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Photo: This photograph displays the wide variety of both conventional and nuclear weapons which may be carried on the B-52Hs of the 2d Bomb Wing as they continue to make history beyond their first 75 years. (Eighth Air Force Museum)

Cover Painting: The painting on the cover shows the last of four B-17G's of the 20th Squadron element of seven aircraft at the moment of bomb release over the Farencvaros Marshalling Yards near Budapest, Hungary, 2nd Bomb Group Mission 220, June 27, 1944. (See page 13 for artist's biography)





This history was written primarily for those who have an abiding interest in U.S. military aviation and, specifically, bombardment aviation. It chronicles the exploits and the sacrifices of those intrepid men and women who made up the 2nd Bombardment Group/Wing over seventyfive years - 1918 to 1993. Although ten of its twenty-two chapters are devoted to WW II, it is by no means a memory book about that war. It is a history of the Air Force's oldest, most continuously serving, heavy bombardment organization.

The history takes the reader from the earliest days of U.S. bombardment aviation in 1918 to the days of the B-52, and the strikes against the Iraqi invader of Kuwait. In the course of reading one will: fly with the early bombardment aviators who flew and died in their crude WW I bombers; share the views of visionaries like General Billy Mitchell who sacrificed his career proving the concept of strategic bombing; experience the elation of bomber crews sinking de-commissioned U.S. and captured German warships; struggle with these same pioneers as they fought to preserve their vision through the lean years between 1919 and 1935; feel their excitement when they received the first all-metal, enclosed-crew compartment bombers; fly with them on their historic B-17 missions to South America; sense the joy of their vindication as the nation mobilized the largest air armada in history during WW II; deploy to battle as part of that armada; join those WW II crews in over 400 missions mounted from three bases in North Africa and one from Italy during the longest, continuous involvement in combat in the history of the Group; follow the evolution of a bomber force in-being from the B-29 to the B-50, the B-47 and to the B-52, during the tense and threatening years of the cold war; get a sense of the commitment and personal deprivation demanded of bomber crews held in constant alert for years during the global nuclear threat; course through the skies over Vietnam; and slip undetected half way around the world on the longest heavy bombardment mission in aviation history. Finally, the reader will share the pride in the awards, citations, battle honors, and special recognitions garnered by the unit and recall with grateful heart the names of those most directly responsible for those honors and who made the ultimate sacrifice as the defenders of liberty.

The writing of this history was a daunting task for those who were neither historians nor authors. That the work was possible is a tribute to the illustrious past of a unit that left a fertile trail of records and accomplishments. The authors diligently scoured the country for those records and plumbed the most obvious sources at the National Archives, the Air Force Historical Research Agency at Maxwell Air Force Base, Alabama, the Center for Air Force History, Bolling Air Force Base, DC, the National Personnel Records Center, St. Louis, Missouri, the Air Force Museum, Wright-Patterson Air Force Base, Dayton, Ohio, and the two principal bases that hosted the unit for many years - Langley Field, Virginia, and Barksdale Air Force Base, Louisiana. Numerous lesser sources were researched. Present and former members of the Group/Wing were generous in their encouragement and assistance. They gave or lent us pictures and other memorabilia and wrote or told us of their personal experiences. One such former member wrote us about his experiences with the Group while engaged in the Mexican Border Patrol in mid-1919. Several retired generals and former unit commanders shared with us their experience with the Group between 1931 and 1937.

Finally, parts of this volume are taken, without attribution, from the collective dia-

ries, flight and personal records, and the experience and recollections of the authors.

The authors had their first organizing meeting in late 1992. A rough outline of the book was agreed to and portions, primarily by chronological period, were assigned to each author to research and write. The first serious work started in the spring of 1993. Historical data sources had to be identified, researched and gleaned. The research tasks and information were shared. Appeals were made for information, personal experiences and memorabilia. The plan for the scope and content of the book were perfected, and text was drafted, and exchanged for coordination and editing. Proposals from publishers were solicited, and evaluated and a publisher was selected. Then came the deadlines for completion that forced full dedication to finishing the work and terminating of further research and refinement.

Two over-riding lessons have come from this endeavor. Early progress in the general framework of a book gives a false sense of accomplishment. Much like building a house - the house takes form very quickly, but the finishing is deceptively long and tedious. The other lesson is that our research and study have led to the conclusion there is as much or more to write as had been written about the 2nd Bombardment Group/ Wing. Histories, by their nature are never complete, seldom even to the satisfaction of their authors. This is particularly true of this volume. The emphasis on WW II was inevitable given the background of the authors, the make-up of the sponsoring Association, and the length of the unit's involvement in that war. It is our fervent hope that this first effort at a unit history will prove to be worthy inspiration for others to take this history to a higher level of inclusion and perfection. Such a history is deserving of fuller treatment than we have been able to give it and to do so would reward and honor the work we have started.

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Foreword

The profession of arms has always been an honorable profession. But there can be no higher calling than volunteering your services to protect and defend your nation. When you have had the extreme good fortune to have served our nation as a member of the 2nd Bomb Wing, or any of its glorious predecessors, you know the tremendous bond that you will share for the rest of your life! Those of us who have had that good fortune, have played a major role in our nation's history – both in war and peace. It is a glorious history of a unit that has brought honor upon itself since the first days of aviation.

Since the very first days of WW I to the present, the men and women of the 2nd Bomb Group/Wing have contributed their lives in the realm of aerial bombardment. The 2nd Bombardment Group was the mother of bombardment aviation in the Air Force, and led the way in developing delivery tactics and employments. In 1940, the motto of the Group was changed from *Mors et Destructo* (Death and Destruction) to *Libertatem Defendimus* (Liberty We Defend). Today, members of the 2nd Bomb Wing will tell you that their motto is Liberty We Defend – with death and destruction. It is considered an inside joke to the 2nd Bomb Wing members, but it is also a very subtle way to saying that they are proud of their Wing and remember those who have gone before with the highest respect and honor.

I would like to pay special tribute to the Second Bombardment Association for its leadership and foresight in sponsoring this unique history. To the many who generously contributed historical material and worked hard on its production, my grateful thanks.

It is our sincere hope that those who read this work will appreciate the sacrifices and the exploits of those extraordinary people who make up the legacy of the 2nd Bomb Group/ Wing. We will always remember that seeds of the 2nd Bomb Wing were planted in the fire and flame of WW I and continue to grow in the rich cotton fields that became Barksdale Air Force Base. We eagerly share our heritage of the past and continue to shape a proud future for tomorrow!

GEORGE PEYTON COLE, JR. Brig. Gen. (ret) Commander, 2nd Bomb Wing 1992-1994 This Boeing YB-17, from the 2nd Bombardment Group, was on display at Treasure Island in San Francisco during the 1937 Golden Gate Exposition. Crowds were awed by the size of this massive alreaft with its 103'9" wingspan. (Gordon S. Williams)



We are indebted to the Second Bombardment Association which commissioned and underwrote the expenses of writing this history, and to those organizations that are the keepers of official records and histories, memorabilia, and artifacts relating to the 2nd Bombardment Group/ Wing: Air Force Historical Research Agency, Maxwell AFB, AL; The National Archives, Washington DC; Washington National Records Center, Suitland, MD; 2nd Bomb Wing History Office, Barksdale AFB, LA; Eighth Air Force History Office and Eighth Air Force Museum, Barksdale AFB, LA; Center For Air Force History, Bolling AFB, DC; Air Force Museum, Wright-Patterson AFB, OH; and the Command History Office, Air Combat Command, Langley AFB, VA.

We acknowledge with particular gratitude the support and contribution of the following to this work:

- Charles W. Richards, who did the monumental task of researching and documenting all the WW II missing crew reports.
- Judy DiFrancesco, who was our computer consultant and did the computer-aided graphics.
- Lewis R. Moore and Garwood H. Walp, former members of the WW II Group Photo Section, who were a rich source of photos.
- William H. Greenhalgh, who generously and voluntarily gleaned the files at Maxwell AFB, AL, for official photos.
- Charles N. Beecham, whose painting graces the cover, and whose art work is found in unit insignias.
- The Boeing Company for numerous photos, drawings and records of aircraft flown over the years by the 2nd Bombardment Group/Wing.
- Nadine Amos, Barbara Koller, Rosemary Lloyd, and Anne Martin, the author's wives, whose understanding, encouragement, and patience during the more than three years of this endeavor were acts of faith and unselfish devotion to family.

Finally, we extend our sincere appreciation and gratitude to the host of individuals — members and friends of the Second Bombardment Association, former members of the Group/Wing and their surviving families — who generously shared their treasured photos, official records, memoirs, combat diaries, personal accounts, and anecdotes. Your contributions are identified and acknowledged in chapter endnotes, photo credits, and the bibliography. Readers will quickly realize how much your generosity has contributed to the scope and authenticity of this work.

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These Keystone LB-7s from the 20th Bomb Squadron were painted by James Dunavent. The picture depicts the aircraft returning to Mather Field during the 1930 Army maneuvers, prior to the construction of the bridges in the San Francisco Bay area. (Reprinted with permission of the AAHS)



Here two 11th Bomb Squadron De Havilland DH-4s are depicted performing a border patrol mission over Marfa, Texas in June1919. The artist was Melvin S. Brown, Jr. (Reprinted with permission of the AAHS)



World War I night bombing by the 96th Bomb Squadron with their Breguet XIV Bs is depicted in this painting by Paul Lengalelle. A favorite target of the 96th Squadron was the Colfans rail hub, located 15 miles west of Metz. It was protected by three antiaircraft batteries and German pursuit squadrons flying Fokker D-VIIs (Courtesy of Aviation Week & Space Technology)



Color photography of the 2nd Bombardment Group B-17s from WW II were nowhere to be found during the preparation of this book. Here is factoryfresh B-17F, s/n 42-30346, on a training flight over central Washington state. (Gordon S. Williams)

#### About Authorship

Perhaps the earliest impetus leading to the authorship of this history started when Philip M. Glassman, Association President Emeritus, urged those at the 1981 reunion in Hampton, Virginia to form a non-profit organization. To that time the Association had been a periodic, informal gathering of 2nd Bombardment Group WW II veterans loosely held together by an annual newsletter. Phil Glassman, who wrote the newsletter, noted that the mailing list had grown to almost five hundred, and it was time to form a nonprofit organization with elected officers and membership dues to administer and finance the affairs of the Association. A motion to that effect was unanimously approved.

It wasn't until February 11, 1985, that the Second Bombardment Association was formally organized in the State of California under Articles of Incorporation and By-Laws written by Charles P. "Pres" Huntington, the incorporator, and the Association's first Treasurer. The By-Laws provided that one of the elected officers of the Association shall be a Secretary-Historian, who shall, among other duties, "be the custodian of all photographs, letters, documents and memorabilia relating to the 2nd Bombardment Group (H) of World War II . . . ." The first Association Secretary-Historian was John W. Collens. He was succeeded, as Historian, by W. E. "Joe" Simons. The Association Newsletter began carrying historical articles, extracts from personal memoirs, and anecdotes from life with the Group during WW II. These continued and expanded under the editorship of Rudolph C. Koller, Jr.

After Kemp F. Martin became Association President in 1992, he appealed to the membership for volunteers to write the unit history. His appeal went largely unheeded, except for a few members who sent him information of historical interest. As the nation started celebrating the fiftieth anniversaries of the most notable events of WW II, there was heightened interest in the history of that period. More and more unit histories appeared in seeming response to the quiet desperation spreading among WW II veterans who sensed the inevitable depletion of their numbers. A rich source of first-hand experiences and personal interest was fading away. Spurred by these same forces, serious interest in a unit history for the 2nd Bombardment Group was aroused for the first time. Unlike most contemporary unit histories, the Second's record wasn't, and shouldn't be, confined to WW II. It, and its successor Wing, have seventy-five years of distinguished service to the nation that has never been recorded in a single volume. Motivated by this need, but humbled by the scope of the undertaking, this committee, of somewhat reluctant volunteers, set about the task.





Robert F. Amos, Col. USAF (ret), joined the Group's initial cadre of WW II flight crews as a co-pilot at Geiger Field, Spokane, Washington, in October, 1942. He trained and deployed with the Group to North Africa. After twenty-nine missions as a co-pilot, he was promoted to crew commander. He finished fifty missions on October 5, 1943. He returned to the U.S. and completed wartime service as an instructor and flight commander in B-17, B-24, and B-29 transition training. Following the war he entered the comptroller career field, and was integrated into the regular Air Force. At the time of his retirement in 1969, he was the Director of Management Analysis in the Air Staff at Headquarters USAF. Following retirement he spent fifteen years as a business executive with a Phoenix, Arizona firm, retiring in 1985. Amos became President of the Second Bombardment Association January 1, 1996, and chaired the History Committee. Rudolph C. Koller, Jr., Col. USAF (ret). Professor Emeritus, Golden Gate University. He joined the Group's original cadre of WW II flight crews at Geiger Field, Spokane, Washington. He trained and deployed with the Group to North Africa as Group Navigator and completed fifty missions on November 10, 1943. After North Africa he served in the Western Pacific with the 316th Bomb Wing as Wing Navigator. After WW II he was integrated into the regular Air Force. His principle career assignments were in Plans, Intelligence, and Operations, including seven years in Strategic Air Command. At the time of his retirement in 1971 he was Commander, USAF 1127th Field Activities Group. Following retirement, he spent sixteen years with Golden Gate University. Koller is editor of the Second Bombardment Association Newsletter.



Alwyn T. "Al" Lloyd put in a stint in the U.S. Air Force in the 1960s. Following that, he started an engineering career with the Boeing Company, Seattle, Washington. He is presently a Senior Service Engineer with Boeing's Commercial Airplane Group. Al has a Bachelor of Science in Aeronautics from Parks College of Aeronautical Technology. Al participated in both the cadet and senior programs of the Civil Air Patrol. He has been active in the Air Force Association and is currently a National Director. He is a member of the American Aviation Historical Society and has written a number of papers and magazine articles on aviation and strategic airpower subjects, including twelve for the former Strategic Air Command's Combat Crew. He has published nine, 72-page monographs on specific aircraft, and is the author of the B-24 Liberator, a definitive history of that airplane. Al is a consultant to several airplane model manufacturers, and to authors, on airplane configurations and markings. He was a technical advisor for Boeing's 50th anniversary celebrations for the B-17 and B-29.



Earl W. (Web) Martin joined the Group in Italy, as crew commander, in March 1944. On April 13, the day of his thirteenth mission, he was shot down when the Group lost four airplanes over Gyor Wagon Works, Hungary. He spent the rest of the war as a POW, mostly at Stalag Luft III. After the war he joined the Air Force Reserve, was recalled during the Korean War, and served two years as a pilot-maintenance officer. Upon release from active duty, he resumed a fifteen-year career as a flight engineer with Eastern Airlines. He left Eastern to establish a private business from which he retired in 1982. Web now lives with his wife Anne on a small farm in South Carolina. He is assistant editor of the Second Bombardment Association Newsletter.

#### ABOUT THE ARTIST

The cover painting artist, Lt. Col. Charles Beecham USAF-Ret, was an aircraft commander 20th Squadron, 2nd Bombardment Group between April and September 1944. Beecham completed 50 combat missions against targets in Italy, Roumania, Austria, Hungary, Germany and Southern France. After his retirement from the Air Force in 1976, he taught art at El Reno Junior College, Oklahoma. Beecham has a Masters Degree in Fine Arts and additional graduate study at the Instituto Allende and Instituto Belles Artes in San Miguel de Allende, Mexico. Beecham's art is included in several institutional and private collections including: National Headquarters The Retired Officers Association; University of Northern Colorado; Kodak Corporate Headquarters; Oklahoma Historical Society Hall of Fame; and First National Bank of El Reno Heritage Collection.

Beecham is a member of the Second Bombardment Association and was the designer and architect of the Second Bombardment Association Memorial which is emplaced in the Memorial Park of the United States Air Force Museum, Wright-Patterson Air Force Base, Ohio.

During the early 1970s the Second Air Force adorned its aircraft with this huge Flying 2 for special occasions. This is B-52G-90-BW, s/n 57-6509 was named "Holiday in Dixie/Queen Andrea Hart". The markings differed on each side of the nose. (Tom Brewer)

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## DEFENDERS OF LIBERTY

2ND BOMBARDMENT GROUP/WING

1918 - 1993

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The order came down abruptly. LAUNCH! Crews were rousted at 3:00 A.M. After months of meticulous planning, in the utmost secrecy, the advance notice time had been eliminated. Why? Mission briefings, flight planning, and prepositioning were all crammed into a near impossible time- frame, risking the chances for success of a mission that had been so carefully crafted and rehearsed. The timeless adage that the plan is the first casualty of battle was being fulfilled.

At the briefing the General told them this was the most historic mission since Doolittle's Tokyo raid. That really hyped the sleep-deprived crews into full awareness of the tremendous expectations now levied on the mission. Failure, no, nothing less than success could have military and political implications of international proportions. The comparison with the Doolittle raid was apt. Then the nation had urgent need for a morale-boosting victory. In Doolittle and his raiders it found airmen willing to be sacrificed to that end. The raiders had planned and trained for months, but in the end, fearing premature detection, had launched early over stormy seas and flew to the target with diminished chances for success, or for a safe recovery.

Again, the nation needed a moraleboosting military victory against unbridled aggression. Again, airmen were willing to be used to that end. Again, they had planned and trained for months. And again, a retaliatory strike was being launched prematurely into stormy weather. The comparisons were sobering.

Crews slogged out in hard rain to their drenched airplanes for the early morning takeoff. The relentless and allpervasive rain had seeped, unseen, through seams and past airframe ribs and joints, shorting a circuit here and a frequency there. A last minute flurry of fuse and component replacements, drying out and testing had, hopefully, restored all the crucial circuits and frequencies.

Crews climbed aboard, apprehensive in the knowledge that their planes, fully loaded with weapons and fuel, grossed heavier than any they had ever coaxed skyward. Takeoff runs would stretch to runway boundaries. There was no room for error.

One by one the planes lumbered and splashed down thousands of feet of runway, leaving a veritable cloud of water in their wake, before laboring safely into the grey skies. Relief! They climbed steadily to altitude, soon out-distancing the familiar and reassuring ground below, and headed out across the blank sea.

Droning on the crews had time to reflect on the enormity of their mission. The enemy had rolled across a defenseless border, quickly occupied a noncombatant nation, then swiftly poured in thousands of additional troops, raising the specter of further conquest and destruction. A strategic part of the world and its vital resources lay vulnerable in the path of this spreading tyranny. The bomber mission was in the vanguard of a multi-force counter-offensive to quell enemy ambitions and repulse his aggression. Timing was crucial - timing to slip across the Mediterranean undetected to preserve tactical surprise, timing to fit neatly into the multi-force operation, and timing at the target so that strike results would complement and aid those to follow.

Hours stacked upon hours as the planes clung doggedly to course. Finally, land masses, made familiar at mission briefings, appeared at the horizon. Crews, now in heightened alert, bore steadily on. Target time came, weapons were loosed, and the crews turned back into the cold January sky, still unchallenged. Tactical surprise had been preserved. Still not knowing the precise results of their strike, crews, buoyed by confidence in their professionalism and in their weapons, knew it had gone well.

The most important part was over, yet, the mission was less than halfflown. Already tired to the bone, crews had to draw deep into their physical and mental reserves for the long journey home.

New threats stalked the home-bound leg. Severe bad weather over the Mediterranean, powerful, unforecasted head winds, hung weapons and shut-down engines were all enormous challenges to the flying skills of the crews. Each threat, some persisting to the crisis stage, was finally overcome or left behind. Shortly before dark the planes straggled back to base. No time was wasted getting on the ground. It was over. Elated and exhausted, crews taxied planes to their shelters, shut down the weary birds, debriefed, went to their quarters and collapsed. It was January 17, 1991 and they had just returned from launching an opening salvo against vital military targets in Iraq as part of Operation Desert Storm.

Fifty-seven aviators, aboard seven B-52G's of the 2nd Bombardment Wing (H), Barksdale Air Force Base, Louisiana, had flown the longest combat sortie ever. Flying non-stop from Barksdale to Iraq and back, they covered more than 14,000 miles, and logged as much as 35 continuous hours of flying time. They made the premiere launch in combat of the AGM-86C, the new and highly secret conventional air-launched cruise missile. In doing so these intrepid airmen added more firsts to the numerous firsts garnered by the 2nd during its long and distinguished history of heavy bombardment aviation, starting with the 1st Day Bombardment Group in September 1918 during WW I.

The nation celebrated the victory in Desert Storm and the restoration it brought in national pride without knowing the 2nd Wing's unique contribution. The mission to Iraq remained wrapped in deep secrecy for exactly one year after it was flown. The crews were thus denied the opportunity to bask in the glow of these celebrations and to fully share in the appreciation of a grateful nation. They can be justifiably proud that their singular deeds are now part of the annals of the most enduring and most illustrious heavy bombardment unit in the history of U.S. military aviation. This volume is one attempt to record those annals.1

#### Endnote:

<sup>1</sup>John Tirpak, "the Secret Squirrels", (Air Force Magazine, April 1994) 56-60 Interview, Capt. Kent Beck, B-52 Commander/96th Squadron Flight Commander, 2nd Bombardment Wing (H), Barksdale Air Force Base, Louisiana, March 17, 1994.

