	Air Corps
STEWART, Robert W.	Captain	Air Corps
STONE, Charles B., III	Captain	Air Corps
STRADER, Ralph B.	Captain	Air Corps
STRANATHAN, Leland S.	Captain	Air Corps
STROHBELN, Edward L.	Captain	Field Artillery
SWOFFORD, Ralph P., Jr.	Captain	Air Corps
SWYTER, Carl	1st Lt.	Air Corps
TATE, Robert F.	Captain	Air Corps
TAYLOR, Robert K.	Captain	Air Corps
THOMPSON, James McK.	Captain	Air Corps
TODD, Edgar R.	Captain	Air Corps
TULL, Lloyd H.	Captain	Air Corps
VAN METER, Samuel W.	Captain	Air Corps
WADMAN, John F.	Captain	Air Corps
WALKER, Thomas J., Jr.	Major	U.S. Marine Corps
WELLS, Harold R.	Major	Air Corps
WHATLEY, George	Major	Air Corps
WHITE, Daniel B.	Captain	Air Corps
WHITE, Edward H.	Major	Air Corps
WILLIAMS, Gerald E.	1st Lt.	Air Corps
WILLIAMS, Roger V.	Captain	Air Corps
WITTKOP, Hilbert M.	Major	Air Corps
WOODWARD, Henry G.	Major	Air Corps
WRIGHT, Roy T.	Captain	Air Corps
YOST, Emmett F.	Captain	Air Corps



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