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From Huffman Prairie To The Moon
The History of Wright-Patterson Air force Base

From Huffman Prairie To The Moon - was divided into twelve parts due to the large size of the document. At the beginning and end of each division we have included a page to facilitate access to the other parts. In addition we have provided a link to the entire report. In order to save it, you should right-click on it and choose save target as. This is considered the best way to provide digital access to this document.

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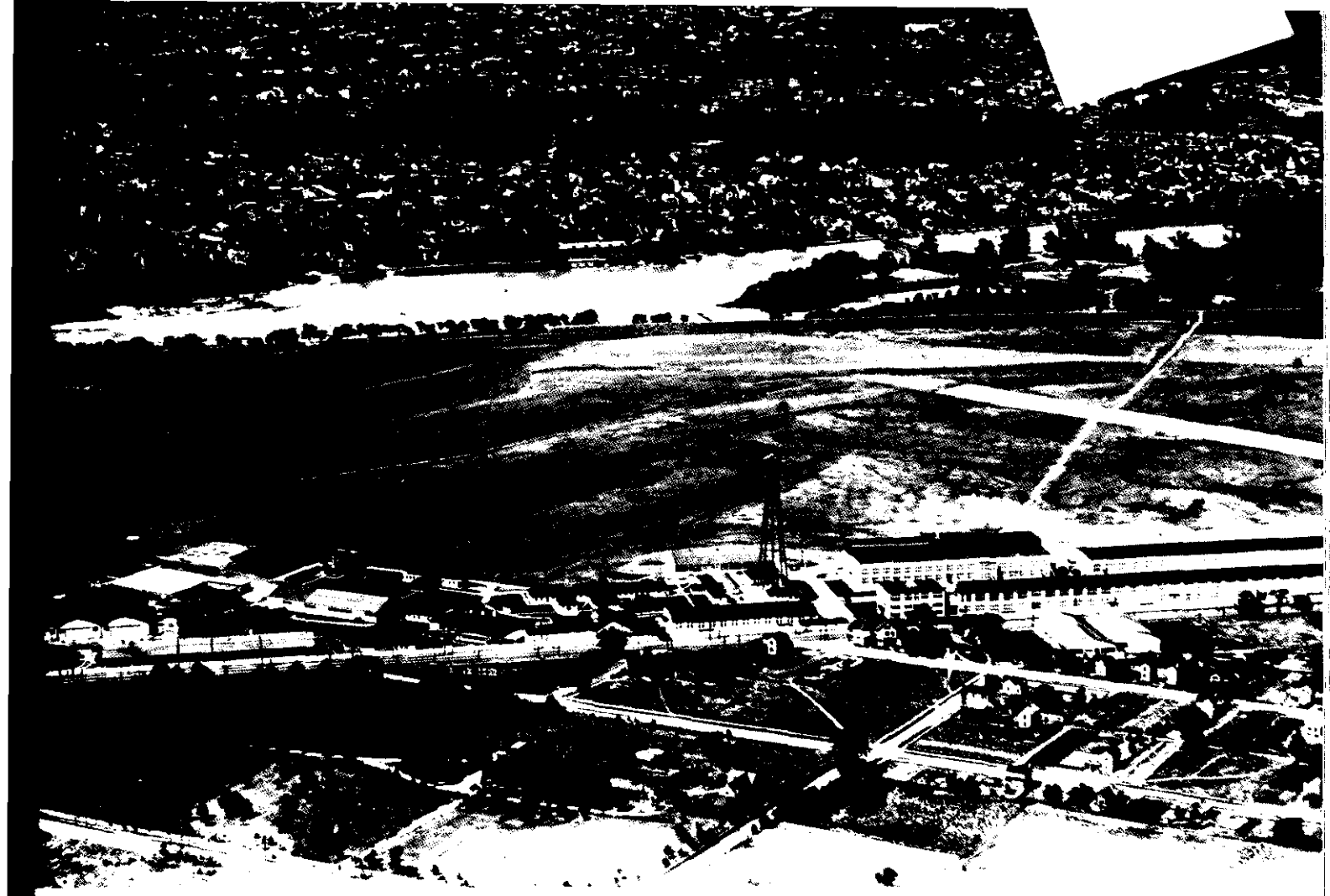


McCook Field, "Cradle of Military Aviation Development," along the eastern bank of the Great Miami River in Dayton *(Mrs. Darlene Gerhardt)*

IV. McCOOK FIELD 1917-1927

A TIME OF CRISIS

The story of McCook Field, like the story of Wilbur Wright Field, began several years prior to World War I. On March 3, 1915, eight months after the Aviation Section of the Signal Corps was created, Congress called for the establishment of a National Advisory Committee for Aeronautics (NACA). This committee was composed of representatives from the War, Navy, Treasury, Commerce, and Agriculture Departments. It was tasked to direct studies that would generate data vital to the improvement of American military aviation.

The foremost concern of the NACA was the war in Europe. Although America was not yet directly involved, leading members of the military establishment felt it would be prudent to assess American aviation capabilities. They felt that should America enter the war, an effective aerial force might well be the deciding factor in an Allied victory.

The Aviation Section, in 1916, could claim only a handful of aeronautical engineers and draftsmen. It was no secret that the U.S. lagged far behind the rapid developments taking place in Europe due to the press of wartime. U.S. engineers had little experience with military aircraft design, and aircraft production was conducted basically one airplane at a time. NACA members were determined to rectify these deficiencies.

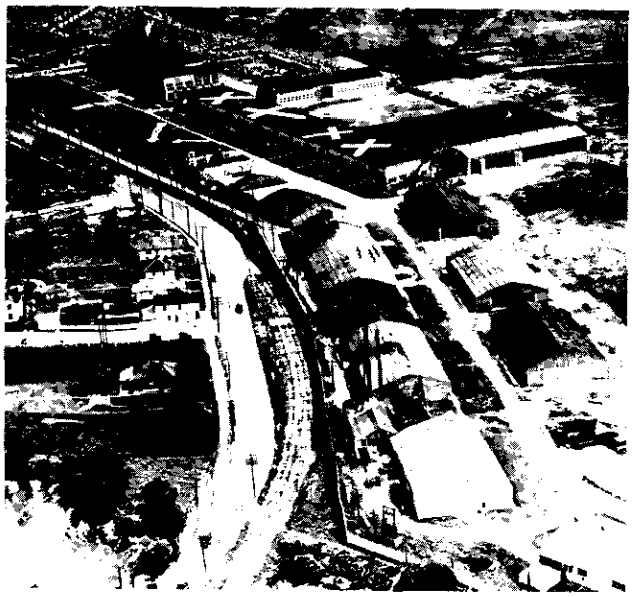
Congress granted the Committee authority to conduct research and experimentation "in any laboratory, in whole or in part, which may be assigned to it."[1] What the NACA discovered, however, was that no such facility existed. In the summer of 1916, the Committee concluded it had no alternative but to construct its own research facility, one that would be shared jointly by NACA, the Army, and the Navy. Property was purchased near Hampton, Virginia, and in April 1917, construction began on the installation that was to become Langley Field.