#### CHAPTER I

#### THE BEGINNING

In April 1917 when the United States declared war on Germany, the U.S. Army Air Service had one squadron, equipped with obsolete airplanes. There were no air machines fit for front line service, no aero accessory equipment of any value, little if any fundamental knowledge of air organization, and fewer than fifty trained pilots. There were no pilots capable of performing a battle mission, save those serving with the French Army. The Air Service had a total of 1,120 personnel assigned, but only five officers in Europe, none of whom had any advanced aeronautical knowledge.1 In short, the nation had neither the organization nor the equipment to conduct offensive or defensive aerial operations as part of the war it faced in Europe.

Conditions had not improved much by September. There were not more than twenty-five officers in the Aviation Service of the American Expeditionary Force (AEF) who could fly an aeroplane.<sup>2</sup> By December the Air Service had fewer than 400 airplanes and most of these were at flying training schools at Issoudun and Tours, France<sup>3</sup>

Brig. Gen. Benjamin D. Foulois arrived in France in November 1917 to take command of the Air Service.<sup>4</sup> Gen. Foulois had a staff of twenty-one officers only five of whom were aviators. Maj. William "Billy" Mitchell, later to assume command of American Corps Air Service at the front, had come to France as an observer on the eve of the United States declaration of war.<sup>5</sup>

The tasks facing the Air Service were monumental. There was a full spectrum of urgent requirements to create an aerial combat force requirements for organization, both in the United States and in Europe; training schools for pursuit, observation and bombardment air crews and ground personnel; qualified instructors; new airfields, a logistics support system; a body of air tactics; and most importantly, aircraft production.

#### KEY AIR LEADERS

During these early days of planning and development, three names stand out as pivotal leaders who took the WW I Air Service from a near zero capability to an effective combat force — Col. Raynal C. Bolling, the planner and expediter at Headquarters Air Service; Brig. Gen. Benjamin D. Foulois, planner and expediter of the Air Service, AEF; and Col. "Billy" Mitchell, combat strategist and organizer of Air Service units in the "Zone of Advance" (front line aviation in France). It was the task of these officers, and many others not mentioned, to get the Air Service going. The immediate tasks facing the Air Service in France in January 1918 were to build airfields and access roads, acquire pursuit, observation and bombardment aircraft, and train air crews and ground personnel to man and maintain them.

#### BOMBARDMENT TRAINING

In April 1917, there were no bombardment aircraft in the Air Service, or schools to train bombardment air crews. Lt. Fred Blakeman was put in charge of bombardment training.6 The U.S. Air Service Bombardment School was established, initially, at Issoudun, France. Lt. Blakeman started with a French officer, Capt. Prospere Chalet, detailed to him, but he had insufficient buildings and grounds, no instructional staff, and no airplanes. Through persistent badgering of the French, Blakeman succeeded in getting two old Breguet bombers by November. It took another two months to train an instructor staff and another month for ten more war-weary Breguets to arrive. The Breguets had logged approximately 50 hours each and were judged unfit for combat. Finally, in January 1918, the School opened. Shortly thereafter it moved to Clermont-Ferrand. The primary reason for the move was the conflict in training schedules and maneuvers between pursuit and bombardment training at Issoudun. The training at Clermont-Ferrand was handicapped by ground conditions, the surrounding mountainous terrain, and the lack of adequate equipment.

Aerial gunnery training fared better. As of January 1918, there were only two officers in the AEF who had any practical training in gunnery.<sup>7</sup> The French had an excellent school at Cazaux. Through extensive negotiation with the school Commandant, arrangements were made to route practically all U.S. flying personnel through Cazaux for final aerial gunnery training before proceeding to the front. About 400 Observer/Bombardiers were trained there.

tainous terrain at Clermont-Ferrand led the Chief of Air Service training to declare the need for a new bombardment school location. Unfortunately, no new school was established in France. There was some promise that the Italian bombardment school at Foggia, Italy, could supplement the crew training at Clermont-Ferrand. One hundred twenty-six bombardment students were trained at Foggia but they were sent to the Italian front, where they operated with Italian squadrons against the Austrians.

The Clermont- Ferrand school anticipated training 40 bombardment teams a month. This rate was never attained. From January 1918 through November 1918, the school's total production was 211 pilots and 261 bombardiers, an average of fewer than 30 teams per month or 75% of the expected production.

#### BOMBARDMENT AIRCRAFT

The pacing factor in establishing a credible aerial combat force was the availability of aircraft. When the U.S. entered the war, it had no domestic bomber production. The Allies had only two day bombardment aircraft, the British De Haviland-4 (DH4) and the French Breguet-14. In 1917, the Italians were in the process of developing the Caprioni Ca33 bomber. The U.S. Air Service placed an order for 200 Caprionis, but production difficulties and engine problems plagued the program. Delivery of the first Caprionis was to commence in April 1918, but they had to be retro-fitted with the U.S. Liberty engine. All the Caprionis delivered were turned over to the U.S. Navy. None were provided to the Army Air Service.8

The U.S. decided to use the French Breguet-14 and the British DH4 as its bombardment aircraft. The Breguet was an effective day bomber. Although contracts with the French effected in late 1917 and early 1918 set delivery requirements for the Breguet, the French were never able to meet their quota. During the March 1918 fierce German offensive, the French lost a considerable amount of aircraft, ground-service equipment and hangars to the Germans. The French bombers were heavily taxed in meeting their mission schedules and their aircraft combat losses mounted. Simultaneously, the Breguet-14B2 with the 300 HP Renault motors ran into production difficulties. Because of French combat losses and production problems, the U.S. Air Service eventu-

The natural limits to expansion and moun-



Breguet 14B-2 of 96th Squadron, A.E.F. Full-span lower wing flap, a feature of the B model, was automatic. Rubber bands on the lower surface pulled it down when air-speed was below 70 mph. (Courtesy of National Archives)



The Breguet, Type 14B-2.

ally received only enough Breguets to equip one bombardment squadron.<sup>9</sup>

In August 1917, War Department advisers finally selected the DH4 as the plane most likely to fit Allied needs for mass production<sup>10</sup> in the observation and bombing role. U.S. research and development had produced the 12 cylinder, 400 hp. Liberty motor, which was to replace the DH4 Rolls Royce motor. In July 1917, the British sent designs of their DH4 to U.S. for fabrication of a DH4 with Liberty motors. The first DH4 Liberty Plane was delivered in November 1917. The U.S.-produced "Liberty Plane," as it was called, was put through a series of tests and its performance was judged to be satisfactory. The Liberty Plane developed a speed approaching 120 mph, performed well at high altitudes (12,000 to 15,000 feet), and demonstrated good maneuverability. U.S. authorities predicted that one thousand of these Liberty Planes would be ready by April 1, 1918.

The prediction was grossly optimistic. Only three Liberty Planes had been delivered by early February 1918, and it was not until May 1918 that the first Liberty Plane was received at the U.S. assembly plant in Romorantin, France.<sup>11</sup> Seven more Libertys arrived within the month. By June 1918, 103 more arrived, making 111 Liberty Planes in France on July 1, 1918.<sup>12</sup> In mid-July, when the airplane was urgently needed at the front to equip day bombardment squadrons, it was discovered that the bomb equipment on the airplane was incomplete.

The embryonic U.S. aircraft industry had geared up in lightning fashion, but the lack of quality control, adequate check lists, and spare parts production degraded production. The Liberty Planes scheduled for assignment to observation units arrived without adequate camera mounts, and those scheduled for bombardment had incomplete equipment. Engine replacements were another annoying factor. A replacement rate of one spare motor for two airplanes was established in 1917 as a minimum. This rate was not maintained. By July 12, 1918, sixtyseven Liberty Planes had been received with only sixteen spare motors.<sup>13</sup>

By September 1918 only seven bombardment and observation squadrons had been equipped with the Liberty Plane in time for extended front line service. The Liberty Plane was deemed inferior to the French Salmson for observation purposes and inferior to the French Breguet 14B2 for bombardment.<sup>14</sup>

The Liberty Plane became commonly known to pilots and observers as the "Flying Coffin",



DH4 of the 20th Aero Squadron. (Courtesy of R.L. Cavanagh.)

#### SUMMARY TABLE OF PERFORMANCE<sup>15</sup> Observation and Bombardment Planes-Performance Comparison

Type	HP	Speed	Ceiling	Endurance hr/min
Salmson	270	116	20,300	2:45
Breguet	300	110	19,000	2:45
Liberty	400	112	15,000	1:50

#### COMPARISON OF BOMB LOADS

Breguet 14B2	520 pounds
Liberty Plane	220 pounds

because of proneness to catch fire when its gasoline tank was punctured. Some squadrons used it with marked success and with minimum casualties. Others, notably the bombing squadrons, experienced severe losses, lacked confidence in the craft, and felt handicapped using it. One of the most disconcerting aspects of flying the Liberty Plane was the castor oil fumes emanating from engine exhaust. Castor oil was added to the fuel as a lubricant. The fumes were nauseating and many crews suffered post-flight diarrhea.

#### U.S. AIRCRAFT IN THE ZONE OF ADVANCE

On November 11, 1918, there were 740 U.S. Air Service aircraft at the front. Of these, 328 were Spads, 157 Salmsons, 196 Liberty Planes, 43 Breguets, 12 Sopwith Camels and 4 SE5's. Of the Liberty Planes, 80 were day bombers attached to the First Army, and 116 were observation planes attached to the Second Army. When the war ended, the Liberty Plane had been in combat for only 70 days but had established itself as an excellent plane, though far more useful in observation than as a bomber.

In summary, the plans to equip, train, and commit to combat a U.S. bomber force by the summer of 1918 were overly ambitious. The impediments to fulfilling the plans were too daunting for the time allowed. Several day bombardment groups had been planned. Only one, the 1st Day Bombardment Group, Air Service, First U.S. Army Allied Expeditionary Force (AEF) went into combat. The Group was first organized in September 1918 with four subordinate squadrons - the 96th, equipped with Breguet 14-B2's and the 11th, 20th, and 166th, all equipped with the Liberty Plane. The 96th entered combat before the Group was organized and flew its first mission June 12, 1918.

#### Endnotes:

<sup>1</sup> Thayer, Lucien H. "Americas First Eagles," ed: McGee, Donald J & Bender, Roger J., 1st ed, 1983, R. James Bender Publishing, San Jose CA, p.9

- <sup>2</sup> Ibid p.24
- <sup>3</sup> Ibid p.29 <sup>4</sup> Ibid p.27
- <sup>5</sup> Ibid p.10

<sup>6</sup> Little is known about Lt. Blakeman except that he was the officer in charge of the Bombardment training school.

- Ibid p.63
- <sup>8</sup> Ibid p.81

<sup>9</sup> The 96th Squadron, 1st Day Bombardment Group, used the Breguet 14B2 bomber throughout its period of combat operations.

- 10 Ibid p.233
- 11 Ibid p.236
- <sup>12</sup> Ibid p.236
- 13 Ibid p. 141
- 14 Ibid p.245

<sup>15</sup> Journal American Aviation Historical Society, Spring 1981 Appendix A pp. 102/103

#### CHAPTER II

#### THE 1ST DAY BOMBARDMENT GROUP<sup>1</sup>

Unlike World War II when groups was organized first and then the squadrons were assigned, the embryonic U.S. Air Service in WW I, first organized squadrons and then assigned them to groups. The 1st Day Bombardment Group was organized in September 1918. Its squadrons - the 11th, 20th, 96th, and the 166th - had been previously organized in mid-1917 and were eventually brought together under the Group in September 1918.

#### 11TH AERO SQUADRON<sup>2</sup>

The 11th Aero Squadron was organized June 26, 1917 at Camp Kelly, Texas. Training at Camp Kelly consisted of basic military training: marching, manual of arms, military courtesies, and general training in camp duties. The Squadron moved to Scott Field, Illinois, August 12, 1917. Here general military training continued with some indoctrination in the care and maintenance of aircraft. The Squadron proceeded to the port of embarkation on December 15, 1917, and arrived in England December 31. The Squadron trained at Stamford and Waddington RAF stations on small planes and the British DH4. There was no flying training, just ground and armament maintenance. No flying officers were assigned to the Squadron at that time. Training continued through August 7, 1918, when the Squadron was transferred to France. The Squadron entered France through the port of St. Maixtent. From there it moved via train to Delouze, France. From here to Colombey-les-Belles where they received the DH4 Liberty Plane and were assigned flight crews. From Delouze the Squadron moved to Amanty airdrome on September 6. On September 10 the Squadron became part of the 1st Day Bombardment Group.

#### 20th Aero Squadron

The 20th Aero Squadron was organized June 26, 1917 at Camp Kelly, Texas. Training at Camp Kelly consisted of basic military training, the same as described for the 11th Squadron. In July 1917, the 20th was transferred to Wilbur Wright Field, Ohio. Military training continued with some hands-on training on available aircraft. The unit moved to Garden City, New Jersey on November 1. The 20th was unfortunate in not being assigned a ship for immediate transport to Europe. The unit languished at Garden City for almost forty-five days. Finally, it embarked December 17 on a tough fourteen-day winter crossing of the North Atlantic to England. On New Years Day, 1918, the Squadron arrived at Winchester, England, and was divided into two detachments. One detachment was sent to Narborough, Norfolk, and the other to Stamford, Lincolnshire. Here they received aircraft, engine, and armament maintenance training. The ground crews trained on aircraft flown by pilot trainees who, upon completion of their flying training, were sent to France. The two detachments were reunited at Stamford on May 1, 1918.

The 11th Aero Squadron was also at Stamford, billeted on the other side of town. On August 13, the 20th Squadron moved to France. After some shorttime intermediate moves, the 20th was sent to Delouze, France. From here to Colombey-les-Belles where it received Liberty Planes and flying crews. On September 7, 1918, the 20th Squadron moved to Amanty airfield and was subsequently assigned to the 1st Day Bombardment Group



11th Aero Squadron





20th Aero Squadron



#### 96th Aero Squadron<sup>3</sup>

The 96th Aero Squadron was organized at Camp Kelly, Texas, August 20, 1917. Capt. George Thomas, Jr. was the commander. Training at Camp Kelly consisted of infantry training with much drilling and fatigue duty. After two months of this training without so much as seeing an airplane, the Squadron was moved directly to the port of embarkation at Minneola, Long Island, New York . Here Squadron personnel boarded the RMS Adriatic for a stormy trip to England. They arrived in England on November 10, 1917, and were there only long enough to move from Liverpool to Southampton where they boarded a ship for France.

On arrival in France, the Squadron was moved by train to the 7th Aviation Instruction Center, Clermont-Ferrand - Lt. Blakeman's bombardment school. Flying crews were assigned and they received instruction in the Breguet 14 aircraft. The ground crews were trained at the Renault and Breguet factories, and at the Michelin factory where the Breguet was assembled. The Squadron completed training in April, 1918, but could not be moved to the Zone of Advance until it was assigned Breguet-14 bombers. The Brequets were a long time coming, so long in fact that considerable doubt arose as to when, where, and how the Squadron was going to serve. As a result, fellow aviators at Clermont Ferrand came to refer to the 96th as the "Bewilderment Squadron."

When at last the 96th was equipped, it received ten old Breguet-Renault bombing planes. These



had been used since December 1917 for instruction at Clermont-Ferrand and were ceded to the 96th Squadron by the training school. On May 18, 1918, ten bombing teams were assigned to fly the ten Breguets to Amanty airdrome.

At Amanty, the Squadron was temporarily reorganized as the 1st Day Bombing Squadron under Maj. Harry M. Brown. Maj. Brown's instructions were to be ready for combat in fourteen days. The 96th Aero Squadron<sup>4</sup>, operating under the temporary designation of the 1st Day Bombing Squadron, flew the first American bombing trip beyond the Allied lines into German-held territory on June 12, 1918.<sup>5</sup>

#### 166TH AERO SQUADRON<sup>6</sup>

This unit was organized as the 166th Aero Squadron December 18, 1917 at Camp Kelly, Texas, and was transferred to Wilbur Wright Field, Dayton, Ohio on December 24. This was the last Squadron to be assigned to the 1st Day Bombardment Group. The unit followed the training pattern of the 11th and 20th Squadrons. It embarked for England in February 1918, arrived in March, and was assigned to Catterich Bridge for ground crew training. It trained for six months in England then was transferred to France in August 1918. The unit moved several times before arriving at Delouze. It moved from Delouze to Colombey-les-Belles (Air Service Air Depot) on September 12, where it received Liberty Planes and flying crews. On September 21, 1918, the 166th joined the 1st Day Bombardment Group at Amanty airdrome.

## TROOP LIFE DURING TRAINING IN THE U.S. AND ENGLAND

Except for the 20th Squadron, little data exists about life at the U.S. training sites, the embarkation points, or the training sites in England. Considerable data does exist about the 20th Squadron<sup>7</sup>. It is safe to assume that 20th's experience in the U.S. and England was similar to that of the 11th and 166th Squadrons. The 96th Squadron's experience at the U.S. training sites would also be similar, but would differ overseas because the 96th did not train in England.

The 20th Squadron was first organized as 2nd Company "C" at Camp Kelly, then as the 15th Aero Squadron. This later designation lasted two weeks when it was discovered that another 15th Aero Squadron existed in California. The unit designation was changed to the 20th Aero Squadron. At Camp Kelly the men had to endure sandstorms, reptiles, biting insects, and "gully washers," when it rained. On arising each day they were well advised to thoroughly inspect their shoes for meandering reptiles or crawling, biting insects. Tents were blown down occasionally by the sandstorms. Camp Kelly was without a sewage system and there was only one water pump for over 2,500 men. Quite often, many of the men stood in line over two hours waiting to get a drink. When they did, it rarely quenched their thirst. It was not easy to get excited over a drink of warm water! The Canteen, the most popular spot at Camp Kelly, did a rushing business. It was not unusual to have lines of 200 to 300 men each day waiting their turn to buy cigarettes, ice cream cakes, or bottles of ice cold pop.

Life was much better after the move to Wilbur Wright Field. There were barracks with and adjacent mess hall, less sand, more water, less drill and more training on maintenance of the Curtiss JN4 airplane. Local townsfolk were very accommodating and many entertainment diversions were available.

En route overseas, the Squadron moved by train to Garden City, New Jersey. All along the way, local citizens served the troops coffee, sandwiches and cigarettes. Quite often reading materials were added to the citizens gifts of appreciation. But Garden City was no picnic! Troops were housed in unfinished barracks without heat. It was a cold November in New Jersey. A few men scouted around and found a stove which they removed from its site and set up in one end of their barracks. It was not much of a stove but it kept the troops from freezing. Base personnel discovered the missing stove and tried to take it away, but Squadron officers fought this attempt and the stove remained!

On December 15, 1917, the Squadron finally embarked on the English liner "Orduna." The 11th Squadron was also aboard. The Atlantic crossing in December was rough. Christmas day found the Orduna steaming into the teeth of a North Atlantic storm. Very few troops went to the dining room for dinner. Most lay in their bunks groaning and bewailing their misfortune. Aside from the bad weather, ship life was boring, with much reading and snoozing. Each day an officer conducted calesthentics on the upper deck. The men referred to this ritual as "physical jerks!"

The "Orduna" arrived at Grennock, Scotland, on December 31, 1917. A tug towed the ship to Glasgow. At 6 P.M. the Squadron disembarked, and marched directly to a train that took them to Winchester, England. The men were weary and hungry on their arrival at Winchester on New Years Day 1918. They were marched three miles up a hill to what was called a "rest camp" where they were given - if one could call it that their first meal in England. The meal consisted of small pieces of cheese, a piece of bread, one potato and a cup of tea. It was very cold with an icy wind blowing. The Squadron occupied two barracks, each equipped with a small stove. The stoves were kept red hot at all times, but they just couldn't keep the quarters warm. Breakfast consisted of a piece of bacon, one piece of bread, and a cup of tea. It seemed that the English didn't know what coffee was.

The Squadron existed on British rations until May 1918 when an American Quartermaster Depot was established close by and the troops fared a great deal better. There was one exception. Once a week the British quartermaster issued rabbit meat to the American quartermaster — rabbits which had been packed in Australia in 1911! The men simply could not stomach the rabbit. They always had a hole ready to



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bury the rabbits as soon as they were delivered. After a barrage of complaints, the U.S. Quartermaster discontinued the rabbit issue.

The English country folk and townspeople were very friendly and did their very best to entertain and visit with the troops. The Americans were always invited to British holiday celebrations and the British did all they could to participate with the Americans during American holiday celebrations.

#### Combat Airdrome Locations in France

During combat, the 1st Day Bombardment Group operated from two locations — Amanty and Maulan Airdromes (See map of Group's targets in Chapter III) Both of these airdromes were in the Toul sector of Allied operations.

Significant as far as air operations were concerned was the location of Colombey-les-Belles. Colombey-les-Belles, about ten miles southwest of Nancy, was the site of the 1st Air Depot and the central distribution point from which all Army Air Service units in the Zone of Advance received aircraft and supplies<sup>8</sup>

Amanty was approximately 20-25 miles southwest of Colombey-les-Belles. It was located adjacent to the Meuse river on a major road between Nancy and Neufchateaux/Dijon. Amanty was originally the location of the 1st Corps Aeronautical School. The 88th and 90th Observation Squadrons operated from Amanty for a short time before the arrival of the 1st Day Bombardment Group. Neufchateaux was the site of Col. Mitchell's Zone of Advance headquarters.

Maulan, the Group's second and last operating base, was on a main road a few miles south of Ligny-en-Barrios. Colombey-les-Belles was 35 miles to the southeast. The move from Amanty to Maulan Airdrome placed the Group twenty-five miles closer to its targets to the north. On modern maps,locating either Amanty or Maulan is difficult. These places were probably very small villages or the name of a local crossroad or other designation. Colombey-les-Belles, however, is prominent on the maps, as is Neufchateaux. For further aid in locating Colombey les Belles, it is 53 miles east of Troyes, and 65 miles southeast of Reims.

#### UNIT SUBORDINATION<sup>9</sup>

All U.S. Air Service combat units, with the exception of four squadrons operating with the British, were subordinated to the First Army, (AEF). Under the First Army there were six operating combat organizations: the 1st Pursuit Group, the 1st Pursuit Wing, the Army Observation Group 3rd Army Corps, and the Observation Group 7th Army Corps. The 1st Pursuit Wing had three operating Groups: the 2nd Pursuit Group, the 3rd Pursuit Group, and the 1st Day Bombardment Group. (See organization chart Flying Squadrons.)

Endnotes:

<sup>1</sup> Organized as the 1st Day Bombardment Group, US Air Service on September 10, 1918, the Group was later, on March 31, 1921 redesignated the 2d Group Bombardment.

<sup>2</sup> Combat Squadrons of the Air Force WW II, Office of Air Force History, 1961 pp.59-60

<sup>3</sup> Barth, C.G.: History of the 20th Aero Squadron. Originally published in 1920, reprinted by the Battery Press, 1990, PO Box 3107, Uptown Station, Nashville, TN., 37219.

<sup>4</sup> Combat Squadrons of the Air Force WW II lineage, Office of Air Force History, 1961

<sup>5</sup> The emblem of the 96th Bomb Squadron was first designed by 1st Roger Clapp. The first aircraft to fly with this emblem on it was a Breguet-14B2 #4018. Lt. Clapp was killed on 6 July, 1918, while test flying an aircraft of the 96th Bomb Squadron.

<sup>6</sup> Ibid Thayer, Lucien H.: Americas First Eagles. ed. McGee & Bender, p139

<sup>7</sup> The 166th Aero Squadron was redesignated the 49th Squadron on March 31, 1921. The 49th Aero Squadron participated in WWI as a pursuit squadron. Its lineage was transferred to the 166th at the time of redesignation.

<sup>8</sup> I bid, Barth: History of the 20th Aero Squadron pp. 6-28

<sup>9</sup> Sloan, James: The First Air Depot, Colombey-les-Belles, France. Journal American Aviation Historical Society, Fall 1981. pp. 221-230.

<sup>10</sup> Ibid, Thayer: Americas First Eagles p.178

#### CHAPTER III

#### 1st Day Bombardment Group Combat Operations

In 1918, Gen. Hugh Trenchard of the Royal Flying Corps and Col. Mitchell were attempting to bring strategic bombing into play as a major force in winning the War, and were little understood by the American General Staff or most other military minds. That bomber squadrons were considerd at all by the U.S. High Command was chiefly due to the fact that other nations had them, and much publicity was given in the press to German bombing raids on London and Paris.<sup>1</sup> Such was the military thinking when the 1st Day Bombing Squadron ( former 96th Aero Squadron), and later the 1st Day Bombardment Group entered combat.

All the targets of the 1st Squadron and 1st Day Bombardment Group were located in the German-held French territory in northeast France. (See target map.) The 96th Squadron was the first unit of the Group to operate against the enemy. Its first battle sorties were as the 1st Day Bombing Squadron. Initially, the 96th deployed to Amanty Airdrome with 10 Breguet bombers. The second increment of ten Breguet 14-B2's arrived at Amanty on or about May 28, 1918. Maj. Brown, the Squadron Commander, had issued instructions that the unit was to be ready for combat in two weeks. The biggest obstacle the unit had to overcome was the serviceability of the "old" Breguets. As it was then, and probably will continue to be, the flying reliability and "in commission rate" of Air Service/Air Corps/ Air Force aircraft is directly proportional to the ability, effectiveness, and innovation of ground crews. To get those old Breguets ready for action in fourteen days was due, principally, to the ingenuity of the mechanics. Fortunately, these men had the rare and unique experience of being trained in assembly of motors and planes in the Renault, Breguet, and Michelin factories. Under the supervision of Master Signal Electrician James M Sawyer, they scrounged worn-out farm machinery which had been discarded near the airdrome by French peasants. From this machinery they fashioned replacement parts for the Breguets. One ship needed a tail post. It was supplied from a weather-beaten harvester. Wagon tires were sliced into arcs and used for tail skids. Portions of a cart tongue went to reinforce wing spars. Telephone lines, cut in short lengths, made successful brace wires for the plane surfaces. When plane No. 4014 crashed and was salvaged, its spare parts were so vital that each of the other nine old Breguets carried some part of No. 4014 when they were put into service.<sup>2</sup>

#### LORRAINE CAMPAIGN

For the first American bombing raid Col. Mitchell, other staff officers, and Gen. Hugh Trenchard of the Royal Flying Corps and part of his staff came to Amanty to see the 96th Squadron off — a signal honor for this new American bombing squadron.<sup>3</sup>

Heavily loaded with bombs, eight Breguets took off on June 12, 1918, climbed to 12,000 feet over Amanty, assembled in formation, and headed for the 96th's first combat target -Dommary-Baroncourt. Two Breguets were forced to return to base because of engine problems. The specific targets were the railroad spurs and the adjacent warehouses. Maj. Brown led the raid. His observer was Lt. Howard G. Rath. The mission was eminently successful. The formation received continuing antiaircraft fire on its way to and from the target4. This did not deter the mission; they plowed through to the target and dropped their 640 kilograms of bombs. Their accuracy was not too bad. The bombs ripped up the railroad tracks, and plastered the warehouses, where the crews observed several secondary explosions. On the return, the formation was attacked by three German pursuits. The bombers pulled tightly together and poured machine gun fire into the pursuing German aircraft. The Germans, unable to stand that kind of withering fire, withdrew. In the exchange, 1st Lt. Charles P. Anderson received two explosive bullets in his plane motor, but was able to return to base. He became the first aircraft commander to receive hits by enemy fire. Three aircraft were forced down short of Amanty with empty fuel tanks.5 The remaining planes made it back to Amanty at 8:00 P.M. All planes got back on the ground safely, including those forced down, and all 96th Squadron personnel were justifiably elated. There was much celebrating that night to honor the unqualified success of the first American bombing raid in history.

In the next ten days, the Squadron flew three separate raids against Conflans, a vital German transportation artery in French territory, that also contained a large concentration of German military supplies. A total of 2,000 kilograms (kg) of bombs was dropped during the three missions. Bomb damage assessment revealed that these raids did serious damage to the German rail network.

Between June 25 and July 5, 1918, Maj. Brown tried, unsuccessfully, four times to lead the 96th formation against Longuyon, another German transport and supply network. The ef-



96th Aero Squadron (operating as the 1st Day Bombing Squadron) aircrews-June 1918.



Takeoff on first mission. Maj. Brown, 96th Squadron commander, is the first aircraft off the ground.

forts failed because of terrible weather and aircraft malfunctions.

On July 10, the 96th experienced its first and greatest single-mission loss. All six missionlaunched aircraft failed to return to base. With Maj. Brown leading and Lt. Harold A. MacChesney as his observer, the six aircraft took off on another mission to Conflans. The six aircraft assembled at 8,000 feet over Amanty and headed northward towards Conflans. Over Vaucouleurs, a few miles north of Amanty, they went above the clouds which were then nearly 10,000 feet. At this height, unknown to them, they ran into 60 mph winds from the southwest. As they approached what was thought to be Conflans, they could not get a good ground fix. The weather was just too heavy. They became completely lost. After more than ninety minutes of flying, they came out over a large town on a broad river, a location not included on their maps. It is suspected that the town was Coblentz on the Rhine River which placed them miles deep into Germany. Maj. Brown decided not to drop bombs on this unidentified target. Now, at 8:00 P.M. in growing darkness, the Squadron turned southwest, broke up, and each aircraft headed home on its own. On a southwest heading, the



Aerial photo of Dommary Baroncourt - the first target.





Breguet 14 over France, 1918.



DH4's of the 20th Squadron at Maulan Airdrome, France. (Courtesy of Eighth Air Force Museum)



11th Aero Squadron and DH4 Liberty planes, Amanty Aerodrome, France, before first mission, September 14, 1918. (Courtesy of Eighth Air Force Museum)

aircraft were flying into the teeth of the 60 mph wind. They had been in the air for two hours and their fuel supply was low. Their average ground speed was not much more than 25 mph. One by one, they ran out of fuel. All came down in German-held territory, were taken captive, and spent the balance of the war as POWs in camps at Karlsruhe, Landshut and Villingen, Germany.

Maj. Brown and Lt. MacChesney managed to escape and evade the enemy for nine days. They were captured on July 19 as they attempted to cross into Luxembourg.<sup>6</sup>

This collective misfortune left the 96th Squadron flat and without a commander. For two weeks it had only two planes in the hangar and one on the ramp ready for duty. It wasn't until the latter part of July that eleven more Breguets arrived.

#### ST. MIHIEL CAMPAIGN

In August 1918, the 96th commenced another bombing campaign associated with the St. Mihiel offensive. The 96th effort was against the German forces at their most important centers of communication in France: Dommary-Baroncourt, Longuyon, Audun le Roman, and Conflans. The 96th flew 20 successful missions in 14 days and dumped over 18,000 kg of bombs on vital enemy transportation targets in Germanheld French territory. Of the more than 18,000 kg of bombs, 5,760 kg were dropped on Dommary-Baroncourt, 2,680 kg on Longuyon, 960 kg on Audon-le-Roman, and 8680 kg on Conflans.<sup>7</sup>

Photos taken before the 96th raids showed the great railroad junctions in and near Conflans to be in flourishing condition. The tracks were crowded with rail cars. Bomb damage assessment photography after the attacks revealed the rail yards largely stripped of rail cars and pitted and pocked with bomb craters.

About the 1st of September 1918, aircrews of the 11th and 20th Squadrons went to Colombey-les-Belles to pick up their DH4 aircraft. They found that the aircraft had been sitting in the rain for weeks, and it took many hours of checking, rigging and test flights to bring each one to optimum flying condition. None of the DH4's had been equipped for bombing duty.<sup>8</sup>

On September 7, the 20th Squadron arrived at Amanty with its complement of Liberty Planes. The 96th dropped its temporary designation as the 1st Day Bombing Squadron and both the 96th and 20th Squadrons became part of the new 1st Day Bombardment Group. On or about September 10, the 11th Aero Squadron arrived with its Liberty Planes. Last to arrive was the 166th Aero Squadron, on September 21. Maj. J. H. Dunsworth became commander of the newly formed Group.

#### COMBAT OPERATIONS AS A GROUP

The Group mission in the St. Mihiel campaign was to attack enemy railroad junctions and stations, warehouses, troop concentrations, and the cities of Metz, Conflans, Briey, Thionville, Corney, Longuyon and other targets in the rear of the German forward lines.

The 96th, with over two months combat experience and flying the combat-tested Breguet-14, led the way in the St. Mihiel campaign. On September 12 the weather was bad, with rain and low clouds. A single 96th Breguet, loaded with thirty-two 90mm anti-personnel bombs, and operating from a forward base at Maulan, took off in the early morning against an enemy troop concentration at Busieres<sup>9</sup>. The aircraft reached the target and dropped its bombs, but was shot down. Later that day, the weather improved, and a flight of eight Breguets, led by Capt. D.H. Young, bombed a troop center at Buxerelles. The flight flew directly over St. Mihiel but drew no antiaircraft fire.<sup>10</sup>

Later in the afternoon, orders were given to bomb enemy troop concentrations at Vigneulles, a central point of the German withdrawal. This was a costly raid for the 96th. Five Breguets were launched. No aircraft were lost to enemy action, but the late departure at 6:35 P.M. meant returning after dark. The returning aircraft attempted to land by flares. Only one got down safely. One aircraft crashed in the trees on approach, two others got down but nosed over and piled up on the field, and the fifth aircraft crashed into an adjacent plowed field. While all of this was happening, a Salmson (French- built) observation plane en route to the 5th U.S. Corps at Luxeuil attempted a forced landing at Amanty and was carried across the field by stiff cross winds. The Salmson bounced sideways and crashed into two parked Breguets loaded with bombs. Miraculously, the bombs did not go off, but all three planes were destroyed. The 96th's total loss for the day was one aircraft down due to enemy action, four crashed or damaged attempting night landing and two destroyed by friendly action.11 Four crewmen dead, one injured and the loss of eight aircraft, all in one day, was a sickening blow to the 96th.

On September 14 the 11th, 20th, and 96th Squadrons took off on their first major combined operation into enemy territory. Although the 96th had suffered severe losses over the preceding two days, it had ten Breguet-14s ready for the mission. The target was Conflans. Bombing results were excellent. The main point of impact was on the neck of the railroad yards. Immediately following the 96th were the Liberty Planes of the 11th and 20th Squadrons. Their bombing was equally effective as the 96th's. The 11th and 20th literally destroyed the center of Conflans and inflicted severe damage on the rail yards. The main rail track was demolished while a sixty-car train was standing ready to enter Conflans from Briey. Additionally, a warehouse on the edge of town was totally demolished.<sup>12</sup>

On return from Conflans, the 96th was attacked by twenty enemy pursuit planes. Fortunately, the 96th made use of cloud cover for its defense and avoided any severe combat damage. On their return, the 11th and 20th were attacked by nine enemy Fokkers. In the running battle the formation lost two aircraft but succeeded in shooting down two Fokkers.

Later on the same day, two other successful missions were carried out against road systems between Arnaville and Vittonville, and transport targets in Dommary-Baroncourt. On September 15, the three squadrons went against Corney, Bayonville and Longuyon. Twenty-six aircraft were launched but only half that number reached their targets. Bad weather and aircraft malfunctions reduced the attacking force. It should be understood that these were the very early days of weather flying by crews untrained or poorly trained, at best, for instrument flying, and in aircraft ill-suited and not instrumented for weather flying. Many of the combat missions during the St. Mihiel campaign were flown in and through heavy cloud cover. Rains played havoc with landing grounds and made living conditions miserable. Additionally, air crews had little experience with high winds aloft. Aerial maps of the combat zone left much to be desired and most aircrews were not particularly well trained in the art of aerial navigation.

Between September 12 and 18, the 96th suffered sixteen personnel casualties and fourteen planes destroyed or crashed. The 11th and 20th Squadrons lost a total of five aircraft and ten crew members.<sup>13</sup>

In the five days from September 12, through September 16, 1918, the 1st Day Bombardment Group dropped 18,256 kg of bombs on enemy targets. Numerous awards for bravery were given to Group personnel. After the St. Mihiel campaign, Gen. Pershing, Commanding General American Expeditionary Force (AEF), sent a personal letter to all U.S. Air Service units that had participated in the campaign. Col."Billy" Mitchell sent the Group a copy of the Pershing letter and a congratulatory letter of his own. Several days later Gen. Patrick, Chief of the Air Service, wired his thanks to the 1st Day Bombardment Group.<sup>14</sup> Gen. Pershing's letter was as follows:

#### My dear Colonel:

Please accept my sincere congratulations on the successful and very important part taken by the Air Forces under your command in the first offensive of the First American Army. The organization and control of the tremendous concentrations of Air Forces, including American, French, British and Ital-



Captain Sellers, C.O. 20th Bombardment Squadron on the left and 1st Lt. Joseph Wallach, Squadron Medical Officer.

ian units, which enabled the Air Service of the First Army to carry out so successfully its dangerous and important mission, is as fine a tribute to you personally as is the courage and nerve shown by your officers as signal proof of the high moral[sic] which permeates the service under your command. Please convey to your command my heartfelt appreciation of their work. I am proud of you all.

Sincerely yours, John J. Pershing.

The Group continued to operate against German-held towns until September 23, 1918, when it moved to Maulan airdrome near Ligny-en-Barrios. This move,in preparation for the Argonne Campaign, placed the Group closer to its targets to the north.<sup>15</sup>

The Group stood down for a week to move, as surreptitiously as possible, to Maulan. The St. Mihiel battle had cost the Group thirty-five flying officers, or nearly 35% of the total active flight personnel. Not all were killed, but the suddenness of death, or capture, seemed especially brutal. Fifteen of the casualties had been in their squadrons less than one week.<sup>16</sup>

Maulan was a most inconvenient place. The hangars and flying field were atop two low hills bisected by a ravine and a road of sorts, while the mess and living quarters were along the base of the hills. Movement of supplies and armament was very difficult, because there was never enough motor transportation. Nearly everything brought to the hangars and airplanes was moved by hand or on handcarts, including bombs, and it was uphill all the way.

Arrangements for use of Maulan were poorly handled; half of the shelters were in use by Italian laborers working under French direction and they stayed for nearly six weeks. Some air crews and most ground personnel slept in hangars. An adequate supply of wood for heating and water for personal use was a persistent problem because trucks needed for hauling were being used elsewhere. As a consequence Group morale suffered.<sup>17</sup>

#### **ARGONNE OFFENSIVE**

The 166th Squadron arrived as the Group was moving to Maulan. The 166th was only partially equipped and did not start combat operations until October 18, 1918.

The targets during the Argonne campaign were important rail junctions and depots, troop concentrations, and supply depots and dumps. These targets were more widely dispersed than the targets in the St. Mihiel offensive. The Group's first major targets were the bridges across the Meuse river at Dun-sur-Meuse that served the German forces. Six 96th Breguets led the attack with good bombing results. As the 96th left the target, it was intercepted in a coordinated attack by ten German Pfalz Scouts. The 96th maintained a tight formation and lost only one observer while fending off the attack, and sending two Pfalzes down in flames. The 11th and 20th Squadrons followed close behind the 96th. Their bombs were on target and as they turned away, eight Pfalzes pounced on them. Immediately after the first pass, the Pfalzes were

joined by fifteen Fokkers. All hell broke loose! There was a running fight for thirty-five minutes. The 11th and 20th lost 5 pilots, 7 observers, and 5 Liberty planes.<sup>18</sup>

On September 27, the Group launched morning and afternoon raids against four targets -- Mouzay, Etain, Bantheville, and Grandpre. The largest raid by far was against a key site of German resistance in the Argonne Forest at Grandpre. Twelve Breguets from the 96th and 11th Squadrons and twenty Liberty Planes from the 11th and 20th Squadrons flew that mission. Aircraft malfunctions and weather reduced the attacking force to six Breguets and thirteen Liberty Planes.<sup>19</sup> Despite the reduced force, the mission was highly successful and considerable damage was inflicted against the enemy works.

On October 1, thirteen Breguets of the 96th Squadron severely harassed German communications and rail transport near Bantheville. Several fires were started in the town.

The next day, fourteen Breguets and fourteen Liberties achieved outstanding results against Cornay. This raid was unique because enlisted men were used as observers/gunners for the first time.

On October 2, 1918, Maj. Thomas Bowen became Group Commander, relieving Maj. J. L. Dunsworth. The morning of October 4, the 96th Squadron launched a raid against Dun-sur-Meuse. The bombing was excellent. Direct hits were observed all over the town, and several fires erupted throughout the area. During the return, the 96th was attacked by fifteen German pursuits. In the twenty minute running battle one 96th aircraft was shot down. Its crew, although wounded, evaded capture and made it safely back through Allied lines. That afternoon the 96th raided Landres-St. George, dumping over 227 kg of bombs. Cloud cover and mist were so heavy the bombers had to go in at 5,000 feet. Landres-St George was devastated. Coming back, the 96th was attacked by thirty German pursuits. Fighting was hot and heavy. The Breguets, in tight formation, poured withering fire into the attacking Germans until Spads of the 2nd Pursuit Group, which included the 49th Aero Squadron, came to the rescue. In the following dogfight, the 96th shot down two German pursuits, and the 2nd Pursuit Spads shot down eleven, of which the 49th received official credit for nine. The 96th didn't lose an aircraft.<sup>20</sup>

The 20th Squadron sent nine Liberty Planes against Landres-St. George but they were not able to bomb the target due to heavy cloud coverage. All aircraft returned safely.

On October 9, the Group took part in one of the greatest bombing raids of the war. The Group Breguets and Libertys were among 353 Allied planes, 200 of which were bombers led by Col. Mitchell, which struck German troop concentrations preparing for a counter attack against the Allied offensive in the Meuse-Argonne area.<sup>21</sup> The Group's targets were Bantheville, Doulcon, St. Juvin and Landres-St. George. The attacks were outstandingly successful. The German counterattack never materialized in strength.

On October 10, the 20th Squadron attacked Devant Dun and was chased by German Scouts. During the air battle the 20th Squadron lost one Liberty Plane and shot down three of the enemy.

A week of bad, rainy weather followed. This gave the Group time to rest its aircrews and refit the aircraft and ground-support systems. Operations resumed on October 18. The target was Bayonville. The Group had 82 aircraft, 64



Capt. Summerset, 96th Squadron Commander.

pilots and 71 observers available for duty. All four squadrons launched a total of 55 aircraft. This was the first raid for the 166th Squadron. It launched 10 aircraft, got 8 to the target, and successfully fought off 20 Fokkers on the return trip.<sup>22</sup> Bombing results by the Group were excellent. Nine hundred seven (907) kg of bombs were dropped and subsequent intelligence reports revealed that about 250 Germans were killed and over 700 wounded. Group Commander, Lt. Col. Bowen, who had just been promoted, took part in the raid as an observer/gunner.<sup>23</sup>

Five more days of inclement weather followed. The Group again rested and refitted. This five-day stand down was the Group's last respite until the end of the war.