Time, however, was against them; war with Germany was declared April 6, 1917. Appropriations for aviation had been increased five months earlier (to $14 million on November 16, 1916), but the engineering and aircraft manufacturing industries lacked sufficient time to gear up for the tremendous demands of wartime production. Nor could

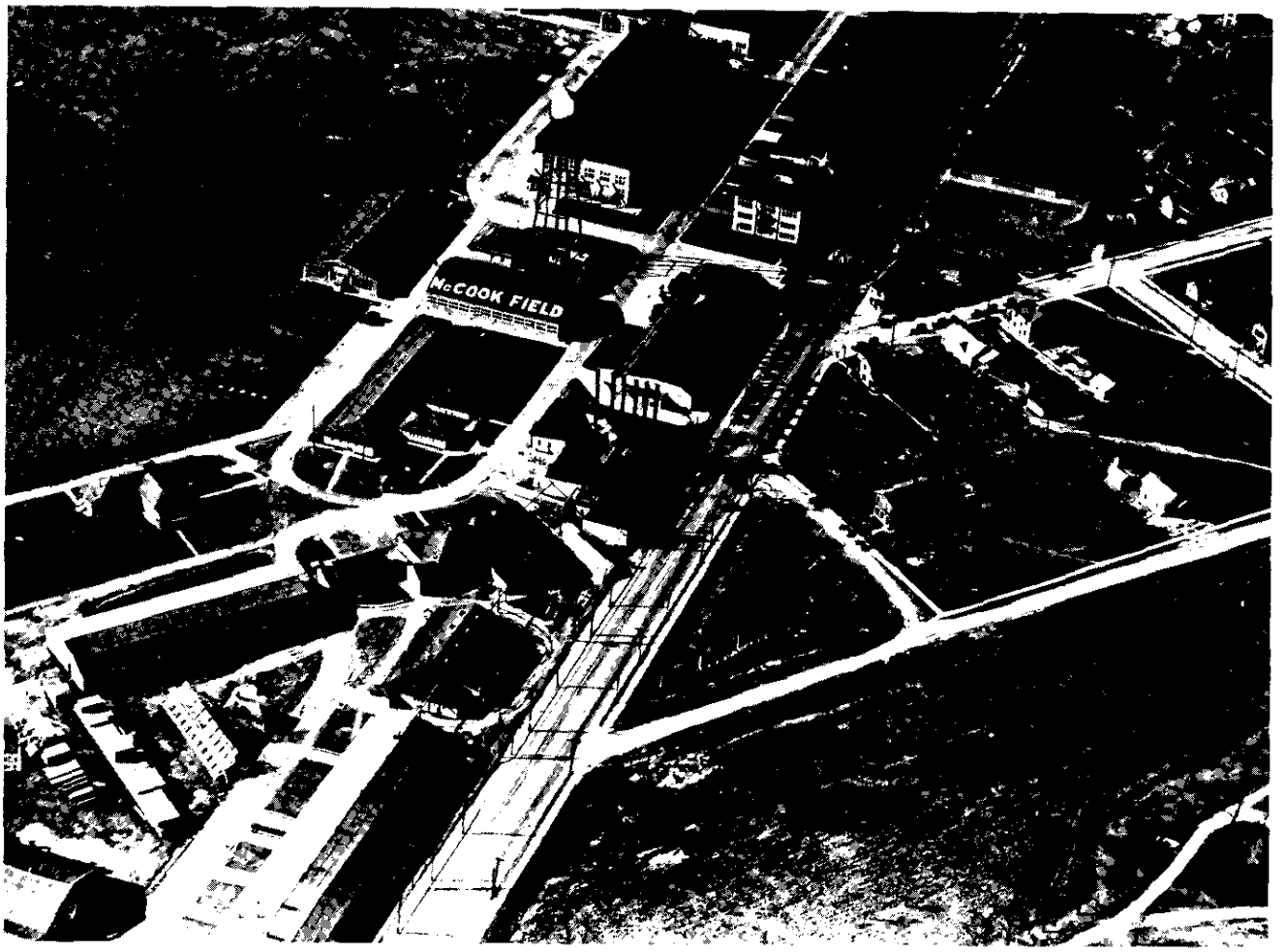
the NACA help them do so, in addition to its research and experimentation activities.

Congress appointed a second body to work specifically within the area of aircraft production. On April 12, six days after the declaration of war, the Aircraft Production Board was created to coordinate all activities of the nation's aircraft manufacturers during the massive build-up to follow. The Board was also to ensure that the resources and raw materials required by the manufacturers were available to them. The Board worked on behalf of both the War Department and the Department of the Navy, directing the completion of contracts let by both departments.

The expectations made of the Aircraft Production Board were staggering. Signal Corps records show that in the eight years prior to 1916 only 59 airplanes had been ordered and received. During 1916, 366 airplanes had been requisitioned, but only 83 had been delivered.[2] The United States Government was therefore woefully unprepared when an urgent cable was received from Premier Alexandre Ribot of France on May 26, 1917. The Premier requested 16,500 aircraft, 5,000 trained pilots, and 50,000 "mechanicians" as America's contribution to the Allied effort for the first six months of the 1918 campaign.[3] Although this goal was far greater than the U.S. ever hoped to accomplish, it did spark



Looking south onto McCook Field hangars. World War I-era airplanes had few instruments and no radios. Directional signs were often painted on flat roofs of buildings near flightlines to assist pilots. Arrows painted on hangar at upper center point in the direction of the cities named on the cross-arms: Rantoul (IL), Chicago (IL), Columbus (OH), and Toledo (OH).



Looking north on Keowee Street. Residential areas surrounding McCook Field hastened its closure and the relocation of its mission, equipment, and personnel to Wright Field in 1927. This photograph shows how civilian homes, on the right, barred expansion of the 254-acre facility.

action in the Congress. Between May 12 and July 24, 1917, President Woodrow Wilson signed a series of three bills appropriating a total of $694,250,000 for military aeronautics.[4] In a spirit of enthusiasm, a program was proposed which called for the production of 12,000 service airplanes, 4,900 primary, advanced, and fighting airplanes, and 24,000 service engines by June 30, 1918.[5]

Even these goals were out of reach. America's aeronautical engineers were not versed in mass production techniques. They knew very little about the special equipment needed to fit an airplane for military use, and even less about writing technical manufacturing specifications for mass production of that equipment. Aerial machine guns, bombing equipment, lights for night flying, aviators' clothing, compasses used in flying, and other aviation instruments had not been studied and developed to the extent they had been by the Europeans.

Moreover, the Allied nations involved in the development of military aviation were extremely secretive about their efforts. The United States, by not participating earlier in the war, had been excluded from access to these contemporary research findings. As Newton D. Baker, former Secretary of War, wrote in 1919:[6]

> Probably no military secrets were more closely guarded in Europe than developments in aircraft. As a consequence, when we entered the war, airplane construction in the United States was upon a most limited scale, and our knowledge of developments which had taken place in Europe was largely hearsay.

Attention was suddenly focused on the need for the intensive program of fundamental research and experimentation forecast earlier by the members of the National Advisory Committee for Aeronautics.

Progress at Langley, unfortunately, was painfully slow. After war was declared, the civilian contractor constructing the facilities received urgent orders to increase his work force and accelerate operations. This extra pressure only served to cause confusion and inefficiency. Construction actually slowed, and Langley was able to play only a limited role in World War I.[7]

The Navy grew impatient with these construction delays and moved its operations to experimental bases elsewhere. The Aviation Section of the Signal Corps decided to pursue a similar course.

AN ALTERNATIVE TO LANGLEY FIELD

Industrialist Edward A. Deeds was a key member of the Aircraft Production Board, and a prominent member of the Dayton business community. He was President of the Delco Company, past President of The National Cash Register Company, and a director of the Dayton Metal Products Company (which made fuses for the Russian government).[8] His interest in aviation and his understanding of the need to develop America's air power stemmed from his personal friendship with Wilbur and Orville Wright, nurtured from the early days on Huffman Prairie.

Deeds was well known in Washington circles by virtue of his service on the Munitions Standards Board. He served on the Aircraft Production Board from May 17 until August 2, 1917. On August 2, he was appointed Acting Chief of the newly-created Equipment Division of the Signal Corps. Three weeks later, on August 24, he was commissioned as a colonel in the Signal Corps Reserve and was officially promoted to the position of Chief of the Equipment Division. In order to accept a commission, Deeds relinquished his ties with private business and his financial connections, retaining only the presidency of the Board of Directors of the Miami Conservancy District (a non-partisan state-chartered public organization).[9]

The mission of the Equipment Division was to oversee the production of thousands of airplanes and engines within only a few months. The Division, under Colonel Deeds' leadership, was authorized to spend upwards of $350 million. Deeds was assigned an initial staff of 14 officers and 111 civilians, which grew, within six months, to 300 officers and 2,700 civilians.[10]

When he assumed command of the Equipment Division, Colonel Deeds found a fragmented engineering program. Pending completion of Langley Field, Signal Corps engineering projects were being conducted in a number of different locations, including Washington, Detroit, Chicago, and Buffalo.[11] Deeds was constantly frustrated by the slowness of progress in the dispersed aviation program. It was evident that production problems were exacerbated by the absence of a strong, supportive central engineering and

Col. Edward A. Deeds, Chief of the Signal Corps Equipment Division
(NCR Corporation)

experimental facility. He determined to give top priority to establishing a temporary facility, aside from Langley Field, where shops, laboratories, hangars, a flying field, offices, and other appropriate facilities could all be centralized at one location.