Beginning October 23, the Group flew thirteen consecutive days against German troops, supply dumps, and transportation facilities, in support of the last Allied offensive of the war. Specific targets included enemy troops in the forest areas of Bois de la Folie and Bois de Barrincourt, and troop and supply concentrations in the cities and villages of Briqenay, Montigny, Damvilliers, Bayonville, Mouart, Belleville, Tally, Stanay, Martincourt and Beaumont.24 German air resistance was fierce. Group formations were attacked on most every mission. Despite these desperate enemy attacks, the Group wreaked havoc on retreating German forces. The Group lost thirteen aircraft, either by shootdown or crash landing due to enemy fire. The Group shot down seventeen German pursuits.

The Group's final mission took place on November 5, 1918, in an attack against Mouzon. The 96th had been so badly battered in the earlier actions, and the 11th had such aircraft problems, only the 20th and 166th Squadrons carried out the last attack. The mission produced good bombing results and none of the bombers were lost to enemy air action, <sup>25</sup> Thus ending the 1st Day Bombardment Group combat operations in World War I.

#### Enlisted Men as Air Crew Members

Originally, it was not the intention of the U.S. Air Service to use other than officers as aircrew members. By the fall of 1918, Group casualties became so severe there were not enough officer observer/gunners for scheduled missions. On October 1, the Group used enlisted observer/gunners for the first time. There may have been more, but available records show just nine enlisted men were used as air crew members.<sup>26</sup> Listed in order of combat missions flown, these enlisted men were as follows:

Sgt.1st Class Fred C. Graveline, 20th Sq, 15 missions

Pvt. Leary, 96th Sq, 4 missions

Sgt J. S. Trimble, 96th Sq, 3 missions

Sgt. Van Rossom, 96th Sq, 2 missions

Cpl Raymond C. Alexander, 20th Sq, 2 missions

PFC Hoyt Fleming, 20th Sq, 1 mission Sgt 1st Class Claude J. Brodeur, 20th Sq,

1mission

Sgt. White, 96th Sq, 1 mission

Pvt Cedric Newby, 11th Sq flying with 96th Sq, 1 mission



Staff and flight officers, 96th Bomb Squadron, WW I. (Courtesy of Eighth Air Force Museum)



96th Squadron Breguet 14 en route to a German target - 1918. (Courtesy of Eighth Air Force Museum)

Sgt. Graveline's gunnery record reflects two enemy shootdowns and one probable. Sgt. Trimble had one shootdown and Cpl. Alexander one shootdown.

Except for Sgt. Graveline and Cpl. Alexander, little exists in official records about the combat experiences of these early enlisted air crew members.

The details about the combat records of Sgt. Graveline and Cpl. Alexander deserve repeating here. Sgt. Graveline was acting First Sergeant of the 20th Squadron. It became apparent to Graveline that the spate of casualties among observer/gunners would prevent the Squadron from launching all of its crews on combat missions. Fully acquainted with the dangers of aerial combat, Sgt. Graveline volunteered to act as observer/ gunner on the next combat mission. He flew his first mission on October 1, 1918. Between that date and November 5, Sgt. Graveline started on seventeen bombing missions and successfully reached the objective on fourteen.

On October 10, in the course of a raid on Villers-devant-Dun, the formation was attacked by a large number of enemy aircraft. Sgt. Graveline was flying in a very exposed position at the rear of the formation He engaged six of the enemy aircraft, sending one down in flames and preventing the others from attacking the rest of the formation. During the course of this entire fight, he held his exposed position at the rear of the flight. On November 5, during a raid on Mouzon, his formation was attacked by twenty to twenty-five enemy aircraft. Sgt. Graveline was again flying in an exposed position at the rear of the flight. In the following fight, Sgt. Graveline sent one enemy aircraft down in flames and aided in driving away the remainder of the German fighters. Throughout his combat tour, he continued to discharge his duties as Squadron 1st Sergeant. For his intrepid actions in the air, Sergeant First Class Fred Graveline was awarded the Distinguished Service Cross.

Cpl. Raymond C. Alexander also volunteered to fly as observer/gunner. Cpl Alexander worked in the gunnery section of the 20th Squadron. He had previously completed three courses in aerial gunnery. Cpl. Alexander was assigned to an aircrew on or about October 10. He was always ready to go on missions, even under the most adverse and dangerous circumstances, and took part in three successful raids over enemy lines. On November 5th, Cpl. Alexander flew as observer with 1st Lt. Lewis Koepfgen, in a bombing raid of eight planes over enemy lines against Mouzon. The 20th Squadron formation was attacked by a superior force of enemy Scout planes. In the aerial battle that followed, three 20th Libertys were shot down. Lt. Koepfgen's plane was flying at the rear of the formation. When

attacked, he flew his aircraft from side-to-side across the rear of the formation to give as much protection as possible. This left Cpl. Alexander exposed to the fire power of all fourteen of the attacking hostile planes. Cpl. Alexander was wounded in the leg at the beginning of the fight.



Sgt. 1st Class Fred Graveline wearing his DSC and the half wing of an observer. The shoulder patch is that of the 1st Army Air Service. (Courtesy of National Archives)



Intelligence Office, 1st Day Bombardment Group. (Courtesy of Eighth Air Force Museum)



96th Squadron Operations Hut, Amanty Airdrome - 1918. (Courtesy of Eighth Air Force Museum)

Still, he continued firing his guns with such coolness and accuracy that he sent one enemy plane down in flames and kept the nearest attacking planes at bay until the 20th Squadron crossed Allied lines.<sup>27</sup>

These few courageous enlisted men, with Sgt. Graveline as the leading figure, were the predecessors of those enlisted gunners who manned the bomber turrets, waist and tail guns 25 years later in World War II. They set high standards of courage and professionalism for those who followed as enlisted bomber crew members.<sup>28</sup>

#### **TROOP LIFE IN FRANCE**

The most accurate account of living conditions in France, in the Zone of Advance, comes from the book: History of the Twentieth Aero Squadron.<sup>29</sup> The 20th Squadron arrived in Le Havre, France, on August 19, 1918. The troops were given hot vapor baths which helped to perkup everbody's spirits. Around midnight, the Squadron marched through the darkened streets of Le Havre to the train station. They boarded passenger trains, instead of the 40 and 8 box cars commonly used for troop transport. The room available to each man in the eight-man compartments was about the same as that for troops in the box cars. The journey took four nights and five days to arrive at the Air Service Reception Depot at St. Maixtent, France.

Every day the troops thought they would be moving to the front. They stayed at St. Maixtent two days, then moved to Romarantin, an Air Service Depot use to assemble aircraft. At Romarantin, the troops made a four mile hike up hill, in the blistering sun, to a barracks area, only to find they were at the wrong place. Four days later they marched downhill to another troop train for a trip to Colombey-les-Belles. After the train started, the destination was changed to Mauvages. A few troops had maps but despite careful scrutiny, no one could locate Mauvages. After they arrived at Mauvages, it became apparent why they couldn't find it on the maps. Mauvages was merely a railroad station with no adjacent city or even a village. Some wondered if a trip of four days had been worth the effort just to reach a railroad station.

The answer was soon forthcoming. They were marched four miles to the village of Delouze. Here they were told to start an airdrome. The first week was spent cleaning the place. The second week the first Liberty Planes and several flying officers arrived. On September 7, the Squadron moved a few miles to Amanty airdrome. The men believed that they would be part of a biplane pursuit unit because there were no bombs available at Amanty.

On the evening of September 13, just six days after their arrival, the 20th and the 11th Squadron, which had arrived at Amanty on September 7, were ordered to bomb Conflans the next day. All that night ground crews hauled bombs by truck from the Depot at Colombey-les-Belles some thirty miles away. In the early morning hours of September 14 the armorers were loading the planes with bombs and ammunition. By daylight, the 11th and 20th Squadrons had been transformed into bombing squadrons.

Conditions under which the 11th and 20th Squadrons began operations were far from ideal. None of the pilots or observers had ever been over enemy lines. Some of them had never flown in Liberty Planes, and none had an opportunity to learn what effect bombs had on the handling of the aircraft. The majority of the pilots had been trained in smaller aircraft which were much easier to handle than the Liberty Planes.

#### LIVING CONDITIONS

The troops lived in barracks. The officers had smaller capacity hutments and the enlisted men the more common type of barrack. There was a canteen available for the enlisted men and it was heavily patronized. There were separate mess halls for enlisted men and officers. The food was Army Quartermaster rations supplemented with vegetables, fruits, and some meats purchased from the surrounding French villages. The biggest problem at Amanty was keeping things dry. The local French said that the late fall of 1918 was one of the more rainy periods in years. Although there were some board walks throughout the camp, most of the moving about was on the ground, which was generally wet and muddy.

On September 23, after only sixteen days at Amanty, the Group moved to Maulan, north of Amanty and 25 miles closer to the Group's German target objectives. From a weather standpoint, life was miserable at Maulan. It never ceased to rain, and at one time the troops wore their rubber boots for nearly a month without putting on shoes. The barracks were in a heavily wooded forest. The hangars were right at the edge of the forest with very little of the hangar on the flying field. A big "Y" (YMCA) hut was located on the airfield and many a pleasant evening was spent there. A canteen was operated in conjunction with the "Y" hut and proved to be a popular spot for the troops.

Whether located at Amanty or Maulan, the troops always located French women who would do their laundry. Sometimes the stores in local French villages had beautifully embroidered stocks of silk aprons, pillow tops, and scarfs. These fancy stocks did not last long, for the troops snapped them up as gifts or souvenirs for their families at home. The Group's time of deployment within the Zone of Advance was at the height of the Allied air attack against the Germans. Therefore, there were no leaves or passes to nearby cities of Reims, Troyes or even Paris. It was work, fly, work, and fly each day the weather permitted! Bombs were hauled by trucks to the airplanes through the persistent mud. Aircraft were moved by hand, by truck, and by horse and wagon. The aircraft were hand-fueled from drums of fuel delivered to the plane either by truck or by horse and wagon.

Many of the aircraft malfunctions were caused by the inclement weather and persistent rain. Aircraft became bogged down in the mud during taxi to the runway. On takeoff rolls, the aircraft caused so much mud to be slung up against the undercarriage and propeller that either the undercarriage axle would fail or the propeller would split into smithereens from the flying mud. On landing, many aircraft hit soft spots in the airfield and nosed over causing damage to the propellers and wing surfaces. It was no picnic for the maintenance men, the propeller men, or the landing-carriage men. Aircrews had other unusual problems. The fuel was supplemented with castor oil as a lubricant. After missions, as mentioned earlier, many of the aircrew suffered diarrhea from breathing the Castor Oil fumes while in flight.

#### ARMISTICE SIGNED

November 11, 1918 was a day of great rejoicing! The news of the Armistice signing reached the Maulan Airdrome about 9:30 P.M. and from then on it was like the flood gates of hell were let loose. The troops used anything they could lay their hands to make a noise: rifles, revolvers, automatics, flare pistols, signal rockets and even bombs. A few bombs were taken out on the field and exploded by electric current, an ingenious idea that was frowned on but understood by the staff.

#### Endnotes:

 Sloan, James J. Jr.: Wings of Honor - American Airmen in World War 1. 1994. Schiffer Publishing Ltd., 77 Lower Valley Rd., Atglen, PA., 19310. p.161
 Ibid, Thayer: Americas First Eagles. p.139 <sup>3</sup> Sloan, p 164

- <sup>4</sup> The aviators terms for anti-aircraft fire in WW I was "Archies"
- <sup>5</sup> Ibid, Thayer: Americas First Eagles p. 140
- <sup>6</sup> Ibid, Thayer: Americas First Eagles p. 141
- <sup>7</sup> Ibid, Thayer: Americas First Eagles pp.181-182
   <sup>8</sup> Ibid Sloan. p. 241
- <sup>9</sup> Ibid, Thayer: Americas First Eagles p.195



Ground crew, 96th Squadron who constructed model of Breguet 14 - note the bomb suspension. (Courtesy of Eighth Air Force Museum)



Breguet 14 at Maulan - note rear towing wheels and model of a Breguet on the left wing. (Courtesy of Eighth Air Force Museum)

- <sup>10</sup> Ibid, Thayer: America's First Eagles p.196
- <sup>11</sup> Ibid, Thayer: America's First Eagles p.196
- <sup>12</sup> Ibid, Thayer: America's First Eagles p.197
- <sup>13</sup> Ibid, Thayer: America's First Eagles p.200
   <sup>14</sup> Ibid, Thayer: America's First Eagles p.203

<sup>15</sup> Maulan airdrome was some 30 miles to the north of Amanty. Operations from Maulan against the German target complex to the north would give the Group about fifteen (15) minutes more flying time in the target area. <sup>16</sup> Ibid Sloan p 245

<sup>17</sup> Ibid Sloan p. 355

18 Ibid, Thayer: America's First Eagles p.222

19 Ibid p.222

20 Ibid. p223

<sup>21</sup> Report issued by the Albert F. Simpson Historical Research Center, USAF, dated 21 November, 1944. p. 7.

<sup>22</sup> Ibid, Thayer: America's First Eagles p.224

23 Ibid, Thayer, p.226

 <sup>24</sup> Barth, Clarence G., "History of the Twentieth Aero Squadron", The Battery Press, PO Box 3107, Uptown Station, Nashville, TN., 37219. Pp91-96
 <sup>25</sup> Ibid, Thayer: America's First Eagles p.228
 <sup>26</sup> Olmstead, Merle: "An Airman to Remember",

Journal American Aviation Historical Society, Summer 1980. pp119-123.

<sup>27</sup> Ibid, Barth: History of the 20th Aero Squadron pp.60-62
 <sup>28</sup> Ibid, Olmstead, p.123

29 Ibid, Barth: Hist Twentieth Aero Sq.p.28

#### CHAPTER IV

#### Combat Operations Statistics — Winding Down — Going Home

#### TRIPS FLOWN

In 1918 a mission/sortie was classified as a "trip." It seems there was no Group record kept by mission or sortie number. Therefore, no precise account of the number of missions flown by the Group is available. Records were kept of the number of "trips" flown by the 20th Squadron

between September 14 and November 5, 1918 and the number of trips flown by the 96th Squadron between June 12, and November 4, 1918. The last Group trip was flown on November 5, 1918, by the 20th and 166th Squadrons. Neither the 11th nor the 96th flew the last trip.

Comparison of the 96th Squadron trip records with the 20th Squadron trip records indicates that the Squadrons did not always attack the same targets on the same days. On some trips all four Squadrons attacked the same target, and on other trips each Squadron had a separate assigned target.

The 96th record shows sixty-two trips to targets. The 20th record shows thirty-two trips. However, from September 14, to November 5th, the 20th attacked twenty-one different targets from those attacked by the 96th. This provides a trip figure of eighty-three trips against enemy targets from the first on June 12 to the last on November 5, 1918. Further inspection of trip records of the two Squadrons shows that frequently more than one trip was flown per day. The 96th Squadron flew fourteen multiple missions on single days, and the 20th flew seven multiple missions on single days.

Since trip records for the 11th and 166th Squadrons are not available, it must be assumed that these Squadrons also attacked separate targets on certain days. Unfortunately, it is not known how many separate targets were attacked. The eighty-three trips for the 96th and 20th Squadrons is a firm figure, therefore, the total trip count for all four Squadrons would be higher, giving the Group a record approximating as many as 100 trips. (See Appendices 1 & 2.)

#### COMBAT LOSSES-AIR ACTIONS ONLY

Again, an accurate count of aircraft lost due either to combat operations, weather, ground



Surviving seven aircrew officers of original twenty eight aircrew officers assigned to 20th Squadron. From L to R: 1st Lt. Joseph Wallach, Squadron Medical Officer; 1st Lt J.Y. Stokes, Observer/DSC; 1st Lt W.S. Holt, Observer; 1st Lt Sidney Howard, Pilot; Capt Cecil Sellers, Pilot, Squadron C.O./DSC; 1st Lt Donald McWhirter, Pilot; 1st Lt L.P. Koepfgen, Pilot; 1st Lt Gardner Fiske, Observer.

accidents, or training crashes is not available. It can be said with a high degree of certainty that the Group combat loss totaled 39 aircraft -22 Breguets and 17 Liberty Planes.

#### TARGETS ATTACKED

Targets attacked by the 96th Squadron, operating separately, and the 1st Day Bombardment Group, were primarily transportation network interdiction targets, supply depots, troop concentrations, and targets of opportunity. Forty-three targets were attacked, some more than once. Conflans, Dommary-Baroncourt, Longuyon, Bantheville, and Grand Pre were all struck more than once. The first target attacked by the 96th was Dommary-Baroncourt. The last target attacked by the Group was Mouzon. Defined in current terms, the Group performed tactical support missions and had its operations confined to that area immediately behind the enemy front lines. (See Map - Targets of the 1st Day Bombardment Group and Appendices 1 & 2)

#### GROUP AIRCRAFT TABLE OF ORGANIZATION

Of the two types of aircraft assigned - the French Breguet-14B2 and the DH4 Liberty Plane - the Breguet was the better of the two. It had greater lifting capacity and a longer range. At one time there were eighty-two aircraft assigned to the Group, but the normal complement was 20 Breguet and 60 Liberty Planes. The average in-commission rate for all the aircraft was 73%. There were several times during the final campaign (Argonne) that the Group launched fifty aircraft at one time. The average number of planes available for missions between September and November 1918 were as follows:

11th Sq	15
20th Sq	18
96th Sq	17
166th Sq	14

#### WEATHER

August, September, and October 1918 were the rainiest France had experienced in years. In August there were only fourteen flying days and in September only twelve. October was little better at sixteen flying days. The Group probably lost as many aircraft to weather, and accidents, as it did to enemy action. The loss of six Breguets in July to weather was the worst non-combat loss.

#### BOMBS DROPPED

The 96th Squadron operating separately from June through August 1918 and the Group from September to November 5, 1918, dropped a total of 101,219 kg of bombs on the enemy. By campaign, the kilograms dropped were:

Lorraine	20,460 kg
St. Mihiel	34,626 kg
Meuse Argonne	46.133 kg
Total	101,219 kg

The kilogram weight of bombs dropped converts to 223,145.92 pounds, or 111.57 tons.

#### TYPES OF BOMBS USED

It is known that the following armament were used: 90mm fragmentation bombs, 155mm penetration bombs, some type of an incendiary bomb, and a 250 kg bomb. Records for the 20th Squadron indicate that the 155mm penetration bomb was used almost exclusively.1 No bomb weight for the 155mm bomb is given. Probably, the 250 kg bomb was more often used by the 96th flying the Breguet-14. The Liberty Plane probably carried two bombs of about 150 kg each. The Breguet probably carried four bombs of similar weight. There is one instance of a Breguet carrying thirty-two 90mm fragmentation bombs. This was classed as a record load. Bombs used for the destruction of material were the Michelin 155mm and the 115mm fragmentation bombs with delayed fuses. Incendiary bombs were used against buildings. The 90mm anti-personnel bombs, both steel and cast metal, exploded on impact and were used against troops.2

#### CASUALTIES

An accurate count of casualties does not exist. In its five months of combat, the 96th lost the most personnel. One source sets the 96th's casualties at forty-seven for all causes - killed or missing in action, accidental death, wounded in action, and prisoners of war. Another source sets the total at thirty-eight. The highest casualty rate was among air crew observers. The Group had forty-two casualties during the last campaign -Meuse Argonne. Statistics available for the 20th indicate that from September to November 1918 there were twenty killed and thirteen wounded, but there was no figure for missing in action or for shot down and captured.3 Another source lists the 20th with 13 killed in action, 4 killed in crashes, 7 taken prisoner and 3 wounded.4 On November 5, the 20th Squadron only had seven officers of the original twenty-eight on the Squadron rolls. The best available records show the Group lost 39 killed in action and 10 killed in crashes. (See Appendix 4.)

#### AIRCRAFT LOSSES

By November 5, 1918, the 96th Squadron had one plane left, number 4018, out of the original ten assigned. This plane had numerous mechanical problems and was always on the ground when the 96th had combat losses. It was still flyable at the end of conflict. (See Appendix 3)

Only one Liberty Plane, number 13, remained of the original twenty-four assigned to the 20th Squadron. Who says thirteen is an unlucky number?

An accurate count of aircraft lost due to combat operations, weather, or ground and training accidents is not available. It is known with considerable certainty that the 1st Day Bombardment Group combat losses totaled 39 aircraft — 22 Breguets and 17 Liberty Planes.

#### **ENEMY AIRCRAFT SHOT DOWN**

Credits for the number of enemy aircraft shot down by the Group has been compiled from a list of "Enemy Aircraft Destroyed by the U.S. Air Service".<sup>5</sup> By Squadron the numbers are as follows:

11th	36
20th	38
96th	64
166th	34
Total	172

However, these figures are misleading. The Air Service method of crediting victories was to give each person who participated in the combat one victory. Thus, if three gunners were involved in the destruction of one enemy airplane, each gunner was credited with one victory, if properly confirmed. But the enemy loss would be but one airplane. An analysis of 20th Squadron mission summaries shows a total of twelve enemy aircraft shot down during its combat tour between September 14 and November 5, 1918. The "Victory Credits of the 20th Aero Squadron" lists thirty-eight names, supposedly credited with these twelve victories. The number 172 comes from the individual victory credits for personnel of the 1st Day Bombardment Group.

Close inspection of available records and post-trip reports indicates that the actual number of enemy aircraft shot down by the Group was between 40 and 50. One source lists fortythree enemy planes shot down<sup>6</sup>. Another source lists the following number of enemy planes confirmed:

11th	13
20th	11
96th	16
166th	_7
Total Confirmed	477

#### BOMB AIMING/BOMBING

The Michelin improved bomb sight was used by the lead observer for aiming at the target. The lead observer fired a three-star green flare to signal all other aircraft in the formation that bombs were about to be dropped. All aircraft closed up their formation on the lead aircraft. The lead observer dropped his bomb release lever at the right instant, and the other aircraft released their bombs immediately afterwards. <sup>8</sup>

#### CAMPAIGNS

On November 11, 1918, the 1st Day Bombardment Group campaigns were listed as follows:

Lorraine	June 12 - September 11, 1918
St. Mihiel	September 12 - Sept. 23, 1918
Meuse Argonne	September 16 - Nov. 11, 1918
(See Appendix 4	)

#### GOING HOME!

The cleaning-up process began almost immediately after the signing of the Armistice. Truck load after truck load of aeroplane parts and accessories were returned to the main supply depot at Colombey-les-Belles. This took several weeks. Very little flying was done after November 18, and by December 15, the Group's planes were being flown to the 1st Air Depot at Colombey les Belles. During this time the 166th Squadron was detached for occupation duty at Trier, Germany.

Between December 5 and 20, all of the remaining Group aircraft were flown to the Air Depot. The last plane left the ground at 3:57 P.M. on December 20, 1918, just thirty-nine days after the Armistice was signed. While the aircraft were being returned to the Air Depot, the Group was deactivated on December 12.

Most of the flying officers left with the departing planes. Ironically, they had been the last personnel to join the Group and were the first to leave. From December 20 to homeward-bound embarkation it was a matter of sit and wait! It was a tiresome wait. Christmas came and with it the first snowfall of the year. It was about the gloomiest Christmas any of the troops had spent. Just a year before some had been at sea and that was gloomy too, but the Christmas of 1918 was the most depressing of all.

One day an officer from GHQ visited the field at Maulan and inquired as to what squadrons were left. Upon being told that the 11th, 20th, and 96th were still there, he was surprised and said they had been crossed off his list as having sailed for home. He was very quickly informed that he had better get all three Squadrons back on his list as none of them wanted to spend the rest of their life at Maulan.

On January 7, 1919, the Squadrons received orders to proceed to Colombey-les-Belles to turn in all surplus supplies. The 96th left first, followed by the 11th and 20th on January 13. On January 26, the Squadrons were moved to Seblanc — a small village near the embarkation camp at Bordeaux, France. The trip was made via commandeered German box cars. They arrived at Seblanc after five grueling days of rail travel. The quarters there were miserable, and after a few days, all were moved to St. Denise de Piles. Here the quarters were much better, and here they marked time until April 21, 1919!

During the long wait at St. Denise de Piles, the men amused themselves with baseball, football, and boxing. The 20th Squadron baseball team was a whirlwind, winning nearly every game. Sgt. Graveline, mentioned earlier as a aerial gunner of repute, proved himself to be as good on the baseball diamond as he was handling his twin Lewis guns in the air. Several men from the Group were pretty good boxers. They entered several tournaments but managed to get only to the semi-finals.

On April 21, the 11th,20th, and 96th Squadrons boarded the USS Henry R. Mallory, nicknamed the "Hell Rolling Mallory," for their return to the United States. After ten days of intermittent calm and rough seas, the Squadrons arrived in New York City on May 1, 1919.

The 166th Squadron's post-war record differs because of its occupation duty in the vicinity of Trier, Germany. Little is known about this duty except that the Squadron did fly observation missions in and around Trier. Sadly, the 166th suffered more casualties during occupation duty than in hostile action. In a formation flight down the Rhine River on April 2, 1919, four of seven airplanes crashed, three of them in a mid-air collision. The fourth went out of control going to the aid of the others. Five airmen were killed in this accident. The 166th was relieved of occupation

#### "WHEN A FELLER NEEDS A FRIEND"

There's a chap draws funny pictures, "When a feller needs a friend." And you wonder if that line of his Is ever going to end.

But there's one thing that's not drawn yet That would make the bravest quail-When you straggle from your buddies And a Hun gets on your tail.

You'll be flying so nicely With the others of your flight And the air is all so peaceful And there's not a thing in sight. When your engine starts to missing And your bus begins to trail And you chance to look behind you – There's a Fokker on your tail

You pull your throttle open, And your bus begins to climb. But he does the same behind you, For you didn't start in time. When you hear machine guns rattle And you turn a little pale, And you steal a glance behind you — But he still sits on your tail.

When you do a little side slip, Or you nose her down a bit, Zoom her up and kick the rudder, Hoping that you won't be hit. Climb and turn and get behind him, Pray to God, your guns won't fail, Get all set and look around you — Here's two more Huns on your tail. Where's the rest of your formation? Need a friend? I'll say you do. Ugly brutes with big white crosses, Pumping bullets straight at you. You can hear those pellets whistle, See the tracers' smoky trail. Hear the rat-rat-rat behind you, Of the devil on your tail

How you work that stick and rudder All the air seems full of Huns. Kick her 'round and let him have it, Squeezing both those Marlin guns. Talk about your reckless flying, But it's all of no avail. Every time you shake one beggar, There' another on your tail.

God knows how you ever did it, Perhaps you got a Hun or two, But your Little Guardian Angel Flew that bus around for you, Sitting on your under-carriage, As you homeward start to sail. Breathing free but one eye open, Looking forward at your tail.

You don't mind a bunch of Archies Shooting at you from the ground You'd take on a dozen Dutchmen If you had a Pal around. But a chap feels might lonesome And he turns a little pale When he straggles from his buddies, And a Hun gets on his tail.

-Anonymous

duty in April and returned to the United States in late May 1919.

All four Squadrons were deactivated in April and May 1919 on their return to the United States.

#### POSTSCRIPT

At the beginning of the United States' entry into World War I, the combat capability of the U.S. Air Service was practically nil. There certainly existed no capability nor expertise in bombardment aviation. It was only through Herculean efforts on the part of those officers assigned to the Air Service that the United States was able to put up a credible effort in the air.

As the war developed in late 1917 and 1918, it became more and more apparent to the Allies that bombing by an independent strike force to disrupt the enemy's lines of communications and supply, harass his troop concentrations, and break his morale, was essential to victory. The British and French fielded independent bombing units whose operations against the enemy had telling effect. The United States entry into aerial combat, first with the arrival in June 1918 of the 96th Aero Squadron and followed in September by the 1st Day Bombardment Group, added strength and depth to the Allied air bombing effort. The operations of the 1st Day Bombardment Group in the Lorraine, St. Mihiel and Meuse Argonne offensives certainly contributed to victory, and for the U.S. Air Service, provided a body of bombardment aviators second to none in skill and fearlessness in combat.

#### LETTERS OF APPRECIATION

Extract from letter addressed to the Chief of Air Service, First Army, by the Chief of Staff, First Army, dated November 8, 1918:

"The Army Commander desires to express his full appreciation to you and the officers and men of the Army Air Service Units and Corps Air Service units of the army for the efficient service rendered during our recent operations. The fine and brilliant achievements of the Air Service during these operations have added materially to the success of the 1st Army in addition to reflecting great credit on all of the personnel of your command. The Army Commander fully appreciates the exacting duties that the personnel of the Air Service have been called upon to perform and feels that the results achieved have been prompted not only by a sense of duty but by a spirit of efficiency and cooperation with the other arms of the Army."

Extract from General Orders, No. 18, Farewell from Commander and notice of disbandment, dated December 12, 1918:

Appreciation By Lt. Col. B. M. Atkinson, Wing Commander, First Pursuit Wing, Air Service, A.E.F.

"To remind you all of your great deeds would be superfluous. Organized late in August, you found yourself confronted in less than a month with the most formidable elements of enemy air service. You came to the battle untrimmed, but filled with the spirit of sacrifice; your dash, skill, and teamwork achieved a proud record, you set a new standard for all countries which have fought in this war for aviation. Foul weather could stop you no more than the enemy; day after day, of wind, rain and mist, saw you flying and fighting at all altitudes, cooperating with the infantry in their muddy struggle on the ground or meeting the enemy more than five kilometers in the air. Bombers and fighters both played their part in achieving mastery over the enemy air service. You are officially credited with having destroyed 286 enemy air service, you have dropped 150,000\* kg of bombs in his lines. Now the war is ended. The armistice, forever humiliation of the enemy, is signed. You have played no small part in helping to win the victory. In the days that passed between the end of August and the signing of the armistice many of your comrades have been lost. Their memory will be treasured forever, for each of them you can feel, 'None died that day with greater glory, though many fell and there was much glory.' The task set before our country nearly two years ago is completed. Its successful conclusion is due to the qualities of the team work and selfsacrifice which no where were more highly exemplified than in this command." (\*Group records show 101,219 kg dropped, indicating the some 49,000 remaining were dropped by other tham bombers.)

The struggle against formidable odds to create a bombardment capability during World War I had succeeded. But shortly after the Armistice, those units, so difficult in the making and so valiant in service, were deactivated. By May 1919 no bombardment units remained on the U.S. Air Service rolls. The struggle to gain understanding and acceptance of bombardment aviation as an indispensable part of the nation's armed forces had just begun.

Endnotes:

Ibid p.20

<sup>2</sup> 11.7 tons equates to 44x500 lb GP bombs. The usual WW II B-17F/G bomb load was 12X500 Lb bombs. The First Day Bombardment Group dropped the equivalent of 37.25 B-17F/G bomb loads.

<sup>3</sup> Ibid, Barth: Hist 20th Aero Sq, p.6

<sup>4</sup> Frame # 0099 Micro film reel AO573-HQ Albert F. Simpson Research Center, Reference Division, Maxwell AFB, AL., 36112

<sup>5</sup> Ibid, pp76-82

<sup>6</sup> Sloan, James J. Jr.: Wings of Honor-American Airmen in World War I. 1994.Schiffer Publishing Ltd. 77 Lower Valley Rd., Atglen, PA., 19310. pp 181-182; 246-247; 247-249

<sup>7</sup> Ibid, Thayer: Americas First Eagles p. 315

<sup>8</sup> Ibid, Barth: pp 83-97 and table following Table of Contents an unnumbered page subsequent to pg 100.
<sup>9</sup> Ibid, Maxwell AFB: Micro Film Frame 152, reel AO573

<sup>10</sup> W.E. "Joe" Simons: "2nd Bombardment Group The Early Years", USAF Museum, The Friends Bulletin, Vol 12, No 2, Summer 1989 p.4

<sup>11</sup> Ibid, Maxwell AFB: Micro film frame #099 Reel A0573

<sup>12</sup> Ibid Sloan p. 359 <sup>13</sup> Ibid, Barth: pp52-54.

#### CHAPTER V

#### THE INTERIM YEARS 1919 - 1937

#### INTRODUCTION

In his book "Aviation in the US Army: 1919-1939", Maurer Maurer says: "The birth of American air power occurred in the two decades between the two World Wars when airmen of the U. S. Army and Navy forged the aircraft, the organization, the cadre of leadership and doctrines that formed a foundation for the country to win the Air War in World War II."<sup>1</sup> The 2nd Bombardment Group was instrumental in forging U.S. Army air bombardment doctrine, organization, and leadership.

The period immediately following the end of WW I through 1926 was a particularly tough time for the embryonic Air Service and especially for bombardment aviation. There were never enough officers to man assigned aircraft nor enough enlisted men to service them. Air Service purchases of new aircraft — pursuit, observation, attack, and bombardment — were minimal and funds to operate the Air Service were meager. Although legitimized by the National Defense Act of 1920, the Air Service was little more than a shell. Seeing no major power as an immediate threat, the Congress adopted a policy in 1920 to keep the active military services at minimum strength, a policy that suited most Americans.<sup>2</sup>

The Air Service aviation pioneers were handicapped in the 1920's and 1930's by the meagerness of annual Congressional appropriations and the reluctance of the Army staff to create a bomber force that would fly out of sight of ground troops. With what support there was available, the bombardment aviation pioneers remained dedicated to developing planes that would fly higher, faster, and further.<sup>3</sup>

#### U.S. MILITARY AVIATION POLICY 1919-1939

To place in perspective what happened to bombardment aviation and the 2nd Bombardment Group during the years 1919-1937, it is helpful to review national defense policy and Congressional appropriations for national defense between 1919 and 1939.

The United States entered and fought World War I under the provisions of the National Defense Act of 1916. Although aviation proved to be a valuable auxiliary to ground forces in World War I, the role it would play in the post-war era was unclear. After the Armistice, the U.S. Army General Staff attempted to apply some rationale to two divergent shools of thought about employment of air power. The French and German philosophy during WW I was to have aircraft for reconnaissance and artillery support. The British contended that air power was an independent arm whose responsibility it was to seek out and destroy the enemy. The make-up of the air forces at the front in August 1918 is listed in table below.

Even though the Army General Staff had no previous knowledge of aerial doctrine, it came to the conclusion that the French and Germans were right. The Air Service took umbrage with this conclusion stating that the composition of air units was not indicative of air doctrine, but the result of aircraft available. The Air Service proposed a composition of 30% pursuit, 50% observation, and 20% bombardment. The proposal implied greater unilateral operation of the air forces, and less subordination to Army field units. The Army General Staff was almost unanimous in its opinion that aviation should be kept as part of the forces under its control.<sup>4</sup>

Between the signing of the Armistice in November 1918 and the passage of the National Defense Act of 1920, the War Department au-

Country	Pursuit	Observation	Bombardment
Britain	55%	23%	22%
United States	46.5%	46.5%	7%
Italy	46%	45%	9%
Germany	42%	50%	8%
France	34%	51%	15%

thorized an interim organization for the Army's air arm. This organization consisted of 2 wings, 7 groups and 27 squadrons. Of this number, there was to be one bombardment group with four subordinate squadrons. Most of the units were formed by August of 1919.

Congress set peacetime military policy by a 1920 amendment to the National Security Act of 1916 (the 1920 Act). The 1920 Act authorized the Air Service as a separate arm and prescribed its peacetime organization.<sup>5</sup> The Act established the Chief of the Air Service at major general rank, and authorized one brigadier general, 1,514 officers below the rank of general, and 16,000 enlisted personnel.<sup>6</sup> Additionally, it authorized a 50% base pay increase for personnel ordered and required to make frequent aerial flights.

A General Reorganization Board that prepared plans for carrying out the 1920 Act based its aviation recommendations on the principle: "All aviation in the U.S. Army should be employed for participation in the battle and all strategic bombardment and reconnaissance should be done by aviation in General Headquarters (GHQ) reserve." The War Department adopted a plan giving divisions, corps, and armies their own observation aviation, assigning attack and pursuit units to armies and setting up a GHQ reserve composed of all bombardment units, airships (lighter than air), and some observation units for strategic reconnaissance.<sup>7</sup>

The meagerness of Congressional military appropriations from 1921 through 1926, forced reductions in the number of Air Service wings, groups and squadrons. The Air Service never reached the strength authorized by law. National defense appropriations stabilized at around \$300 million per annum until after the Air Corps Act of 1926.

In the spring of 1923, Army aviation consisted of one wing, three combat groups (pursuit, attack and bombardment) of four squadrons each, and one group headquarters and eleven observation squadrons.<sup>8</sup> Each overseas department, in Hawaii, the Philippines and Panama, had one composite group of three squadrons observation, pursuit and bombardment.

From 1919 through 1926, the U.S. aviation plan never called for more than one bombardment group of four squadrons. From 1919 to 1935 the bombardment group was always subordinate to the Army aviation GHQ reserve.<sup>9</sup>

The argument for a separate air arm was carried on from 1920 through 1926 within the War Department, the Army General Staff and certain Congressional committees. In 1919 and 1920 several bills were introduced in Congress which would have created a separate air arm. The proposals mixed military aviation with civilian aviation, and detached aviation from the Army and Navy. These arguments emphasized the difficulty of working out national policy for peacetime and how Congress would deal with the controversial problem of how to organize military aviation.<sup>10</sup>

In 1919 the Pershing Board concluded that Army aviation should be an auxiliary service under the control of ground force commanders. In October 1919, The Baker Board (Secretary of War Baker) concluded that the Army and Navy should each have its own aviation, and no military air force should be created independent of Army or Navy control.<sup>11</sup>

Congressional Representative Fiorella LaGuardia of New York, a former AEF pilot, publicly favored a separate air arm. The Chief of the Air Service, Maj. Gen. Menoher; his executive, Col. Westover; Secretary Baker; Gen. Pershing; and Army Chief of Staff, Peyton March; all opposed a separate air arm. Nevertheless, some members of the Air Service spoke in behalf of an independent air force. Among them were Brig. Gen. William "Billy" Mitchell,



Maj. Henry "Hap" Arnold, Col. Charles de F. Chandler, and Lt. Col. Benjamin D. Foulois.<sup>12</sup>

Regardless of these arguments and some support in both the Senate and the House of Representatives, the Air Service remained as intended under the 1920 Act — part of and subordinate to the U.S. Army.

The argument for a separate air arm did not go away. The thrust gradually devolved into one for greater autonomy and more centralized command of the air arm, and greater economy of combat aircraft utilization. Gen. Menoher's successor, Maj. Gen. Mason Patrick continued to pressure the system. Gen. Patrick used the war plan to attack the imbalance between the Air Service committed to the divisions, corps and armies, and that committed to GHQ reserve. He wanted more men and planes available for mobilization, and more pursuit and bombardment and fewer observation aircraft. He proposed to take observation from the divisions and concentrate it in the corps. He proposed to give pursuit, attack and bombardment aviation to Army GHQ under an air force commander for use as the military situation required.13 (See chart below.)

In March 1923, Secretary of War Weeks created the Lassiter Board<sup>14</sup> to study General Patrick's plan. The plan did not fare too well. In essence, the Lassiter Board recommended: "Observation Air Service to be an integral part of division, corps and armies; an air force of attack and pursuit aviation an integral part of each Field Army; an air force of bombardment, pursuit and airships directly under GHQ." The War Department put these principles into Army Regulations.<sup>15</sup>

The issue was not dead, however. A Congressional committee headed by Florian Lampert of Wisconsin took up the Lassiter Board report while investigating military aviation in 1924-1925. The upshot was that the Lampert Committee urged a five-year aviation program with both War and Navy Departments to get at least \$10 million a year for new flying equipment. This was followed by the Morrow Board, appointed by President Coolidge, to study use of aircraft in national defense. The Morrow Board rejected the airmen's repeated assertion that air power could be decisive in an armed conflict. However, the Morrow Board did make several positive recommendations. The Board considered the personnel situation in the Air Service as inadequate. It recommended that general officer authorizations be increased by two brigadier generals, one to head procurement and one to command the flying schools in San Antonio, Texas. The Board also recommended appropriations to train more cadets and reserve officers. The Board deemed the designation "Air Service" confusing and not representative of roles given to military aviation. The distinction between service rendered by air troops in their auxiliary role and that of an air force acting alone on a separate mission is important, the Board said. It suggested the name be changed to "Air Corps."16

In 1925, the War Department drafted a bill that contained the recommendations of the Lassiter and Morrow Boards. The House Military Affairs Committee voted down the War Department draft bill and came up with its own Air Corps bill. The Senate, not satisfied with



Brigadier General William "Billy" Mitchell. (Courtesy of Eighth Air Force Museum)

the House bill, made enough changes to force the bill into House-Senate conference. An amended Air Corps bill became law on July 2, 1926.<sup>17</sup> It was the intent of the bill's proponents to obtain an adequate peacetime air force. The law authorized a five-year Air Corps expansion program for the fiscal year period July 1, 1926 to June 30, 1931. As part of the Act, the Army Air Service was redesignated as the Army Air Corps, and significantly, the new Air Corps was given the mission of coastal defense. This new mission was later used in the argument for strategic bombers. A significant disappointment was that the new Air Corps remained subordinate to the Department of the Army.

Germane to passage of the Air Corps bill were the pronouncements and campaigning by Gen. Mitchell to gain acceptance of his ideas on air power. Mitchell became impatient working through channels and within the "system." His boss, Chief of the Air Service, Maj. Gen. Patrick, endeavored to convince Mitchell that working through channels was the only way to achieve greater autonomy, better equipment, and a more effective aviation organization. Mitchell did not heed Gen. Patrick's advice. He continued to press for complete approval of his program on an immediate basis.18 Mitchell took his case to the people and the press. In this process he gained many supporters, but made some powerful enemies. His speeches, writings, and testimony before Congress antagonized President Coolidge, Secretary of War Weeks, the Army General Staff and top Navy officers. It seemed as if Mitchell was bent on self-destruction.

#### COURT MARTIAL OF "BILLY" MITCHELL

In April 1925, Mitchell's four-year term as Assistant Chief of the Air Service ended. He was not recommended for reappointment, and thereby reverted to his permanent rank of colonel. He was reassigned as Air Officer, Eighth Corps area, Ft. Sam Houston, Texas. This was about as far from Washington, D.C. as one could get in 1925 — far enough, at least, to be out of the limelight of Washington political circles and the national press spotlight.