The area of the country most familiar to Deeds was Dayton, Ohio. He also knew a good deal about the potential for aviation development in Dayton. In 1916, Deeds had established one of the first private flying fields in the United States, South Field, at his south Dayton estate, Moraine Farm. He had equipped it with a hangar and a research laboratory, and permitted its later use as a testing ground for airplanes manufactured by the Dayton-Wright Airplane Company (which Deeds helped to establish).[12]

During 1916, Colonel Deeds had also invited Dayton inventor Charles F. Kettering and Orville Wright to inspect "a plot of 120 acres adjoining Triangle Park in the outskirts of Dayton," a tract lying between the Miami River and present-day Keowee Street, to determine its suitability for use as a public aviation field.[13] When asked if he felt the land would make a good landing field, Orville Wright allegedly replied:[14]

> This is admirably adapted for use in cross-country flights which are sure to come. The long curved stretch of land admits of landing from every direction. With coast-to-coast flying the southern route west of the Mississippi through Dayton must be taken.

Mr. Wright believed that the field, once cleared and leveled, would also be useable as a training field for light airplanes. Thus encouraged, Deeds had secured options on the land and he and Kettering purchased it in March of 1917. This site became known as North Field.

Initial leveling work at North Field was begun on March 13, 1917, but was not completed, most likely because Deeds and Kettering were almost immediately engrossed in wartime work.[15]

Thus when Colonel Deeds was asked, as Chief of the Equipment Division, to locate an appropriate site for a temporary Signal Corps experimental station, his thoughts turned first to the South Field property in Dayton. Many people, including engineers at the Equipment Division, considered Dayton to be a nearly ideal location for such a facility. It had a central location in the industrial region of the country, a centralized position with respect to the major aeronautical manufacturing agencies, and boasted a local pool of trained labor. Since time was of the essence, and since Dayton possessed facilities that were already partially developed, there seemed little need to search further.

The engineers of the Equipment Division presented a formal request to the Aircraft Production Board to locate a temporary facility in Dayton at South Field. The Aircraft Production Board appointed a committee to evaluate the site and assess its suitability. Lt. Col. Virginius E. Clark and Majors J. G. Vincent and E. J. Hull were selected to represent the Signal Corps. They were dispatched to Dayton to meet with the other committee members, Albert Kahn, an architect from Detroit, and Charles Kettering, who represented the Dayton-Wright Airplane Company.

COUNCIL OF NATIONAL DEFENSE
Aircraft Production Board
Washington

RESOLUTION passed at meeting of Board on September 27, 1917.

WHEREAS, great delays are being incurred in starting production of the army combat program because of lack of central engineering and experimental facilities, engineering now being done in Washington at the Bureau of Standards, Smithsonian Building and Old Southern Railway Building; at Mineola; New Haven; Dayton; Detroit; Chicago; and Buffalo, and

WHEREAS, a Board of Engineers, consisting of Lieutenant Colonel Clark, Major Vincent, Major Hall, and Captain Marmon, have asked that immediate steps be taken to provide for the proper facilities to meet their requirements, and

WHEREAS, after investigation they have recommended that temporary arrangements be made in Dayton where this work can be centralized, Dayton being located within a night's ride of Indianapolis, Detroit, Buffalo, Cleveland, Chicago, Pittsburgh, Washington, and the East, and

WHEREAS, a favorable location is immediately available, being in daily use by the Wright Field Company for private training and experimental work; some hangars and small repair shops already constructed, all of which can be taken over by the Government on a satisfactory basis, the field itself being particularly suitable for experimental test work, and is located within convenient distance of the Wilbur Wright Field, on which field it is possible to test out the largest and fastest machines, and

WHEREAS, this field is conveniently served by City service with water, gas, electricity, street car facilities, with an abundant supply of highly skilled labor available, and

WHEREAS, it will be perhaps considerable time before the permanent construction at Langley Field will be in effective operation, and suitable mechanics secured and housed,

NOW THEREFORE BE IT RESOLVED: that the request of the engineers be approved and the Aircraft Production Board recommend to the Chief Signal Officer that the Construction Division be instructed to provide at once such additional temporary facilities as are necessary to meet the emergency now existing.

AIRCRAFT PRODUCTION BOARD,
By

(signed)
Executive Secretary
Capt. Signal Corps, U.S.A.

Another Dayton-Wright executive, H. E. Talbott, Sr., also joined the committee for its Dayton meeting.[16]

Although it had not yet received a report from its committee in Dayton, the Aircraft Production Board adopted a resolution on September 27, 1917, approving the request of the Equipment Division engineers. The resolution went forward to Brig. Gen. George O. Squier, Chief Signal Officer, for action.

THE ESTABLISHMENT OF McCOOK FIELD

Events in the closing days of September 1917 moved swiftly. The Aircraft Production Board resolution was adopted and forwarded on September 27. On the 28th, General Squier directed a memo to the Adjutant General of the Army recommending approval for construction of temporary buildings "on former Wright Flying Field" (South Field).* Cost was set at $350,000 plus $25,000 to pay for existing buildings.[17]

Later the same day (September 28), however, Lt. Col. C. G. Edgar of the Construction Division received a telegram from J. K. Grannis, Superintendent of Construction. Grannis was in Dayton looking over the site, and stated that per decision of the evaluation committee, the location of the experimental station was to be changed "from South Field to Triangle Park."[18] Undaunted, General Squier immediately sent a second memo to the Army Adjutant General, worded identically to the first memo, except that it recommended approval for construction of temporary buildings "in Triangle Park" (North Field). Estimated cost was still $350,000.[19]

As it turned out, events in Dayton had not unfolded as smoothly as planned. The Dayton-Wright Airplane Company objected to the Equipment Division's proposal to locate its facility at South Field. Were the Equipment Division to take over use of the flying field, it would be impossible for the Dayton-Wright Company to fulfill its defense contract obligations for engineering work on the DeHavilland DH-4 and the DeHavilland DH-9.[20]

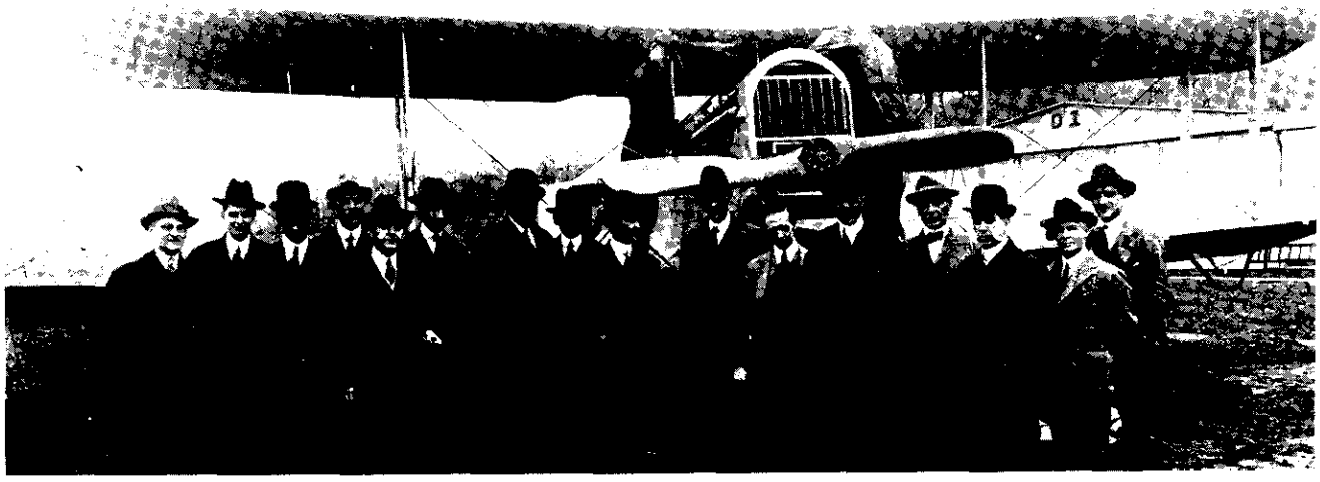
Yet Kettering and Talbott of the Dayton-Wright Company had a genuine desire to be of assistance to the war effort. Considering the urgency of the situation, they had suggested to the committee that North Field might be an equally acceptable site for the station. They pointed out that North Field was closer to the city than the Moraine site and more easily reached by municipal transportation. Its terrain better lent itself to the construction of buildings, and it had more ready access to gas, electric, and especially sewer facilities.