Mitchell did not dampen his ardor. He chose to elevate his attacks when a Navy PN-9 disappeared on a flight from San Francisco to Hawaii. On September 5, 1925, Mitchell charged that accidents, like the disappearance of the PN-9, were the direct result of incompetence, criminal negligence, and almost treasonable administration of national defense by the Navy and War Departments. These charges prompted the President to appoint the heretofore mentioned Morrow Board. Mitchell's charges also resulted in the President's ordering a court martial of Colonel William Mitchell. The court martial convened on October 28, 1925. By pleading not guilty, Mitchell was able to get the court to go into the whole business of air power and the management of national defense. As a result of this extensive agenda, the court martial lasted seven weeks.

In the end, Mitchell was found guilty of all charges which, in essence, were that he had made statements that were insubordinate, contemptuous, disrespectful of, and prejudicial to good order and military discipline. Mitchell was sentenced to suspension and forfeiture of pay for five years. The President approved the sentence on January 26, 1926, but modified the terms. He granted Mitchell full subsistence and half pay. Mitchell offered his resignation to be effective February 1, 1926. The War Department, without hesitation, accepted his resignation effective immediately.

In retrospect, Billy Mitchell's vision of how an air force should be organized and operate influenced and paralleled the thinking of many airmen at the time. Their conversations were permeated with air doctrine and tactics. The Air Service Tactical School, first formed in 1920 at Langley Field, gradually developed a curriculum that reflected much of Billy Mitchell's thinking. Aviation pioneers like Benjamin Foulois, H. "Hap" Arnold, Harold George, Bert Dargue, Jimmy Doolittle, Ira Eaker and Curtis LeMay continued to work tirelessly within the system to give life to many of Mitchell's theories and ideas.

The Air Service and Air Corps were not alone in benefitting from Mitchell's zeal and foresight about the organization and employment of air power. His untiring efforts to bring about and assure the success of the bombing trials against ships unwittingly gave a huge boost to naval aviation.<sup>19</sup>

#### COMMAND AND CONTROL

From 1919 through 1935, there was no single officer in command of Army aviation forces. The Chief of the Air Service, and later, the Chief of the Air Corps, had no direct command of combat aviation forces. The Chief of the Air Service commanded training fields, schools, supply and air repair depots, and experimental facilities. He did not command tactical aviation except when the War Department placed air units under his control for exercises, maneuvers, or other special projects. The Chief of the Air Corps operated under the same restrictions.<sup>20</sup> As the senior air officers, both reported to the Army Chief Staff. The principal subdivisions of the Chief of the Air

Service staff were an Executive, an Assistant Chief of Training and Operations, a Supply Group, an Information Group, and an Administrative Group. The 1920 Act authorized one major general as Chief, and one brigadier general as Assistant Chief of Training and Operations. The other department heads were authorized at the colonel or lieutenant colonel level.

Under the provisions of the 1920 Act, the War Department placed the bulk of army aviation under the command and control of the Army field commanders. The Lassiter Board of 1923 influenced the War Department in its decisions regarding aviation subordination. In 1923 the Army regulations specified that observation air service would be an integral part of divisions, corps and armies with a reserve under General Headquarters (GHQ). Further, an air force of attack and pursuit aviation was to be an integral part of each field army, with a reserve under GHQ. Finally, there was to be a reserve air force of bombardment and pursuit aviation, and airships under GHQ to be used for special and strategic missions. It was proposed that the GHQ reserve force be organized in large units to insure greater mobility and independence of action.21 During the period 1920-1927, bombardment aviation was limited to one group - the 1st Day Bombardment Group, (and its successor, the 2nd Bombardment Group), and its four squadrons.

Between 1920 and 1926, the Chief of the Air Service had some responsibility for air training and an Assistant Chief for Training and Operations to help discharge this responsibility. The Air Chief was hampered in carrying out training programs by his lack of command authority. Most of the tactical air units were assigned to Army ground force units, and thus outside the Air Chief's chain of command. The Chief sought to compensate for his lack of command authority by issuing training programs through the War Department Adjutant General. The commanders of Army field divisions, corps and armies, still had the last say about how their air units would be trained.<sup>22</sup>

The Air Corps Act of 1926, in addition to authorizing the five-year expansion, and increasing the general officer authorization by two, authorized temporary promotions of Air Corps officers, permitted the use of reserve officers on extended active duty, and gave extra pay to enlisted men qualified as air mechanics.23 The Act also created an Assistant Secretary of War to deal with aviation matters. This change gave impetus to improving the consideration of air matters in the Army General Staff. The Air Service and Air Corps views had not always been represented in the deliberations and actions of the General Staff. As a consequence of the Air Corps act of 1926, an Air Section, headed by an Air Corps officer, was created in G-3 Operations, G-4 Supply, G-1 Personnel, and G-2 Intelligence of the Army General Staff.24 Although undocumented, it is reasonable to expect that the new Assistant Secretary and the Air Section offices exerted influence over the training and use of air units in the Army field commands.

#### MANPOWER, BUDGETS, AND AIRCRAFT

The Air Corps began its existence in 1926 with 915 officers, 8,725 enlisted men, and 1,254





airplanes. The expansion program authorized a buildup to 1650 officers, 15,000 enlisted men and 1,800 airplanes over five years. The total number of tactical squadrons was authorized to increase from 32 to 52 - pursuit from 8 to 21, bombardment from 8 to 1225, and attack from 2 to 4, while observation squadrons remained at 14. It was envisioned that the GHQ Air Force would have two bombardment wings, each with a pursuit group for employment by GHQ. The wings, one for the east coast and one for the west coast, would each have a bombardment and pursuit group of three squadrons each.26 By 1929, air Corps planners changed the bombardment alocation to two bombardment groups for each wing.

The Air Corps expected the expansion to start at once, but adequate supporting appropriations were not forthcoming. The Air Service appropriation of \$15.3 million for Fiscal Year 1927 was approved before the Air Corps Act was passed. Congress authorized submission of a request for supplemental appropriations, but economyminded President Coolidge directed that the program be deferred until fiscal year 1928. The President did say he would accept a War Department request for a minimal supplemental appropriation for fiscal year 1927 to let the Air Corps prepare for its first increment of expansion. However, the Bureau of the Budget denied more money for 1927, and the Air Corps initial expansion plans had to be severely curtailed.

The authorization for Air Corps expansion came at a time when competition for the national defense dollar was acute. Since the end of World War I, the Army had depended heavily on surplus equipment and supplies from that war. By the mid 1920's the old equipment was wearing out and stocks were being depleted. The need for replenishment and for new and improved weapons helped push Army fund requirements above pre-war levels. The competition for scarce funds between the Air Corps and rest of the Army was intense.

President Coolidge saw no urgent need for military preparedness in a time when isolationism and pacifism ran strong among the American people. Coolidge initially refused to spend funds authorized for the expansion. He is alleged to have said, "Who's gonna fight us?" He is also known to have said that the Air Service needed only one plane, and that the pilots could take turns flying it! He did not oppose the Air Corps expansion so much as spending the money to finance it. 27 President Hoover, who followed in 1929, also sought ways to shave expenses. The stock market crash of 1929 and the ensuing Great Depression, served to intensify the Hoover administration efforts to reduce costs, and took their toll on the Air Corps.28

From 1929 onwards, it became even harder to keep the Army going, much less pay for an expanding Air Corps.

Over the five fiscal years 1928-1933, the Air Corps requested a total of \$260.9 million. Congress approved \$147.4 million – only 56% of the amount requested.

With increasing fund shortages, the Air Corps could not complete the expansion program. At the end, the Air Corps remained short of officers, enlisted men, airplanes, and tactical units.<sup>29</sup> The Air Corps closed the five-year period with 1,254 officers, only 76% of the 1,650 authorized. The enlisted strength was 13, 060, more than 1,900 short of the 15,000 authorization, or 87% of the objective. This left the Air Corps short of air crews and ground personnel to fly and service the aircraft.

The Air Corps expansion in military strength was to be accomplished by an overall increase in Army strength. Unfortunately, in the case of enlisted men particularly, most of the added Air Corps personnel came from authorizations for other branches of the Army. Branches like infantry, cavalry, artillery, and signal corps, all lost some of their authorized strength to the Air Corps; a consequence that undoubtedly caused enmity toward the Air Corps.

The Air Corps Act authorized a buildup to 1800 serviceable airplanes by the end of the fiveyear program. To maintain 1800 serviceable aircraft, Congress permitted procurement of 400 aircraft a year to replace obsolete and unserviceable craft.<sup>30</sup> Over the five-year period, Congress appropriated money for more than 2,000 new tactical and training aircraft and related equipment, parts, and accessories.

Within this new aircraft procurement were funds for a new bomber to replace the NBS-1, which was first purchased in 1920 as a heavy bomber to replace the Liberty Plane. The Air Corps procured two bombers in response to this authorization. Curtiss Aircraft Corporation developed the B-2 Condor from the original design of the NBS-1. The experimental model was designated as the XNBS-5. The Air Corps purchased a total of twelve Condors in 1928 and 1929, however, most of the bombers for the five-year program were purchased from Keystone Aircraft. The Air Corps ordered nearly 200 planes from Keystone from 1927 to 1932. The Keystone bombers came in several models and series. The earlier ones were designated light bombers - LB-5, LB-5A, LB-6, LB-7, and LB-10A. Later, the distinction between light and heavy bombers was eliminated and some LB-10A's were redesignated as B-3A's, and the remainder of the LB-10As with different engines, were reclassified as B-5A's. Later Keystones included B-4A's and B-6A's. All models and series had relatively the same airframe but mounted different horse power engines and had either twin or single tail structures. (See Appendices 8, 8A, 8B). It was not uncommon for units equipped with the Keystone bomber to have a mix of three or four models. All Keystones, regardless of model or series, were slow and short-ranged. They were armed with three .30 calibre machine guns and could carry 2,500 pounds of bombs. Their top speed was 121 mph, cruising speed 102 mph, altitude ceiling around 14,000 feet, and they had a flying distance of about 850 miles. Despite the claim of 121 mph top speed and cruising speed of 102, pilots from that era say the Keystone flew at 98 mph, climbing, diving, and landing. If an engine failed, the pilot could stretch the glide a little bit, but the airplane was going only one place and that was down.31 The 2nd Bombardment Group flew several versions of the Keystone as replacements for the NBS-1.32 In 1932, the Air Corps ordered seven Y1B-7's from Douglas Aircraft and seven XB-9 and XB-9A's from Boeing Aircraft. These were the first all-metal, low-winged monoplane bombers in the Air Corps. The top speed of both these aircraft was 188 mph and cruising speed was 165 mph. Both bombers had open cockpits and retractable landing gear, twin engines, and were armed with two .30 calibre machine guns. The Boeing XB-9 and XB-9A, as well as the Douglas Y1B-7, had service ceilings of about 20,500 feet. The Boeing lifted a heavier bomb load, 2260 pounds, and could fly 540 miles. The Douglas was less capable in bomb load at 1200 pounds and had a shorter flying distance of 410 miles. The 2nd Bombardment Group had five XB9 and XB-9As assigned.

By the end of the five-year stretched out expansion period in 1932, the Air Corps was much better off than it had been in 1926, but was short of what the airmen wanted and hoped to attain.

Because of funding shortage over the five years, the program was extended, but it tacitly, ended in mid-1933. By that time the nation was in the throes of the Great Depression. The Air Corps asked for \$34 million for fiscal year 1933 to complete the expansion program. The amount requested included \$16.9 million for 428 new airplanes. Facing the political and fiscal consequences of a collapsing economy, President Hoover asked the Bureau of the Budget to curtail aircraft procurement. The Bureau eventually approved \$25.4 million for the Air Corps. The Congress accepted the recommendation with a proviso that no less than \$5.9 million be spent for aircraft purchases.<sup>33</sup>

President Roosevelt, elected under the "New Deal" platform, had promised in his campaign for the presidency to cut government spending by 25%. Three weeks after the inauguration, the new Chief of the Bureau of the Budget set a ceiling of \$196 million for all military appropriations. General MacArthur protested this drastic cut, and the Bureau Chief increased the authorization to \$244 million. Under these monetary restrictions the Air Corps was able to procure only 26 of 100 B-10B's it had hoped to order.

As a boost to the economy, the new Roosevelt administration released to the War Department \$100 million from the Public Works Administration (PWA) between 1934 and 1936. These funds was earmarked for construction and other projects and procurement to provide work for the unemployed. A portion of the money was authorized for the purchase of motor vehicles, ammunition and aircraft. From this authorization the Air Corps acquired seventy-seven B-10B's, thirty A-17s, and other aircraft.

The depression affected everything and everyone, including the military. It deprived enlisted men of re-enlistment bonuses. Pilots, who normally flew 200 hours per year, were reduced to 160 to 170 hours. Bombardment units, lacking bombs, removed bomb racks from their planes and stored them until they could resume bombing practice.<sup>34</sup>Air Corps cadets were no longer immediately commissioned. They received their wings, served another year with tactical units as flying Cadets, then received reserve commissions and went on active duty for one year. Even the Air Corps Newsletter suffered. It suspended publication in October 1933, not to resume until January 1935. Funding shortages kept personnel strengths below authorizations. Enlisted men were often used in place of officers in air crew positions, including use as pilots.

Government economy measures during the depression took many forms. The principal costsaving measures that affected the military in 1932 and part of 1933 was furloughing all personnel for one month, without pay, whose annual pay was \$1,000 or greater. This particularly effected the officer corps. Later, the Roosevelt administration reversed the furlough policy in favor of an across-the-board 15% pay cut. Congress balked at so harsh a measure by reducing the maximum pay cut to 10% for February to June 1934 and to 5% for the next fiscal year, July 1934 through June 1935. Beginning July 1935, no further pay cuts were made and pay scales went back to their original level of January 1934.

Officers lost more pay from the cuts than they did under the furlough program. Enlisted men, exempted from the furlough policy because of annual pay less than \$1,000, were not exempt from the percentage pay cuts. Under the Congressional 10% pay cut a private's pay of \$21 per month was reduced to \$18.90 per month.<sup>35</sup>

In addition to aircraft procurement, the PWA and WPA programs helped the military, and especially the Air Corps in other ways. PWA funds funneled through the War Department helped build Hamilton Field, California, improve Felts Field, Spokane, Washington, pave runways at Selfridge Field, Michigan, repair the operations office at Scott Field, Illinois, pave parking aprons at Mitchel Field, New York, build quarters at many of the air bases, including Patterson, Rockwell, and Langley Fields, and improve taxiways and parking ramps at Langley.<sup>36</sup>

The Public Works funds relieved pressure on meager Air Corps appropriations for operations and maintenance, and subsequently enabled the purchase of more advanced aircraft, and materiel.

The Air Corps funding improved slowly after 1935 and by the end of the 1930's improved substantially. The factors contributing to this improvement were the national progress toward economic recovery, failure of arms limitations negotiations, wars in Ethiopia, Spain and China, the rise of Hitler in Europe, the increasing Japanese bellicosity in the Pacific, and the clear need for modernizing and strengthening America's defense. Air Corps expenditures rose from \$20.3 million in 1935 to \$32 million in fiscal year 1936, to \$41.1 million in 1937, to \$50.9 million in 1938 and to \$83.1 million in 1939. With more funds available between 1935 and 1939, the Air Corps was able to get additional pilots and mechanics, add new and better airplanes, and embark on training programs of greater depth and diversity than it had been able to do prior to 1935.37

From 1927 to 1939, the Air Corps recruitment of enlisted men was on a steady, although inadequate, rise. In 1939 the enlisted force stood at 20,238. This number represented a sizeable increase over the 1926 enlisted strength of 8,725 and over the 13,060 men at the end of the fiveyear expansion program in June 1932. Beginning in 1926, Air Corps enlisted specialists were authorized extra pay. Enlisted men in grades of sergeant and below were authorized air mechanics ratings. There were six specialist levels within these air mechanics ratings. A private, rated specialist sixth class, drew \$3.00 more over his base pay of \$21. A mechanic specialist first class received pay equivalent to technical sergeants, at \$84 per month, and a specialist second class drew pay of staff sergeants at \$72 per month.<sup>38</sup>

Enlisted pilots qualified for the 50% of base pay for aviation hazardous duty pay. A private as a pilot received \$31.50 per month. If this person also had a mechanic's rating of second class, he could make about \$85 per month. A staff sergeant pilot received \$108 per month.

With the exception of gunners and mechanics, air crew positions were all intended to be filled by officers. During part of the 1930s, the shortage of flying officers forced the use of enlisted men in what had been traditionally officer positions in air crews. When radios were added to aircraft, officers were originally assigned as the radio officer. Because of consistent officer shortages, enlisted men were increasingly used as radio operators.

From 1935 through 1939, there was steady improvement in base quarters, (barracks and married enlisted quarters) at most air bases. By 1939 each permanent air base had a high number of married enlisted quarters.

Throughout much of this period, the Air Corps had to compete with the rest of the Army for officer and enlisted rank and grade authorizations to support promotion programs. The Air Corps negotiated with the rest of the Army for non-commissioned officer allocations. From 1926 through 1933, the Army branches, other than the Air Corps, lost enlisted and non-commissioned officer billets to the Air Corps. Much of the Air Corps personnel increase under the five-year expansion program came through losses by other branches of the Army — both officer and enlisted.

#### GHQ AIR FORCE

Despite marginal progress, the idea of greater autonomy continued to gnaw at Air Corps leaders. The idea of an air arm operating separately from the Army originated in World War I. The plan was to have tactical air units working directly with the AEF and a strategic unit to operate independently beyond the battle zone. Billy Mitchell, Benjamin Foulois, and other AEF airmen had worked on a plan to implement this approach to the air war. The war ended before the plan could be employed.

Some degree of independence came through the initial establishment of the GHQ by the 1920 amendment to the 1916 National Defense Act, but the GHQ air organization existed only as a mobilization reserve force. The Air Corps Act of 1926 took the GHQ one step further by authorizing operational air units, but on a provisional basis. This was progress, but tactical units were still tied to Army field units. Air Corps moves toward greater independence were tempered by knowledge of Billy Mitchell's fate. Many Air Corps leaders were contemporaries of Mitchell and they had witnessed his humiliation for injudicious pursuit of his objectives. Still, the idea of a more independent or separate air service never went away. Each time it came up, it was refused by some board or commission, by the Army General Staff, or by the Navy Department.

In the early 1930's a stream of events led to the creation of a GHQ Air Force.<sup>39</sup> The Air Corps tested the operation of GHQ Air Force by creating a provisional air force for maneuvers in May 1933. Maj. Gen. Hugh Drum, Deputy Chief of Staff, U.S. Army headed a committee reviewing the Air Corps war plans. The Drum Committee concluded that a GHQ Air Force should be created. On October 1, 1933 GHQ Air Force was formally established, but still on a provisional basis. Then in 1934 and unforeseen event ultimately led to a substantial enhancement in the state of the Air Corps and the establishment of a GHQ Air Force.

In February 1934, the Air Corps was tasked to fly the U.S. mail. The Air Corps was neither organized, equipped nor manned to fly the mail. The Air Corps had less than two weeks to organize for the task, had far too few trained and experienced all-weather pilots, and had aircraft ill equipped for the job. There were numerous crashes, several fatalities, and the Air Corps never succeeded in flying more than one third of the existing mail routes.<sup>40</sup> The air mail operation was not a complete disaster. It helped to highlight the need for more modern equipment, more active duty pilots, better weather forecasting, more all-weather training, and a better, more centralized, organization.

After March 1934, the Roosevelt administration began renewing contracts with the airlines to carry the mail. By June, the Air Corps was relieved of the task.

In the midst of the Air Corps air mail operation, Secretary of War Dern appointed a committee headed by Newton S. Baker to investigate the Air Corps air mail operations. Generally, the Baker Committee found that Air Corps equipment, although suitable for combat, was not readily adaptable to the air mail task. The Committee commended the spirit and elan of the Army pilots in undertaking so unfamiliar and difficult a task. Committee's comments and suggestions covered a wide range of subjects. It regarded 2,320 airplanes as the minimum necessary for peacetime.

Pilots should average 300 hours flying per year. There should be more training in night, instrument, cross-county, radio beam, and bad weather flying. The Air Corps should develop better instruments, communications, and armament, strengthen its meteorological operation, and give tactical units training under various conditions in different parts of the country. The Baker Committee also recommended action on a variety of personnel problems, the most important of which was temporary promotion of officers as authorized by the Air Corps Act of 1926.<sup>41</sup>

Concurrent with the Baker Committee study, President Roosevelt, at the direction of Congress, appointed a Federal Aviation Commission to study aviation in the United States. Clark Howell, editor of the Atlanta Constitution, was appointed as head of the Commission. The Howell Commission delved into all aspects of civilian and military aviation in the United States. The Commission regarded GHQ Air Force as an experiment and preferred not to comment until after adequate trials.<sup>42</sup> Beginning in the summer of 1934, the provisional GHQ Air Force undertook a series of war games and field maneuvers. The plan was to prove the tactical effectiveness of a GHQ Air Force. There were command post exercises, field deployments, war games, and field maneuvers during the next year. On December 27, 1934, the Adjutant General issued instructions for the establishment of a GHQ Air Force effective March 1, 1935. $^{43}$ 

On March 1, the term "provisional" was dropped from the GHQ Air Force title, and Brig. Gen. Frank M. Andrews assumed command. G-3 of the Army General Staff designated Langley Field as the location for the GHQ Air Force. Langley Field was close to Washington, DC, yet

US NATIONAL DEFENSE & MILITAI	RY AIR POLICY
BOARDS - COMMITTEES - COM	IMISSIONS
Pershing Board	1919
Baker Board	1919
General Reorganization Board	1920
Lassiter Board	1923
Lampert Congressional Committee	1924-1925
Morrow Board	1925
Court Martial - Col William Mitchell	1925
Drum Board	1933
Baker Board	1934
Federal Aviation Commission	1934

far enough away not to be embroiled in the political and media mayhem there.