The committee immediately visited the North Field location. After determining that this alternate site would fit the bill, Mr. Grannis submitted his telegram to Washington. In a confirmation letter posted the same day, Grannis quoted the plans that Colonel Clark and Major Vincent had already outlined for a main building of "two stories, Workshop below, Office and Drafting room above, 60 ft wide and 600 ft long," and for an airplane assembly building "90 ft wide and 270 ft long, having two 135 ft doors, 30 ft high on the longface."[21] Colonel Deeds gave his immediate approval to the selection of the North Field site.

By the first of October all confusion had been cleared up. A memo from Deeds to Colonel Edgar, dated October 1, stated: "Chief Signal Officer on Saturday signed the paper setting aside the appropriation for the construction work at North Field in Dayton for the experimental engineering work. Mr. Craighead, the attorney from Dayton, will be here Wednesday to close up the lease."[22]

On the same date (October 1), the Aircraft Production Board adopted a resolution to name the new temporary field:[23]

> WHEREAS, the field which has been selected for temporary experimental and engineering purposes at Dayton, Ohio, has been until recently in possession of the "Fighting McCook" family for over one hundred years, and,
>
> WHEREAS, Major Daniel McCook, the head of this family and his nine sons, were all officers in the Civil War, all but one being wounded and six being killed, one of the survivors being Major General Alexander McDowell McCook, who did such distinguished service both during and after the war,
>
> THEREFORE BE IT RESOLVED: that this temporary experimental and engineering field be called the "McCook Field" in honor of the McCook family.



Unidentified officials of the Dayton-Wright Airplane Company pose in front of a DeHavilland DH-4 observation airplane at the Moraine facility, April 27, 1918. The company manufactured these British-designed airplanes for the U.S. Army Air Service and the Royal Flying Corps. *(NCR Corporation)*

*Not to be confused with Wilbur Wright Field, near Fairfield, Greene County, Ohio.

Maj. Daniel McCook *(National Archives and Records Service)*

Gen. Alexander McDowell McCook *(National Archives and Records Service)*

THE McCOOK FAMILY

The "Fighting McCooks" are often spoken of as one family, though in fact they were two families. The "Fighting McCooks" were the collective sons of two brothers, Major Daniel McCook and Dr. John McCook. The progeny of Major Daniel McCook included:

Surgeon-Major Latimer A. McCook
General George W. McCook
General Robert L. McCook
General Alexander McDowell McCook
General Daniel McCook, Jr.
General Edwin Stanton McCook
Private Charles Morris McCook
Colonel John J. McCook
Midshipman J. James McCook

Dr. John McCook's family engaged in the service included:

General Edward U. McCook
General Anson G. McCook
Chaplain Henry C. McCook
Commander Roderick S. McCook, USN
Lieutenant John J. McCook

A total of fifteen, every son of both families, were commissioned officers, except Charles, who declined a commission in the regular army, preferring to serve as a private of volunteers, and was killed in the first battle of Bull Run.

NOTE: Exact ranks of general officers (Brig. Gen., Maj. Gen., etc.) not given in original source.

Source: Daniel Joseph Ryan, *The Civil War Literature of Ohio, A Bibliography with Explanatory and Historical Notes* (Cleveland, 1911).

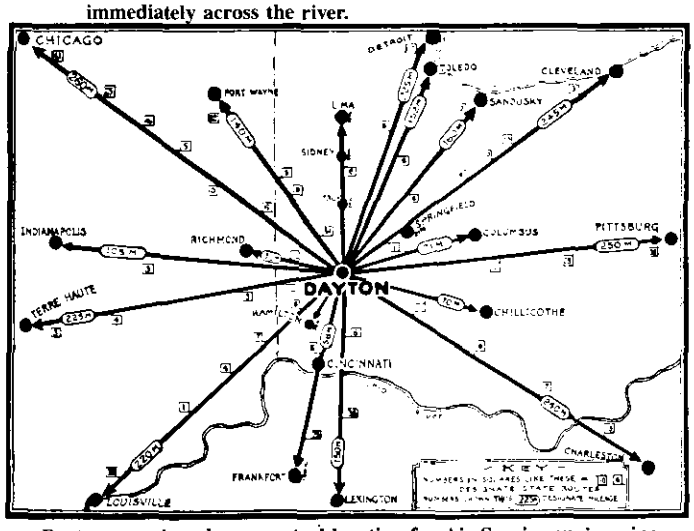
The terms of the lease agreement were worked out in Washington. Colonel Deeds first conveyed his interest in North Field to his co-owner, Mr. Charles F. Kettering. Mr. Kettering in turn conveyed the property to the Dayton Metal Products Company. An agreement was then drawn up whereby the Dayton Metal Products Company would lease the acreage to the government.* The amount of rent agreed upon for the property was $9,493.26 from October 4, 1917 to June 30, 1918, with an annual lease of $12,800 per year commencing July 1, 1918, renewable from year to year until June 30, 1921.[24]

The area occupied by McCook Field was officially measured at 254.37 acres. It was located geographically one and one-half miles from the center of the city of Dayton, bounded by Herman Avenue on the south, Keowee Street on the east, and the Miami River on the north and west. Girth of the field was 14,677 feet.[25]

On October 13, 1917, the existence of McCook Field was formalized by Signal Corps Office Memorandum No. 22. The memo announced that in order to "centralize engineering work and fix responsibility," the Engine Design Section and the Plane Design Section from Langley Field were being merged into a single organization, to be known as the Airplane Engineering Department. Its headquarters were to be located in temporary facilities at Dayton, "where its activities would be within a night's ride of Indianapolis, Detroit, Buffalo, Cleveland, Pittsburgh, Washington, and the East."[26] It was clearly stated that McCook Field was to be a temporary experimental station for engineering purposes only, and not a military post.

*Deeds had withdrawn his interest in the company at the time he went to work for the government.

Aerial view of McCook Field showing local landmarks. Dayton's financial district, then as today, was concentrated at center right, immediately across the river.

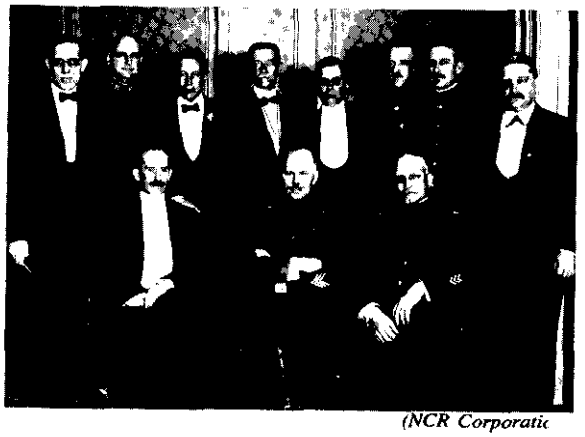


Dayton was viewed as a central location for Air Service engineering activities, being "within a night's ride of Indianapolis, Detroit, Buffalo, Cleveland, Pittsburgh, Washington, and the East."

THE CONSTRUCTION PROCESS

Although the lease for the McCook Field property was not signed until October 4, 1917, the crucial decisions had already been made and plans were underway. Mr. Albert Kahn had already finished architectural studies and drawings. Contracts for construction of the first group of buildings at McCook were awarded two days before the signing of the lease, on October 2, to the Dayton Lumber and Manufacturing Company.[27] To expedite matters, Superintendent Grannis was authorized by the Construction Division to purchase all necessary materials from local sources.

The first order of business before buildings could be erected and the runway laid was to prepare the land. Some work had already been done. When Deeds and Kettering began developing the site as a public flying field, they had ordered preliminary grading, including removal of an old



(NCR Corporatic

TESTIMONIAL DINNER FOR COL. EDWARD DEEDS

Distinguished Dayton aviation supporters and leaders of the Army Air Service attended a testimonial dinner at the stately Miami Hotel in Dayton on February 22, 1919, honoring Col. Edward A. Deeds. As Chief of the Signal Corps Equipment Division during World War I, Deeds was instrumental in establishing Wilbur Wright Field and McCook Field. According to Deeds' biographer, no less than 500 men gathered on this auspicious occasion "in a demonstration of regard never before seen in this city."

Prominent guests at the dinner were (front row, l to r): aviation pioneer Orville Wright; Maj. Gen. George O. Squier, Chief Signal Officer; and Colonel Deeds; (back row, l to r): Charles F. Kettering, inventor of the Army's first pilotless aircraft with preset controls and master of ceremonies for the dinner; Lt. Harold H. Emmons, Chief of Liberty Engine Production, Equipment Division; Lt. Col. Leonard S. Horner, Chief of Ordnance and Instruments Production, Equipment Division; Harold E. Talbott, co-founder of the Dayton-Wright Airplane Company; Walter S. Kidder, Dayton financier; Col. Thurman H. Bane, Commanding Officer, McCook Field; Col. M. F. Davis, Hq Army Air Service; and Dr. S. W. Stratton, Director, U.S. Bureau of Standards.

river embankment. The experimental flying anticipated at McCook, however, required that the field be graded absolutely flat, rolled, and sodded.[28]

Grading problems were complicated by inadequate site drainage. The natural topography of the land constituted the primary difficulty, compounded by the fact that all of the storm sewers surrounding the field were too high for drainage. A French drain had to be constructed to handle storm drainage, and sink pumps had to be installed in the gravel stratum underlying the field to drain particularly difficult sections.[29]

According to Capt. H. H. Blee in his "History of Organization and Activities of Airplane Engineering Division," actual construction work was started on October 10, 1917, "and pushed ahead with astonishing rapidity. Large forces of workmen were employed working in shifts day and night, seven days a week."[30] Construction was carried out by two shifts of men daily, with a total of 900 men in both shifts. This pace continued for 24 working days. At that time the first building was sufficiently complete to allow the wood and metal shops to install some machinery and begin work. Subsequently, 100 men were employed for an additional 28 days in finishing the building.

Construction of the Final Assembly building was begun on October 25. It also used two shifts of men, totalling 400 in both shifts, for 35 working days. Final work was completed in 60 more days with a crew of 120 men.[31]

The initial buildings erected at McCook Field in the fall of 1917 were the engineering and shops building, the final assembly building, main hangar, garage, barracks, mess hall, cafeteria, transformer house, and engine test stands. Two existing structures at the field were used to house the dynamometer laboratory and the engine assembly building. A central heating plant was completed and provided heat to nearly all buildings on station.[32]

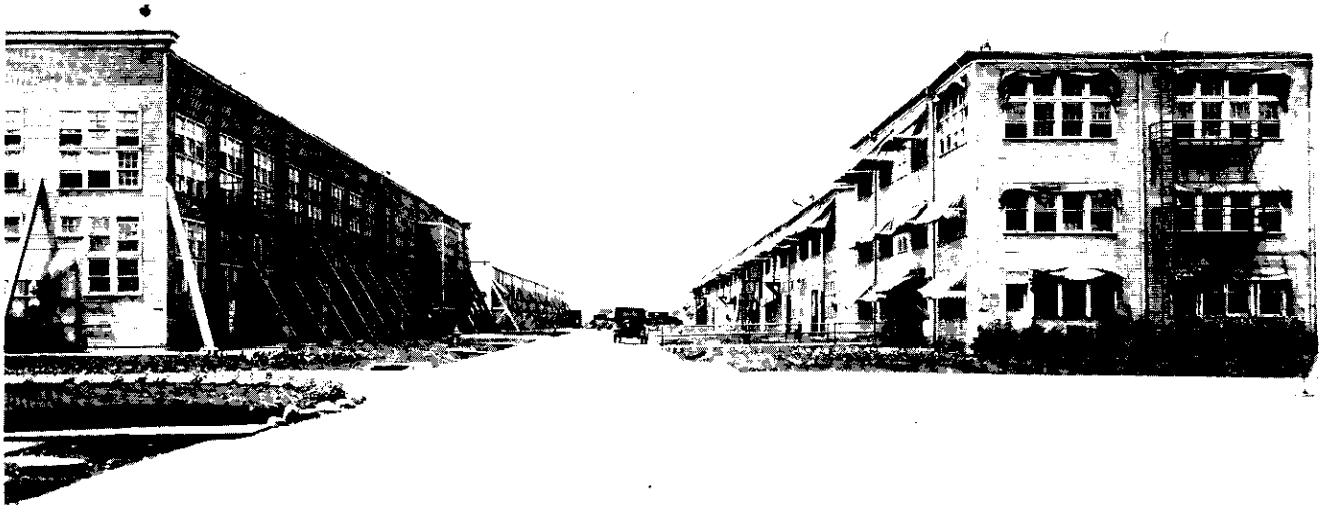
Because many of these buildings were designed as "temporary construction," special precautions were taken to provide fire protection to them. Modern fire equipment was provided on station, and a stand-by fire protection system was established using the Dayton water mains.[33]

The runway at McCook Field was a definite improvement over the bumpy grass strips to which most pilots of the day were accustomed. The special macadam-and-cinder runway was 1,000 feet long and 100 feet wide, to allow the best possible conditions for flight testing. The runway had to be laid across the short expanse of the field, however, in order to take advantage of the prevailing winds. This resulted in extremely short approach and take-off distances due to surrounding obstacles (trees, the river, etc.). It also led to the coining of McCook Field's motto, "This Field Is Small—Use It All," which was emblazoned on the front of one of the hangars. (As aircraft grew in size and power, this constraint became one of the major factors that forced McCook activities to relocate to Wright Field in 1927.) The macadamized runway was the principal runway used, especially under poor weather conditions or when the ground was soggy, but aircraft also made use of other portions of the flying field that were heavily rolled and sodded.

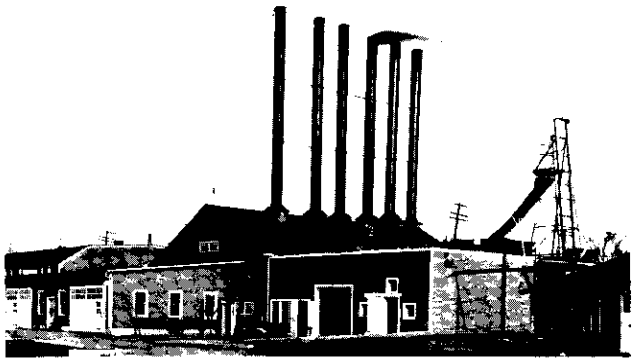
A high fence with lookout towers encircled the installation. Once research and experimentation activities commenced, military armed guards were posted 24 hours a day "in order to protect activities at McCook from the machinations of spies."[34]

OPERATIONS BEGIN

As stated earlier, McCook Field was created as the main facility of the Airplane Engineering Department, a consolidation of the Plane Design Section and the Engine Design Section from Langley Field. Lt. Col. Virginius E. Clark of the Plane Design Section was designated Officer in Charge of the new Department and thus became the first Commanding Officer of McCook Field. Maj. Jesse G. Vincent, Chief



Main Street, McCook Field, 1918



The central heating plant provided steam for buildings on McCook Field. About 5,000 tons of coal were burned annually. *(U.S. Air Force Museum)*

The motto emblazoned on McCook's main hangar cautioned all pilots to plan ahead. At 100 ft in width and 1,000 ft in length, the macadamized runway was barely adequate to accommodate the successively heavier and more powerful Air Service airplanes designed by engineers at McCook. *(Dayton and Montgomery County Public Library)*

Taxiway to the McCook Field runway (center right), spring 1918 *(AFWAL Technical Library)*

of the Engine Design Section, was named Executive Officer.