Principal units of the GHQ Air Force were three wings. These wings were deployed on a regional basis; the 1st wing was located on the west coast, the 2d wing on the east coast, and the 3d wing in the central states. 2d Wing units were the 2nd Bombardment and 8th Pursuit Groups at Langley, the 9th Bombardment Group at Mitchel Field, and the 1st Pursuit Group at Selfridge Field, Michigan. The 21st Observation Squadron and one bombardment squadron from the 9th Bombardment Group were stationed at Bolling Field, Washington, DC.

The organization of GHQ Air Force did not solve the Air Corps subordination and command and control problem. The Chief of the Air Corps still did not have command of operational units. The Commanding General GHQ Air Force was subordinated to the General Staff. The Chief of the Air Corps had no tactical control over the GHQ Air Force. This subordination of GHQ Air Force to the General Staff lasted for almost four years. On March 1, 1939 after much wrangling, arguing, and posturing in the General Staff, the Office of the Chief of the Air Corps, and the GHQ Air Force, the Commanding General, GHQ Air Force became directly subordinate to the Chief of the Air Corps. (See accompanying chart.)

#### BOMBARDMENT AIRCRAFT IN GHQ AIR FORCE

The Air Corps Act of 1926 with its five-year Air Corps expansion program was the precursor







for the acquisition of modern, all-metal, single wing, retractable landing gear bombers. In 1933, the last year of the extended expansion program, Martin Aircraft Corporation delivered fourteen YB-10s to the Air Corps. Most of the YB-10s were used in the airmail operation. In 1934 an additional 103 Martin B-10s were delivered to the Air Corps. This increment of B-10s were used to equip the four bombardment groups then in existence. Boeing Aircraft delivered five Y1B-9As in 1933. These aircraft went to the 2nd Bombardment Group at Langley. Martin Aircraft also delivered twenty-five YB-12As which went to the 1st Wing on the west coast. The B-10 bombers had speed in excess of 200 mph and range of over 1,000 miles. Bomb loads varied among the three bombers. The YB-12A carried 850 pounds, and the Y1B-9A and the B-10 each carried 2,260 pounds.(See Appendix 8B) Most all of the field maneuvers and war games of the mid-1930's used the B-10B, B-12 and the Y1B-9A in the attacking bombing forces.

Follow-on aircraft to the B-10, B-12 and Y1B-9A were the Boeing YB-17, the B-17, and the Douglas B-18. The development of the Boeing YB-17 is covered in Chapter VII.

In 1939, better than 50% of the bombardment force was B-18 and B-18A bombers.<sup>44</sup>. Both the B-17 and the B-18 were in the Air Corps active inventory on December 7, 1941. Aside from conducting anti-submarine patrol off the east and west coasts, the B-18 never saw combat service in WW II.

#### Endnotes:

<sup>1</sup> Maurer, Maurer: "Aviation in the US Army 1919-1939". Office of Air Force History, United States Air Force, Washington DC., 1987, p. v.

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<sup>2</sup> Ibid Maurer p. xxv
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<sup>3</sup> Frisbee, John L. Article: "The Pioneers". December 199, Air Force Magazine, p. 82

- <sup>4</sup> Ibid Maurer, p. xxi
- <sup>5</sup> Ibid Maurer, p. xxxi
- <sup>6</sup> Ibid Maurer, p. 46
- 7 Ibid Maurer, p. 79
- <sup>8</sup> Ibid Maurer p. 70
- 9 Ibid Maurer p. 70
- 10 Ibid Maurer p. 40
- <sup>11</sup> Ibid Maurer p. 41
- <sup>12</sup> Ibid Maurer p. 43
- 13 Ibid Maurer p. 72
- <sup>14</sup> Major General Lassiter, Assistant Chief of Staff, Operations and Training, Army General Staff.
- 15 Ibid Maurer p. 72
- <sup>16</sup>Ibid Maurer pp. 73-74
- 17 Ibid Maurer p. 74
- 18 Ibid Maurer p. 127
- <sup>19</sup> Ibid Maurer p. xxviii
- 20 Ibid Maurer p. 40
- 21 Ibid Maurer p. 72
- <sup>22</sup> Ibid Maurer p. 75
- 23 Ibid Maurer p. 191
- 24 Ibid Maurer p. 195

<sup>25</sup> Ed Note: The bombardment squadrons in 1926 were four in the 2nd Bomb Group, three in overseas departments and one as a separate operating squadron.
<sup>26</sup> Ed Note: The reduction from 4 to 3 squadrons was the reason the 11th Bombardment Squadron was transferred from the 2nd Bomb Group.

<sup>27</sup> Shiner, John F., "Foulois and the U. S. Army Air Corps, 1931-1935," (Air Force Office of History, Washington, DC 1983) p11

- <sup>28</sup>Ibid Maurer p. 199
- <sup>29</sup> Ibid Maurer p. 201
- <sup>30</sup> Ibid Maurer p. 210
- <sup>31</sup> April 1994 interview with Maj. Gen. Russell "Gatty"

Waldron who flew the Keystone in the 2nd Bomb Group in 1932 32 Ibid Maurer p. 214 33 Ibid Maurer p. 346 34 Ibid Maurer p. 348 35 Ibid Maurer p. 347 <sup>36</sup> Ibid Maurer p. 350 37 Ibid Maurer p. 350 38 Ibid Maurer p. 209 39 Ibid Maurer p. 297 40 Ed Note: An excellent account of the Air Corps Air Mail venture can be found pp. 299-317: Maurer Aviation in the U.S. Army 1919-1939. 41 Ibid Maurer pp. 316-317. <sup>42</sup> Ibid Maurer p. 322 <sup>43</sup> Ltr, the Adjutant General (TAG) to Commanding

Generals (CG's) all Commands (CA's) Dec. 31, 1934 in AFHRC 149.54-81

<sup>44</sup> Fahey, James C.: "US Army Aircraft 1908-1946". 1st ed., Ships and Aircraft, 1265 Broadway, New York, NY 1946. p.22

#### CHAPTER VI

#### 1st Day Bombardment Group — 2nd Bombardment Group

Chapter V, "The Interim Years 1919-1937," dealt with national policy leading to development of U.S. military aviation policy, and with the slow evolution in acceptance and use of air power - all heavily influenced by the economics of the protracted Great Depression. This chapter returns to the Group and traces its development of the strategic bombing concept, and its efforts to demonstrate the validity of strategic bombing by becoming a credible strategic bombardment unit. While doing so, the Group had its numerical designation changed and received a Group insignia. It went into action against potentially hostile forces, took part in bombing captured German warships, and progressed through several generations of bombers. The Group was the first to complete a night formation cross country flight, to fly coast to coast, to intercept ships over 300 miles at sea, to deploy long distance over water, to receive the B-17, and to complete three round trips to South America.

Barely a month after the Armistice was signed ending WW I, the only U.S. bombardment group — the 1st Day Bombardment Group — was disestablished. Within six months of the Armistice, the 11th, 20th, 96th, and 166th Squadrons were likewise disestablished. The Group's Breguet-14s were returned to the French and the DH4 Liberty Planes were turned in to U.S. air depots in France. By May 1919, no bombardment aviation existed in the U.S. Air Service.

In early to mid-1919, the War Department tried to determine what role the Air Service would play in peacetime. The casual planning about the Air Service role and the number of personnel and aircraft to carry it out, moved excruciatingly slow. War Department thinking was that the Air Service should develop an organization of 2 wings, 7 groups and 27 squadrons. Of this number, one group would be bombardment and consist of four squadrons. This planning was interrupted by events in June 1919.

On the weekend of June 14, 1919, the national press reported that the Mexican rebel Pancho Villa had just attacked Juarez, Mexico for the third time. Cavalry troops from Ft. Bliss, Texas crossed the Mexican border and went to the assistance of the Mexican federal troop garrison at Juarez.

On June 16, Maj. Gen. Charles T. Menoher, Chief of the Army Air Service, ordered reactivation of the 1st Day Bombardment Group and the 11th, 20, 96th, and 166th Squadrons. As happened in 1917-1918, the squadrons were reactivated first and the group last.

#### MEXICAN BORDER PATROL 1919-1920

The first squadron to be activated was the 11th Aero Squadron, on May 26 at Ellington Field, Texas. Here it received a complement of new DH4's and departed for Ft. Bliss, Texas on June 22. On June 26, the 96th Aero Squadron was reactivated at Aberdeen Proving Ground, Maryland. The unit entrained for Ellington Field on June 20, where it received a complement of DH4's and proceeded via Kelly Field, Texas, to Ft. Bliss, for deployment at various airfields along the Mexican border. The 166th (later the 49th) Aero Squadron was reactivated at Ellington Field and moved by train to Kelly Field on September 26. It received a complement of DH4's at Kelly Field. The 166th did not deploy to the Mexican border. In October 1919, the 166th was ordered to the U.S. Army (Ordnance) Aberdeen Proving Ground to take part in aerial ordnance and pyrotechnic testing. The 20th Aero Squadron was reactivated at Ellington Field on August 14. The unit moved to Kelly Field, received its DH4's and proceeded to deploy along the Mexican border. The 1st Day Bombardment Group Headquarters detachment was reactivated at Ellington Field between August and September 18, 1919.1 Records of reactivation dates and dates of deployment to the Mexican border do not correlate. The dates given for reactivation of the squadrons, between May and August 14, 1919 are not, in all cases, chronologically consistent with the dates recorded for deployment of the units. It can be assumed that accurate record keeping at the office of the Chief of Air Service and by the units was not a high priority during this hectic time.

On June 16, Gen. Menoher ordered his units into action. Two flights of six DH4s, each from Ellington Field, and one flight of six DH4's from Kelly Field were ordered to Ft. Bliss, Texas.<sup>2</sup> The 11th Aero Squadron deployed from Kelly on June 17, to Ft. Bliss. The 20th Aero Squadron left Ellington Field en route to Ft. Bliss on June 20.3 By August the Air Service border patrol consisted of five squadrons - the 11th Aero Squadron, the 12th Observation Squadron, the 20th Aero Squadron, the 96th Aero Squadron, and the 104th Surveillance Squadron.4 Official records kept during the period June to September 1919 are sparse. It is obvious that the Air Service was responding to an immediate threat on the Mexican border and the emphasis was on gathering men and airplanes into an organization to do so. It is clear that the three squadrons deployed between June and August 1919.

Although the initial deployment was along the Texas-Mexican border, the patrol area was eventually expanded from the Texas border westward to San Diego, California.<sup>5</sup> The primary mission was defending the border against Pancho Villa raids. There was a secondary mission to help stop smuggling of aliens and drugs into the United States and prevent arms being smuggled into Mexico from the United States.

Air Service personnel with DH4 aircraft began arriving at Ft. Bliss on June 15. Maj. Edgar G. Tobin, a WW I ace who had flown with the 103rd Aero Squadron in France, was the Air Service officer in charge at Ft. Bliss. He inaugurated the aerial patrol along the border on June 19. By mid-September the patrol force had grown to 104 officers, 491 enlisted men and 67 aircraft.6 After the four Squadrons were reactivated and deployed, including the 166th at Aberdeen, the 1st Day Bombardment Group was reactivated at Ellington Field, and immediately moved to Kelly Field. None of the Group staff was involved in the border patrol. Not until the border patrol ended did the Group gain command of its Squadrons.

The DH4 was readily available for use as a bombardment and observation aircraft for the border deployment. During WW I, the Dayton Wright Corporation produced 1,206 of these aircraft. Production was canceled at wars end, but by then the DH4 was the mainstay of bombardment and observation squadrons.<sup>7</sup> The DH4 had serious limitations as a bomber. It had short range and limited bomb carrying capability, and because of the location of its fuel tanks, it was very vulnerable to catching fire.

The limited fuel capacity of the DH4 had been recognized in France. A retrofit program to increase fuel capacity was started in early 1919. By the time the four bombardment squadrons were deploying to the Mexican border and Aberdeen, the DH4B, (the designation for the modified airplane) with an additional 88-gallon fuel tank, was coming off the retrofit line. The squadrons initially deployed with DH4's, but by October they were replaced by the DH4B's<sup>8</sup>

The deployment to Fort Bliss was not without incident. The 11th Squadron had one aircraft damaged in landing. This aircraft was eventually repaired and arrived four days after the rest of the Squadron. Three other aircraft were damaged en route, and one DH4 crashed and burned. These planes were from the 20th and 96th Squadrons.<sup>9</sup>

From Ft. Bliss, the 11th, 20th, and 96th were further dispersed to patrol bases along the border. The 96th went to Douglas, Arizona, the 11th to Marfa, Texas and the 20th to Sanderson, Texas. All of the patrol bases were hurriedly-created tent camps. Tents were used for all operating functions and for living quarters. A tour of duty on the border was described as a lonely life of hardship without social contacts, in hot barren desert wastes, tortured by sun, wind, and sand. Personnel faced possible death. And all this on starvation pay.<sup>10</sup>

The DH4's were acquired from post-WW I stockpiles. Not all of the aircraft were similarly equipped. Some had bomb racks, some did not. Some had camera mounts and others did not. Few of the forward-firing Marlin machine guns had been properly installed or checked-out. Without exception, however, the twin Lewis machine guns at the Observers position worked well.

It was a real problem obtaining adequate air-

craft parts at the deployment sites. Col. James E. Fechet, Air Service officer at the Southern Department, found it no easy task to obtain bomb racks, machine gun mounts, cameras, camera mounts, and other equipment. Even after stockpiling items at Ft. Bliss, it was quite another job to get them to the dispersed units.

Flying conditions along the border were often difficult and chancy. Sudden rainstorms, cloudbursts, sand storms and other weather phenomena played havoc with the DH4's. Airfields were little better than pastures or desert floor. The DH4 spread-bar (axle) made landing and takeoff on an unprepared field both difficult and dangerous. Rocks, cacti or large anthills could break the spread-bar and cause the aircraft to nose over. Most nose-overs damaged the propeller, caused fuel leakage and the danger of fire, and sometimes injured the observer.12 The two forward-firing Marlin machine guns had no proper sighting device. The pilot had to use his radiator cap as an aiming point, and when he did fire his guns, they often jammed. The Marlin gun jams were primarily caused by improper gun synchronization parts initially installed on the aircraft. Parts supplied with the guns did not fit the DH4's deployed along the border.13

Patrol missions were flown daily from sunup to sun-down. The maximum flight time was about four hours. The DH4B had the 88-gallon fuel tank which increased its flight endurance, however, oil, and not fuel, was the problem. Quite often engine oil was consumed before the fuel supply was gone.<sup>14</sup>

General flying conditions were less than optimum. The DH4 compasses were unreliable; local maps were sketchy and of little use. The patrol region was wild, rough, and sparsely populated with few places for safe emergency landing. And an emergency landing would probably break the spread-bar and damage the aircraft. The air crews were not especially equipped for emergency survival if they had to crash land. Crews carried a .45 caliber pistol and a canteen of water. No record was found that crews from the three squadrons had crashed, or crash landed and had to survive in the wilds. There are stories of crews from other Air Service squadrons who had harrowing survival experiences.<sup>15</sup>

The peak of patrol activity by the 11th, 20th and 96th Squadrons occurred between late June and September 1919. The Pancho Villa threat was pretty well dispelled by July. After September, the deployed units spent less time on patrol and more time training with infantry, artillery and cavalry. The cavalry called the DH4's "flying chickens." The Squadrons practiced aerial gunnery and formation flying, experimented with radio and other signalling systems, located and marked emergency landing fields, and worked to upgrade their local facilities and equipment.<sup>16</sup>

In time the three Squadrons relinquished their patrol assignments to the 1st Surveillance Group and returned to Kelly Field. The 11th returned November 1919, the 96th in January 1920, and the 20th in August 1920.

Service on the Mexican border gave the Squadrons extensive experience in operating under austere field conditions. From the viewpoint of the fledgling Air Service, the Mexican border patrol experience provided valuable lessons about the deployment and operation of air units. It was an early projection of air power as an effective military deterrent. The shortcomings of the DH4 and the DH4B, the paucity of aeronautical knowledge, and the hazards of flying, challenged the ingenuity of the airmen.<sup>17</sup> The lessons learned by the air crews and support personnel did not fall on deaf ears. One fact emerged — the DH4B was not a good bomber. There was a requirement for a new and better bombardment aircraft. The border experiences led the Air Service to conclude that the DH4 must be replaced.

#### 1919-1920

The 166th Squadron at Aberdeen Proving Ground, had some similar experience with the DH4. Its work in the development of bombs and pyrotechnics was limited by the inability of the DH4 to lift a bomb load much over 250 pounds. Furthermore, any night bombing attempts were discouraged by the blinding exhaust flashes.

Gen. Mitchell's plans for the famous ordnance tests of bombs against capital navy ships included using the bombers of the 1st Day Bombardment Group. It was principally at his urging that the Squadrons were relieved of border patrol and returned to Kelly Field by the fall of 1920. At the same time the 166th Squadron returned from Aberdeen. Mitchell's insistence that the units be returned to Kelly Field was prompted by his desire to retrofit the aircraft and get air crews in the best possible shape.

Between July 1919 and September 1920, the Group received many new enlisted personnel by transfer from other Army units, and directly from recruiting stations.19 Those enlisted men recruited by the Group came directly to the Group from civilian life.20 It was the responsibility of the receiving unit to train these recruits. The Group initiated its own training program and then sent the recruits to the Kelly trade schools. During 1919 and 1920 most trade school training was at Kelly. Men received training as mechanics, armorers, parachute riggers and clerks. Other specialties, like supply, were acquired through on-the-job training. Enlisted life in the Air Service was not much different from the rest of the army, with the exception that there was much less concentration on close order drill and field maneuvers with packs and rifles.

Pilots and observers had their training during World War I or were graduates of the pilot flying school at Kelly Field or the observer school at Ellington Field. Since the post-war limitation on the number of regular officers, and no extended active duty for reserve officers, the supply of trained pilots and observers was somewhat limited. Further, specialized training for observers was phased out sometime between 1920 and 1923. The phase out left only pilots as officers on air crews. From mid-1919 through mid-1935, the Group was always short of flying personnel.

By the time the Group's four squadrons returned to Kelly in the fall of 1919 and mid-1920, Kelly Field had become the home of the Air Service's Pursuit, Bombardment and Surveillance Groups. In addition, Kelly was developing into the training center for the Air Service in



Source: Maurer Maurer: "Aviation in the US Army 1919-1939." Office of Air Force History, USAF Wash DC 1987

1919. With three combat groups, and the increase in size of the training schools, space was a limiting factor in the operation of all units.

Although the Group started training to bring itself up to combat readiness, budget cutbacks, release of reserve officers, a chronic shortage of regular flying officers, and the conditions at Kelly, all served to hamper the effort. One piece of good news came from the Chief of Air Service office in Washington. The Group was to receive a new Martin bomber with greater bomblift capability, twin engines and better range than the DH4B. This new bomber, initially designated the MB-2, was designed for a crew of four men. It had two wings, 420 horsepower Liberty engines, and a reported speed of 98 mph. The MB-2 was scheduled to replace some of the Group's DH4B's.<sup>21</sup> ( See Appendix 8B)

Until the MB-2 arrived, the Group trained in formation flying, aerial gunnery and bombing, and experimented with new types of aerial compasses. Gun sights were improvised for the DH4B forward-firing Marlin guns, and the jamming problem was solved by installing an improved synchronization system. Throughout this training, the need for better aerial maps and better bomb aiming devices were emphasized by the air crews. For maps, air crews used anything that was available — mostly local, county, and state maps. The problem was that maps designed for ground travel just didn't have the detail needed by flyers.

The flyers were not happy with the existing

bomb-aiming devices. Bomb sighting was done with a crude mechanical tubing-and-wire arrangement that could compensate for ground speed and altitude but not for drift or for lateral or longitudinal position of the plane. Things were pretty crude for the bombardier. One method used to keep the plane level and on course was to have a string tied to each of the pilot's arms. The bombardier, in the rear cockpit, would pull the string on either the right or left arm to have the pilot raise or lower a wing22. Additionally, the flyers experimented with radio and various types of air-to-air signalling. 1920 was too early for wireless transmission of signals for air-to-ground and air-to-air communications. Workable radio equipment was still seven-to-ten years in the future.

In 1919, Kelly Field was far from being a modern air base. The runway was compacted dirt, and hangars were available for only part of the maintenance work. Most aircraft were maintained in the open. There were insufficient buildings for all the air units assigned. A limited amount of barracks and office building construction was begun in 1920, but the pace of construction could not keep up with the additional missions being assigned.