As Executive Officer, Major Vincent immediately went to Dayton to begin transfer arrangements for those activities relocating to McCook.[35] In late October, Lt. H. E. Blood (Engine Design Section) joined Major Vincent in Dayton, bringing with him the first contingent of personnel and equipment. Because construction at the field was only in its initial stages, the engineering personnel set up temporary headquarters in downtown Dayton, leasing two floors of the Lindsey Building at 25 South Main Street for department offices.[36]

On November 5, 1917, Chief Signal Officer Squier signed Office Memorandum 53 assigning functional responsibility to the Airplane Engineering Department at McCook for all technical and experimental work previously conducted at Langley.[37] On November 22, General Squier further specified the division of work between Langley and the Airplane Engineering Department. Responsibility for engine and plane development, installation of cameras on experimental airplanes, and work on the synchronization of machine guns was assigned to McCook. Work to be continued at Langley under other commands included instruction and experimentation in bombing, photography, radio, telegraphy, and all demonstrations of foreign airplanes.[38]

The first troops assigned to McCook arrived in Dayton on November 14, 1917.[39] The 246th Aero Squadron from Kelly Field, Texas, consisted of 90 men and was stationed at McCook to perform both guard duty and fire patrol. The squadron's arrival gave a certain military air to the new engineering and experimentation facility. A letter from McCook Field in 1918 indicates that a number of these troops spent their first year at the new field in tents until sufficient barracks could be constructed. The letter noted that permanent indoor living space "was badly needed on account of the sickness among the soldiers at McCook Field."[40]

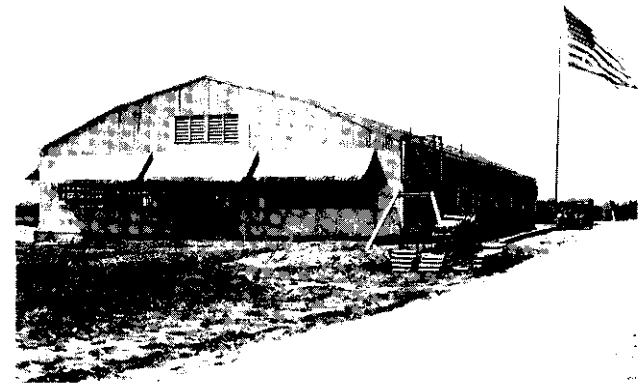
By the first week in December 1917, enough buildings at McCook had been completed to allow key personnel of the Airplane Engineering Department to move from downtown Dayton to the new installation. On December 4, 1917, operations officially commenced at McCook.[41]

There was not room at the field to accommodate all of the employees from the downtown location, and some sections continued their work at the Lindsey Building in Dayton. In fact, for the duration of the war there was always more staff assigned to McCook than there was office space to house them, and the Signal Corps, as well as the Army Air Service, was forced to lease office space in several Dayton structures. The Dayton Savings Building at 25 North Main Street, the Mutual Home Building at 40 North Main Street, and the Air Service Building (later known as the Knott Building) were all utilized to make up for the lack of space at McCook.

One month after McCook opened, Signal Corps Office Memorandum 11 was issued, transferring full responsibility to McCook for the design of all airplanes and accessories.[42] This resolved a good deal of confusion that had existed since America entered the war in April 1917. At that time, responsibility for aircraft design and production was fragmented among a variety of organizations. The process of drawing diverse industries together, compounded by the haste and anxieties of wartime, had taken a full nine months. The end result, however, was an efficient operation established at McCook Field. For the remaining 10 months of the war "a rare combination of men, money, and a sense of national urgency created, almost overnight, the single most influential agency in the early years of American air power."[43] As one aviation historian has noted, "In many respects it [McCook Field] was the single most influential organization in the history of American aviation, for it not only provided a start for some of the most talented men in the industry, but it set standards which they have continued to live up to."[44]

McCook Field, from its very beginnings, was different from all other World War I Army installations in that it was essentially a business institution rather than a military post. McCook was administered in the same manner as the Signal Corps aviation general supply depots and was exempted, by Army Regulation No. 191, from control by the Secretary of War. All civilian employees at the field came under Schedule A of the Civil Service, which exempted them from competitive examinations.[45] This arrangement had a profound effect on the functioning and business-like operation of the installation, and freed it to a large extent from the complexities of military inter-agency bureaucracy.

The fact that McCook Field functioned, by and large, in a fashion similar to private industry was due not only to its independent status, but also to the nature of the employees who administered the installation and directed its principal research. The critical shortage of aeronautical engineers in the military had forced the Signal Corps to seek production and engineering expertise in the private sector. Men like Deeds with experience in industry—particularly the automotive industry—were recruited, and in some cases commissioned, to lend vital support to the aircraft development program.

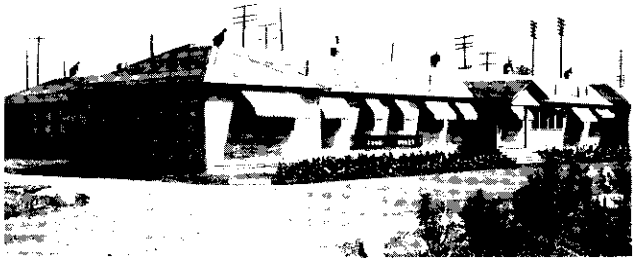


Administration building which housed the offices of the Chief of the Airplane Engineering Division, the Assistant Chief, and the Adjutant, as well as the Divisional Planning Section.

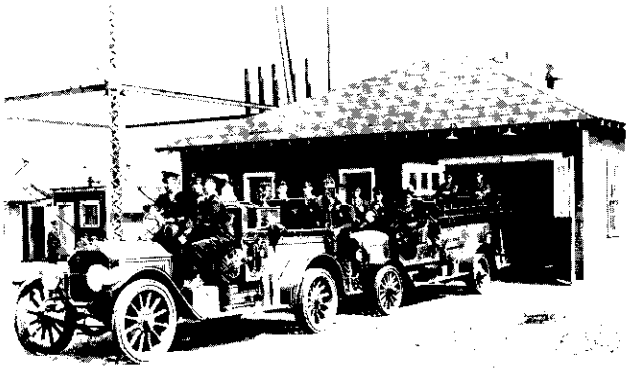
Air Service officers assigned to McCook Field in 1919 included many who went on to distinguish themselves in Air Force history. Among those pictured here are: Col. Thurman Bane, Lt. Muir S. Fairchild, Lt. John Macready, Lt. Leigh Wade, Lt. Harold Harris, Lt. Albert Hegenberger, and Capt. George Kenney.