There were few social activities available at Kelly in 1919-1920. What did exist was an improvement over life at the deployed sites along the Mexican border. There were a limited number of day rooms (enlisted recreation rooms). The officers' club was little more than a large

room; there was no cinema, and only a mediumsized canteen. San Antonio, Texas, adjacent to Kelly, was very friendly to the personnel stationed at Kelly. Although the citizens' outpouring of friendship was not as fervent as during WW I, still San Antonians made a better-thanaverage effort to make Kelly personnel feel at home. Sometimes this feeling of citizen-soldier camaraderie was put to the test. One of the pilots, from the 1st Day Bomb Group, had a Stutz Bearcat Miniature. He would roar into San Antonio, race around the streets, and end up driving over the sidewalks. Doing so drove the San Antonio police force mad, and they would give chase to the Stutz Bearcat! With the police in pursuit, the pilot drove madly back to Kelly, raced through the entry gate, and disappeared into the environs of Kelly. In the meanwhile, the police would mill around at the front gate vowing that next time they would catch him!23 On the other hand, there was a serious flood in San Antonio in 1920, and all the troops, including, Group personnel, turned out to give immediate assistance to the flood victims. Despite the antics of the Stutz Bearcat driver, relations between the citizens of San Antonio and Kelly Field personnel remained amicable and upscale through the Group's assignment there.

1921 was an eventful year for the Group. It received the new MB-2 bombers, the Squadrons were deployed to Langley Field for bomb trials against decommissioned war ships, and the Group designation was changed.

#### REDESIGNATION TO 2D GROUP (BOMBARDMENT)

In late 1920 the Group learned that the Air Service had bought the Martin-Curtiss bomber and that the Group was to receive these planes early in 1921. Nineteen MB-2s were delivered to the Group between February and October 1921. (See Appendix 8B) The MB-2 was a giant step forward compared to the DH4B. The Group started a unit training program, crews checked out in the new airplane, and began taking cross-country practice flights. During this initial training period, Gen. Mitchell visited the Group to discuss the features and capabilities of the MB-2 with the air crews. He was very interested in MB-2 flight characteristics and its load carrying capacity.

In addition to the MB-2 bombers, the Group received three Handley Page 0/400 (HP O/400) bombers and one Caproni bomber from Ellington Field, Texas.<sup>24</sup> These aircraft, especially the HP0/ 400, were extremely large. The pilot's cockpit in the HP 0/400 was twelve feet above ground. The HP 0/400 was better than the DH4B, and flew well, but tended to nose over on the ground. It could lift 2000 pounds of bombs. The Caproni was also huge but was very slow, could not lift more than 1500 pounds of bombs, and was considered a maintenance headache. (See Appendix 8B)

On March 4, 1921, the 166th Squadron was consolidated with a WW I pursuit squadron and redesignated the 49th Squadron (Bombardment)<sup>25</sup> The 49th Aero Squadron had flown in WW I as a pursuit squadron and had established an excellent combat record. On one occasion in 1918, the 49th came to the aid of the 1st Day Bombardment Group, and shot down several German aircraft attacking the Group. The 49th's WW I record was retained in the consolidation with the 166th. The 49th Squadron now had a dual lineage and honors with the 166th Squadron.

On March 31, 1921, the Group designation was changed from the 1st Day Bombardment Group to the 2d Group (Bombardment).26 Since this date the unit's official numerical designation has been "2d," however, the designations "2nd," and occasionally "Second," have been commonly used throughout the history, just as "Bomb" is commonly used instead of "Bombardment" as in 2nd Bomb Group/Wing. Each of these designations are used in this record. Sources differ as to what happened to the designation, "1st Day Bombardment Group." One states: "Reconstituted (in 1924) and consolidated with a group that was organized in the U.S. as the 1st Day Bombardment Group in 1921."27 Another source states: "In March 1921 the Group was then redesignated Headquarters Detachment 2d Group (Bombardment)."28 Regardless, the 2d Group (Bombardment) inherited the history, lineage, honors, personnel and equipment of the 1st Day Bombardment Group and thus became the oldest bombardment group in the U.S. Air Service, the Army Air Corps, the Army Air Force and the U.S. Air Force. There is no further official mention of the 1st Day Bombardment Group; except for the assumptions stated below, it is not known what happened to it.

As mentioned earlier, the Air Service components in 1921 were one wing, three groups (pursuit, bombardment, and attack), one group headquarters and ten observation squadrons The wing was designated the 1st Wing. The groups, of four squadrons each, were designated the 1st Group (Pursuit), the 2d Group (Bombardment) and the 3d Group (Attack). It is logical to assume that the designation, "1st Day Bombardment," could not continue in light of the 1st Group (Pursuit) designation, and was changed to a HQ Detachment and assigned a paper status, (no personnel assigned).<sup>29</sup> The 1st Wing and its three groups were the GHQ reserve.

#### BOMBING TRIALS AGAINST NAVAL SHIPS

In October 1920 Gen. Mitchell, then head of Air Service Operations and Training, and three other Army officers, accepted an invitation to witness a Navy aerial bomb test against the old battleship, the USS Indiana, in Chesapeake Bay. The results of this test were ignored in the United States until British newspapers published pictures of the Indiana's wreckage. American newspapers picked up on this release and aroused a great public controversy in the U.S. The question was, "Are battleships a thing of the past?" In a most Machiavellian fashion, Gen. Mitchell articulated the controversy and succeeded in getting the War and Navy Departments to conduct a test of aircraft against warships.30 In February 1921, Secretary of War Baker negotiated a plan with Secretary of the Navy, Josephus Daniels whereby, under Navy management, the Air Service would participate in bombing tests against ex-German warships.

Life took on new meaning in the Group. In March 1921, the Group was advised that it would furnish aircraft, personnel, and material for the upcoming bombing trials. The Group began preparing the MB-2's, the three HP 0/400's, and the one Caproni for movement to the east coast, but the Group was short of aviators to man its aircraft. The 11th Squadron had 7 officers and 99 enlisted men assigned. The 20th had 10 officers and 77 enlisted men. The 49th had 3 officers and 73 enlisted men, and the 96th had 6 officers and 48 enlisted men assigned. The Group's total strength was 26 officers and 297 enlisted men<sup>31</sup>. To meet the Group's immediate manpower needs, the 1st Group (Pursuit) transferred 20 officers and 11 aviation cadets to the 2d for training.

Gen. Mitchell initially established his headquarters at Aberdeen Proving Ground, then moved to Bolling Field, Washington, DC, and finally to Langley Field. Under Mitchell's direction, Maj. Thomas De W. Milling, Commandant of the Air Tactical School at Langley Field, began assembling officers and men into a 1st Provisional Air Brigade, the Air Service tactical unit for the bombing trials. Air Service personnel were detached to the Brigade from several Air Service units throughout the country.

Mitchell managed to assemble about 90 planes for his 1st Provisional Air Brigade. Among these were 22 SE 5's, some 40 DH4B's, 4 HP 0/400's, 2 Caproni's and 16 MB-2's. The largest contingent of personnel to be detached and sent to Langley was from the 2d Group (Bombardment). In May 1921, the Group and its four Squadrons of 65 officers, 43 cadets and 290 enlisted men, either flew or were entrained to Langley Field.<sup>32</sup>

The 1st Provisional Air Brigade commenced training almost immediately on arrival at Langley. The first part of the training was instruction on bombs, bomb sights, bomb racks, radios, armament and the theory of bombing. One problem that plagued the air crews was the lack of a suitable bombsight. With so much at stake the flyers were extremely reluctant to rely on the



Martin, MB2, 1921. (Courtesy of Kelly Air Force Base)



DH-4B's 11th Squadron, Kelly Field, 1920. (Private Collection)



Bomb loading, Cape Hatteras, 1923. (Courtesy of Eighth Air Force Museum)



German Cruiser "FRANKFORT," 1921. (Courtesy of Eighth Air Force Museum)



Practice target, Mulberry Island, 1921. (Courtesy of Eighth Air Force Museum)

tube and wire arrangement they currently had. There had been some previous discussions about a bombsight among the 2d Group, Mitchell's office and the Sperry Instrument Company in Long Island, New York. Literally, at the last minute, Lawrence Sperry arrived at Langley with an experimental, gyroscopic sight. This sight compensated for ground speed, altitude, drift and lateral and longitudinal position of the bombing plane.33 Practice bombing was done with this bombsight using dummy and live bombs of various weights. The flyers practiced on fixed targets (ground outlines of ships) on Mulberry Island in the James River and on moving targets towed by a sub-chaser in Chesapeake Bay. The largest bomb available to Mitchell's Brigade, in May 1921, was an 1100-pound bomb. Mitchell arranged for Aberdeen Arsenal to produce a 2000 lb. bomb. The Caproni, the HP 0/400, and the MB-2 could lift the 1100-pound bomb but only the Hp 0/400's and the MB-2's could lift 2000 lb. bombs. It had been Mitchell's contention that the standard 300-pound bomb would not pack enough destructive power to sink a large ship. Additionally, Mitchell did not want these ordnance tests to proceed without photo documentation. For the precision photography he desired, Mitchell prevailed on Lt. George Goddard, the "father" of Air Service photography, to fly with him off the Virginia Capes to capture the epochal photos of the bombing trials34

#### THE BOMBING

Bomb tests, against warships anchored 65 miles off the Virginia Capes near Chesapeake Bay, began on June 21, 1921. The first target, the ex-German submarine U-117, was sunk by the first wave of attackers — twenty-six Navy planes. The 1st Provisional Air Brigade, scheduled as the second wave, did not attack.

The second scheduled trial set for June 29th was against the ex-USS Battleship Iowa. For this test, the Iowa was to cruise under radio control, 50 to 150 miles offshore. Only dummy bombs were to be used. For several reasons Mitchell was wary of this operation and did not commit his bombers.<sup>35</sup>

On July 13, the target was the German destroyer G-102. The schedule called for a first strike by the 1st Brigade, a second strike by Navy planes, and a third strike by surface ships. Mitchell directed his operations from a brightly painted DH4B with photographer Goddard on board. SE 5's attacked from about 2,000 feet with machine guns and twenty-five-pound antipersonnel bombs. Each SE 5 carried four bombs. In four passes, the SE 5's registered twenty-five hits, four of them duds. The objective of this attack was to neutralize the ship by clearing the decks of personnel. Next came sixteen MB-2's from the 2d Group. Capt. Walter Lawson led the flight. The bombing altitude was 1,500 feet. The bomb load - six 300-pound demolition bombs. Two bombs were dropped on each pass. Capt Lawson's bombs straddled the ship about seventy-five feet to each side. The other 2d Group aircraft followed at 45-second intervals. One MB-2 scored two direct hits. The G-102 began to sink by the stern. Two minutes later another 2d Group plane scored two hits and the G-102 began to settle fast. Another MB-2 scored two

more hits, followed by one more MB-2 that made a direct hit on the bow of the G-102 as it was sinking below the waves. The 2d Group crews did the job, and there was no need for the other scheduled attacks.<sup>36</sup>

On July 18, the target was the ex-German cruiser Frankfort, anchored off Cape Charles Lightship. Both Navy and Army strikes were scheduled. During the morning the Navy dropped 250-pound bombs and the 1st Brigade dropped 300-pound bombs. The ship was inspected and found to have only superficial damage. The Navy tried again in the early afternoon with 250 and 550-pound bombs. Another inspection revealed that the stability of the Frankfort was unaffected. At 4:15 P.M., Capt Lawson and his flight of MB-2's, attacking singly in succession, struck the Frankfurt with 600-pound bombs with dramatic results. Bombs fell all over the ship and close alongside. Those close alongside sprayed tons of water over the cruiser. One attack made two hits amidship and another so close alongside it literally lifted the Frankfort out of the water. Finally, another MB-2 made two more direct strikes on the cruiser. All bombing ceased at 4:25 P.M. By 4:45 PM, the Frankfort had a pronounced list to port and five minutes later, thirty-five minutes after the first Martin MB-2 attack, the Frankfort disappeared from sight. One of the MB-2 crew members said: "It is not possible to describe the thrill, the exhilaration, the feeling of achievement of those of us in the Martins. To see the damage done to that ship and to see it plunge out of sight was proof positive to us that air power could sink large seacraft."37

On July 20-21, the tests were concluded with attacks on the ex-German battleship Ostfriesland. The Ostfriesland was "the target" of the test schedule. On the first day both the Navy and the 1st Brigade<sup>38</sup> attacked the Ostfriesland. Mitchell had encouraged his bombers to drop their bombs close alongside the ship. Mitchell was convinced that heavy underwater explosions would do more damage than direct hits to the battleship. The operation began with alternate attacks by the Navy and the 1st Brigade, but they had to be called off early because of bad weather. After the test was stopped, inspectors who went aboard reported little damage topside but considerable underwater damage. The battleship was listing to port and settling by the stern.39

Bombing resumed the next day. The 2d Group crews led the assault at 8:32 A.M., with MB-2's carrying one 1100-pound bomb each. 1st Lt. Clayton Bissell scored a hit on the forecastle with the first bomb. The next four MB-2 crews scored two more direct hits and two near misses. Attacks were halted to inspect the ship. The inspectors found no vital damage to the ship or its main battery, but the Ostfriesland's fighting efficiency was affected by water gushing through a large hole in the ship's starboard side.

That afternoon 2d Group elements attacked with 2000-pound bombs. Mitchell dispatched Capt. Lawson with eight MB-2's and three HP 0/400's. Of the three HP 0/400's, two carried the 2,000-pound bomb and one carried a sighting bomb. One HP 0/400, with a 2000-pound bomb, ran out of fuel because of fuel mismanagement and ditched in the Chesapeake Bay on the way to the target. The crew escaped with no major injuries and was rescued by a destroyer. Despite the fact the HP 0/400 could have been salvaged, the Navy sank it by gun-fire, claiming it was a hazard to navigation.<sup>40</sup>

The Martins were faster than the HP 0/400's and unloaded their bombs before the HP 0/400s arrived. The second 2000-pound bomb dropped by the MB-2's hit the Ostfriesland's side armor, glanced off, and exploded less than twenty-five feet from the port side. The stern of the Ostfriesland settled fast and in a few minutes it " gave up the ghost," turned over, and sank from sight.<sup>41</sup>

Throughout the tests, Gen. Mitchell was airborne in his brightly painted DH4B, with Lt. Goddard in the observer position taking his memorable photographs. After the Ostfriesland sank, Mitchell banked his plane around the test observer ship, the USS Henderson. The gallery of VIP's on board the Henderson waved and shouted their congratulations as Mitchell buzzed over them. If sky writing had been available those days, it is possible that Mitchell would have spelled out: "I told you so!" Back on the ground, Mitchell received a wire from General Pershing that said, "Congratulations to you and the entire aircraft brigade on your brilliant performance today."<sup>42</sup>

It is ironic that the lessons learned from these tests were first used not *by* the United States, but *against* the United States. The first combat use of aerial bombing against U.S. capital ships was by the Japanese at Pearl Harbor.<sup>43</sup>

The Group detachment of the 11th, 20th, 49th, and 96th Squadrons had done themselves proud! They had carried the weight of the bombing trials, and were responsible for sinking the German destroyer G-102, the cruiser Frankfort and the battleship Ostfriesland. This was the initial demonstration of target vulnerability to various bomb sizes and fusing. The Group's performance did not go unnoticed. Gen. Mitchell



2nd Bomb Group MB-2 makes direct Phosphorous Bomb strike on German battleship "Ostfriesland" during aircraft-against-ship trials, 1921. (Courtesy of Eighth Air Force Museum)



German battleship "Ostfriesland," 1921. (Courtesy of Eighth Air Force Museum)

emerged from the tests a national hero with an inner obsession that the Navy, through its reluctance to have the bombing trials in the first place, had conspired to prevent him from sinking any of the German warships.<sup>44</sup>

Throughout the tests, the Navy flagship for the operation had a considerable number of highranking observers aboard; the Secretary of War, the Secretary of the Navy, the Secretary of Agriculture, General Pershing, eight U.S. senators, twelve congressmen, newspapermen, and armament experts. What they observed had some impact in determining future U.S. military air policy. The 1921 tests and follow-on tests in 1923, affected decisions made in 1925 and 1926 concerning the future of military air and the passage of the 1926 Air Corps Act.

Prior to the tests Navy Secretary Josephus Daniels (1913-1921)scoffed at the idea of airplanes sinking Naval warships. He said,"I will stand on the bridge of a battleship, bareheaded, while airmen bomb it and, 'by God,' I expect to remain safe." It was a good thing that Secretary Daniels did not follow through on his boast.<sup>45</sup>

Following the tests, and while still commander of the 1st Provisional Air Brigade, Gen. Mitchell led a mock raid against New York City on July 29, 1921. Seventeen MB-2's, one HP 0/ 400, and one Caproni, all of the Group, flew over New York in a great "V". The unit landed at Mitchel Field, New York, where Mitchell put the planes on display for the public and gave his crews leave to visit New York City. On July 31, the 1st Provisional Air Brigade bomber unit returned to Langley. On the way back, Mitchell ran mock bombing raids against Philadelphia, Wilmington, Baltimore and the United States Naval Academy at Annapolis, Maryland.

#### SINKING OF THE USS ALABAMA

Mitchell's victory trip to New York and points in between was not the last action of the 1st Provisional Air Brigade. Still to come was another bombing test against a decommissioned battleship — the USS Alabama.

August 1921 was spent in aircraft maintenance, practice bombing, formation flying, and improving air-to-air and air-to-ground radio communications. The down-time also gave the officers and men respite from the demanding duties of the tests. Enlisted men organized baseball games and went off base to visit the area surrounding Langley Field.

Meanwhile, Gen. Mitchell negotiated with the Navy for an old battleship for use in developing bombing tactics. The Navy agreed. In early September 1921, the decommissioned USS Alabama was towed to a spot about seven miles southwest of Tangier island in Chesapeake Bay. Tests began on Friday, September 23, with the objective of attacking, disabling, and sinking the Alabama. At 8:23 A.M. on Friday, September 23, two MB-2's of the 2d Group began laying a smoke screen windward of the Alabama. This was followed by two DH4B's with tear gas bombs. Shortly afterward, two MB-2's dropped eight 100-pound phosphorous bombs, scoring six direct hits. Phosphorous fumes and flames covered the entire ship. Later two more MB-2's, each with fifteen twenty-five pound phosphorous bombs, attacked the ship. Six of these thirty

bombs were direct hits and the rest were wellplaced around the battleship.

That night the Brigade attempted a night attack against the Alabama. The attack started with the DH4B's dropping flares to illuminate the target, and 100-pound demolition bombs. The blinding light from the exhaust stacks on the DH4B's caused the crews great difficulty in spotting the target. Consequently, the DH4B bombs failed to score. In the next attack two MB-2's dropped two flare bombs and two 300-pound bombs. The MB-2's scored two hits. However, the general postmission complaint was that the brilliant flare light interfered with bomb sighting, and impaired bombing accuracy. The night bombing portion of the test was unsuccessful.

The attack resumed the next day. DH4B's laid a smoke screen, and seven SE 5's attacked with machine guns and small anti-personnel bombs. Four MB-2's followed with 300-pound demolition bombs. Four other MB-2's, armed with 1100-pound armor piercing bombs, took off to attack. One Martin had motor trouble and ditched en route, but the other three MB-2's attacked. The day ended with the Alabama seriously damaged and her fighting efficiency reduced,46 but the ship was still afloat. The test had gone according to Mitchell's general plan. Mitchell wanted to use a series of tactics and bomb sizes to determine the most effective way to disable a navy capital ship, and the best way to sink the disabled ship.

The air crews and maintenance personnel were given that Sunday off. Monday, September 26, the serious business resumed. Seven MB-2's and one HP 0/400 were dispatched. Each aircraft carried a 100-pound sighting bomb. In addition, four of the MB-2's carried two, 1100-pound bombs. The attack of the seven MB-2's sent the Alabama to the bottom of Chesapeake Bay. The slower HP 0/400 did not drop its 2000-pound bomb. The show was over, and the Alabama was gone by the time the HP 0/400 was ready to attack.

The bombing of the Alabama was the last of the test operations. All units of the 1st Provisional Air Brigade, including the large contingent from the 2d Group, returned to their home bases at the end of October. Some historical sources do not list 2d Group participation in the 1921 bomb trials against ships, because only the Squadrons were detached to the 1st Brigade. The 2d Group Headquarters remained at Kelly. Some sources list only the 49th and 96th Squadrons as participating.<sup>47</sup> Various other sources list all four squadrons — 11th, 20th, 49th, and 96th — as participating.<sup>48</sup> The Group detached 65 officers, 43 cadets and 290 enlisted men, a number suggestive of the combined strength of the four Squadrons at the time. All sources agree that the Group participated in the 1923 bomb trials against U.S. decommissioned ships.

These trials added greatly to the training and experience of the Group and its Squadrons. Combined with their experience on the Mexican border, the Group had training akin to wartime needs — extensive practice and improved proficiency in bombing, practice in deployment, and experience operating from bare-bones, forward airfields. Further, the use of radio in aerial bombardment maneuvers added to their understanding of air-to-air and air-to-ground command and control. Overall, the 2d Group was perhaps the best prepared bombardment unit existent at the time.

#### MOVE TO LANGLEY FIELD, VIRGINIA

The return to Kelly was uneventful. Air crews flew the planes back and all other personnel rode the train. On return, Kelly was even more crowded than when the units left in mid-1921. More training schools had opened and competition for building and ramp space was keen. Finally, in May 1922, it was announced that two of the tactical units at Kelly would move to other bases in June. The 1st Group (Pursuit) moved to Selfridge Field and the 2d moved to Langley. The 2d Group (Bombardment) designation was changed to 2nd Bombardment Group, prior to its move to Langley.

Between October 1921 and June 1922, the Group received additional Martin MB-2's. As of June 1922, the Group aircraft complement numbered twenty seven MB-2's. Before moving, the Group transferred its DH4B's to the



USS Alabama Direct Hit, 1921. (Courtesy of Eighth Air Force Museum)