For example, Maj. Jesse G. Vincent, Executive Officer at McCook, was a former executive of the Packard Motor Car Company. E. J. Hall, who assisted in reorganization of the Engine Design Section, came to the Signal Corps from the Hall-Scott Motor Car Company, and drew with him experts from such companies as Cadillac, Dodge, Packard, Durant, and Pierce.[46] The membership of the Aircraft Production Board itself included men like Sidney D. Waldon, a former Vice President of the Packard Motor Car Company, Howard E. Coffin of the Hudson Motor Car Company, and Robert L. Montgomery of the J. F. Brill Company of Philadelphia. Other men applied their industrial experience to supervisory positions in the various shops at McCook. Mr. W. J. Rueger, in charge of the Shop Order Department in 1918, was an 11-year veteran of the Chalmers Motor Co. production department. R. J. Myers, head of the Wood Shop, brought with him extensive experience with the Curtiss Airplane Corporation and the U.S. Navy Yards. H. L. Bill of the Factory Department was employed previously at the Springfield Body Corporation, the Chalmers Motor Co., and Hayes Manufacturing, all of Detroit. C. F. Simmons, Factory Manager, held previous employment with the American Blower Co., Detroit Gear and Machine, and the King Motor Car Co.[47] The contributions which these men made are perhaps no better exemplified than in the development of the Liberty engine, the productive genius for which was provided by Vincent and Hall.[48]

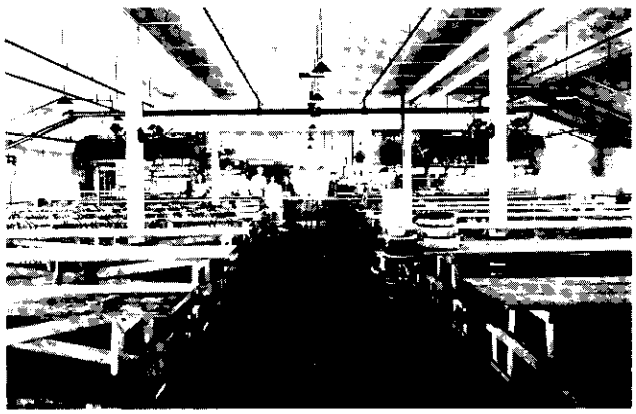
During its early years, McCook Field was a meeting ground for the foremost engineers of aviation-related industries, both from the U.S. and abroad.[49] Among other noted accomplishments, these men solved the many problems associated with adapting existing European aircraft designs to American mass production techniques.*



The McCook Field hospital provided complete medical treatment for military members and emergency treatment for injured civilian employees.



McCook Field fire department in full dress. A combined guard and fire department of about 35 civilian employees protected the installation in the years after World War I. Note the solid rubber tires and wheels with wooden spokes on the World War I-vintage trucks.



The McCook Field cafeteria served meals daily for the convenience of civilian employees.

*Chapter VI details many of the specific engineering developments of this period.

McCook Field experienced rapid growth during 1918. This further crowded conditions in the already limited space. Sketchy reports from the Factory Branch in 1918 indicate that at least one barrack, a sand test building, a mess hall, a hospital, and hangars to house foreign and exhibition airplanes were constructed that year. The lumber storage facility and cafeteria were relocated, and the macadam-and-cinder runway was extended to a total length of 1,340 feet.[50] An auxiliary heating plant was completed near the end of the field that, together with the central heating plant, supplied all buildings with steam heat.[51] In all, a total of 47 buildings occupied 371,914 square feet. By the end of the war in November 1918, the government had more than $2,352,000 invested in the buildings, machinery, and equipment located at McCook Field proper.[52]

Additional real estate was leased during and immediately after the war to support McCook operations. Leases included 212 lots from the City of Dayton for an annual rent of $3,200; 60 lots from the Dayton Savings and Trust Company for $1,461.50 per year; and 14 lots from individual citizens for approximately $561.00 per year, total.[53] (By mid-1919, nearly all operations had been reduced in size and centralized at the field.)

There were two military support units at McCook during 1918. The 246th Aero Squadron, previously mentioned, had arrived in November 1917. On January 9, 1918, it was redesignated the 807th Aero Squadron. On July 1, 1918, the 881st Aero Squadron was organized at McCook. On July 12th, the squadrons were further designated as Squadron A (807th) and Squadron B (881st). On August 1, 1918, the two squadrons were merged into "Detachment No. 10, A.S.A.P."[54]

Organizational changes within the Air Service were frequent in 1918 to conform to changing mission responsibilities. It was a tribute to the dedicated personnel at McCook Field that work continued in spite of the frequent disruptions.

In January 1918, the Signal Corps created the Department of Production Engineering to work in concert with the Airplane Engineering Department, providing the engineering information necessary for the manufacture of airplanes, engines, and accessories. The new department moved to Dayton so that the two functions would be in close proximity. There was insufficient space in the Lindsey Building, however, to accommodate the new department. On April 15, 1918, the Department of Production Engineering was transferred to Washington, although it retained its mandate to support the Airplane Engineering Department.[55]

Earlier reference was made to the monumental problems the U.S. faced in gearing up its aircraft production program in the spring of 1918. Delays in the program soon provided the impetus for a major restructuring of the aeronautical sections of the War Department. The Overman Act established authority for this reorganization on May 20, 1918. The Act gave the President full discretionary authority to redistribute functions of top government agencies for the duration of the war, plus an additional six months. President Wilson, in conjunction with ranking War Depart-

General John J. Pershing inspects McCook Field, December 16, 1919, escorted by McCook Field Commander, Col. Thurman Bane.

NOTICE

December 15, 1919.

TO ALL EMPLOYEES:

1. General Pershing and his staff will make an inspection of McCook Field, Tuesday, December 16, at 10:00 A.M.

2. Upon completion of the inspection, all members of this Division will be given an opportunity to see the General. At three long blasts of the whistle, employees will assemble on Gate Street (between the flag pole and the main gate) and remain until General Pershing leaves the field, when they will return to their work without delay.

3. All employees are requested to go about their duties as usual, and not loiter about the field or leave their work until the signal is given.

By order of Colonel Bane:

LOUIS S. CONNELLY,
1st Lt., A.S.P.,
Adjutant.

Civilian guards at the main gate of McCook Field

Brig. Gen. William Mitchell, Assistant Chief of the Air Service, confers with Col. Thurman Bane, Post Commander, during one of his frequent inspection trips to McCook Field, 1919. *(NCR Corporation)*

ment officials, created two new branches of the War Department to assume, respectively, the operations and equipment phases of the aeronautical program. A Division of Military Aeronautics was designated to assume all aeronautical functions previously assigned to the Office of the Chief Signal Officer. A Bureau of Aircraft Production was established to assume the duties previously assigned to the Equipment Division and was placed under direct supervision of the Secretary of War (thereby entirely independent of the Signal Corps). On May 24, 1918, the War Department officially recognized the Division of Military Aeronautics and the Bureau of Aircraft Production as constituting the Air Service.[56]

Within the Bureau of Aircraft Production, the Engineering Production Department and the Airplane Engineering Department were frequently at odds with each other. These two departments (the one located at McCook and the other in Washington), had been established as separate units, and had a tendency to work in isolation without properly consulting each other.[57] As a result, on June 24, 1918, a special division of the Bureau of Aircraft Production was created to centralize and coordinate their efforts. General Memorandum 23 combined the two departments with the Science and Research Department and the Technical Information Department, to form a new Engineering and Research Division within the Bureau of Aircraft Production.[58] To further stimulate cooperation, the Production Engineering Department was once more relocated to Dayton. This time, it was housed in the Air Service Building, and remained there for the duration of the war.

On August 1, 1918, the two agencies created by President Wilson, the Bureau of Aircraft Production and the Division of Military Aeronautics, which had not functioned successfully as separate entities, were also merged. The head of the new organization was designated Director of the Air Service, and Assistant Secretary of War. On August 27, the position was filled by the appointment of John D. Ryan, prominent banker, President of the Anaconda Copper Company, and former chairman of the Aircraft Board (which succeeded the Aircraft Production Board).[59]

On August 31, a further refinement was effected when the Airplane Engineering Department and the Production Engineering Department were withdrawn from control of the Bureau of Aircraft Production and merged to become a separate Airplane Engineering Division of the new Army Air Service. This action was made official with the issuance of Bureau of Aircraft Production General Memorandum No. 166, dated September 13, 1918, which laid responsibility for "complete supervision of all engineering for the Bureau of Aircraft Production" upon the new division.[60] Lt. Col. J. G. Vincent became Chief of Engineering in charge of the combined division, with headquarters in the Air Service Building in Dayton. The title "Engineering Division, Air Service," became the permanent designation for the organization at McCook Field and was retained until 1926.

On September 18, 1918, the Bureau of Aircraft Production directed that the Ordnance Department and the Armament Section of the Ordnance Department should also move to McCook in order that the ordnance engineers and draftsmen could work directly with the aircraft engineers in designing and installing bomb sights and bomb racks. The Armament Section left Washington for Dayton on October 3, under the command of Maj. Harry D. Weed. This change represented the last addition to the experimental facilities at McCook prior to the November 11, 1918 Armistice.[61]

In addition to the complications caused by these organizational changes, McCook was under the command of four

McCook Field Adjutant's Office (base administration), about 1920

McCOOK FIELD COMMANDERS

Lt. Col. Virginius E. Clark	Oct. 29, 1917-Jan. 24, 1918
Maj. Frederick T. Dickman	Jan. 25, 1918-Feb. 5, 1918
Lt. Col. J. G. Vincent	Feb. 6, 1918-Nov. 24, 1918
Col. Thurman H. Bane	Nov. 25, 1918-Jan. 1923
Maj. L. W. McIntosh	Jan. 1923-Jun. 1923
Maj. J. F. Curry	Jul. 1923-Mar. 1927

different commanders during 1918. Lt. Col. Virginius E. Clark was relieved as Commander on January 24, 1918, by Maj. Frederick T. Dickman. This enabled Colonel Clark to devote his entire energies to the development of original airplane designs. Lt. Col. J. G. Vincent, Chief of Engineering, had in the meantime suggested an entirely new organization for the Airplane Engineering Department aimed at improving operations. Colonel Vincent's plan was approved by the Equipment Division on February 6, 1918, and the resulting reorganization of the Airplane Engineering Department placed Vincent in charge effective that date. He served as Commander until November 24, 1918, when Col. Thurman H. Bane, the first post-war Commander of McCook, was appointed as Chief of the Airplane Engineering Division.

Despite these many changes, the engineering work at McCook Field continued unabated. Historian Edward O. Purtee states, "Before the end of hostilities the Bureau of Aircraft Production had succeeded in accelerating airplane production to the extent of producing more than 11,700 airplanes and 32,400 engines in America."[62] The record achieved by the aeronautical engineers associated with McCook Field became known around the world as the standard of excellence.

McCOOK AFTER THE WAR

Colonel Bane actually assumed two hats when he became the first post-war Commander of McCook Field. In addition to his new position as Chief of the Airplane Engineering Division, he also continued to serve as Chief of the Technical Section of the Division of Military Aeronautics, a position he had held since August 1918. The Engineering Division at McCook Field after the war was a consolidation of the Airplane Engineering Division, the Technical Section of the Division of Military Aeronautics, and the Testing Squadron at Wilbur Wright Field.[63]

It became Colonel Bane's job to combine the work of the Bureau of Aircraft Production and the Division of Military Aeronautics on a permanent peacetime basis. He merged the facilities and personnel of the two units, consisting of 2,300 scientists, engineers, technicians, and support officers assigned to 19 sections and 75 branches, into an efficient organization. Colonel Bane's vision was instrumental in seeing McCook Field through the difficult years of the post-war period, fraught with inadequate funding and compounded by apathy toward the goals of the Engineering

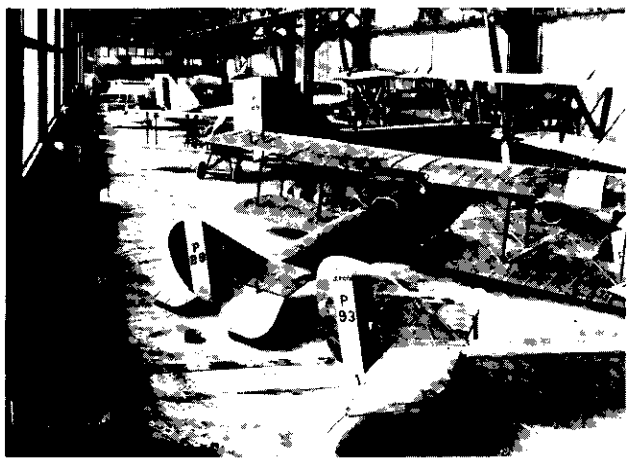
Col. Thurman H. Bane, McCook Field Commanding Officer and Commandant of the Air Service Engineering School (1919-1923) *(U.S. Air Force Museum)*

"Entire personnel of the Engineering Division of the Air Service, McCook Field, Dayton, Ohio," 1920 (approximately 50 officers and 1,200 civilian employees)

Division. It was through his personal efforts that the Division was able to accomplish its mission in a relatively unfettered fashion.*

In May of 1919, the responsibilities of the Engineering Division expanded to encompass all of the aircraft experimental activities previously conducted at Langley Field in Virginia.[64] This further complicated the problem of crowded facilities which McCook already faced. With this centralization, however, McCook became the nerve center of the aircraft and engineering activities of the Air Service.

It was at McCook that virtually all significant developments took place. These major engineering developments and achievements included controllable and reversible pitch propellers, aircraft engine superchargers, bullet-proof and leak-proof gasoline tanks, the radio beam, a non-magnetic aircraft clock, an ambulance airplane, the air-cooled radial engine, mapping and night observation cameras, and the free-fall parachute. Also developed at McCook and refined at Wilbur Wright Field were night flying techniques and a model airway which was the forerunner of today's network of continental and intercontinental commercial air routes.



Main hangar at McCook Field, April 5, 1920. Tail number P93 belongs to a DeHavilland DH-4 observation airplane. P29 is a Curtiss JN-4H Jenny trainer. On the other side of the trainer is GAX P129, a three-winged experimental armored ground attack airplane powered by two pusher engines. *(Wright State University Archives)*

The story of these developments is told in a separate chapter dedicated to the technological advancements in aviation made at both McCook and Wright Fields, Chapter VI, Developing Air Power 1917-1951.

Manpower and funds to carry out the Engineering Division's mission after World War I were both in ever-dwindling quantity. At the end of the war, the population at McCook totalled 58 officers, 267 enlisted men, and 1,915 civilians.[65] These wartime numbers were soon scaled down, though, and from 1920 to 1926 the work of the Engineering Division was normally carried out by a personnel force of about 50 officers and from 1,100 to 1,500 civilians.[66]

Additionally, in 1919 the Air Service appropriations were severely cut to $25 million from the $55 million requested.[67] The Engineering Division's share of this budget was proportionately small, and continued to decline over the next several years, from $5 million in 1921, to $3 million in 1924, reaching low ebb in 1927.[68] As one historian has stated, however:[69]

> Ironically, the lean years . . . produced the greatest achievements at McCook Field, for during the mid-1920s the scientists and engineers of the Engineering Division had little to work with but their own genius, and it was this ingenuity alone that kept the Air Service from becoming completely obsolete.

CONTROVERSY WITH THE AIRCRAFT INDUSTRY

The greatest challenge faced by the Engineering Division was its mandate to act as a clearinghouse between the Air Service and the aircraft industry. If the Air Service had been hamstrung by lack of appropriations, the American aircraft industry had been similarly crippled by the cessation of wartime production. European nations, after the war, had adopted programs to re-channel their aviation momentum into commerce and well-organized national defense systems. No such plan operated in the United States, however, to soften the blow sustained by the American aircraft industry or to develop alternative solutions.[70]

*The mission of the Engineering Division is carried on today by the Air Force Systems Command, whose major Wright-Patterson AFB components are the Aeronautical Systems Division (including the Air Force Wright Aeronautical Laboratories and the 4950th Test Wing), and the Foreign Technology Division.

The Engineering Division at McCook acted as a middleman, so to speak, interpreting Army specifications and standards for manufacturers, testing products when they were completed, and suggesting improvements if products did not fully meet specifications. Members of the aircraft industry, in dire economic straits, complained that the operations at McCook Field infringed upon their development rights by concentrating control of all military aircraft design and testing into one organization. They feared that the Air Service was in essence forming a general "brain trust" at McCook, composed of government employees, to perform all of the work connected with design of airplanes and aeronautical equipment. They demanded that the Army transfer some of the Engineering Division's work to private enterprise.[71]

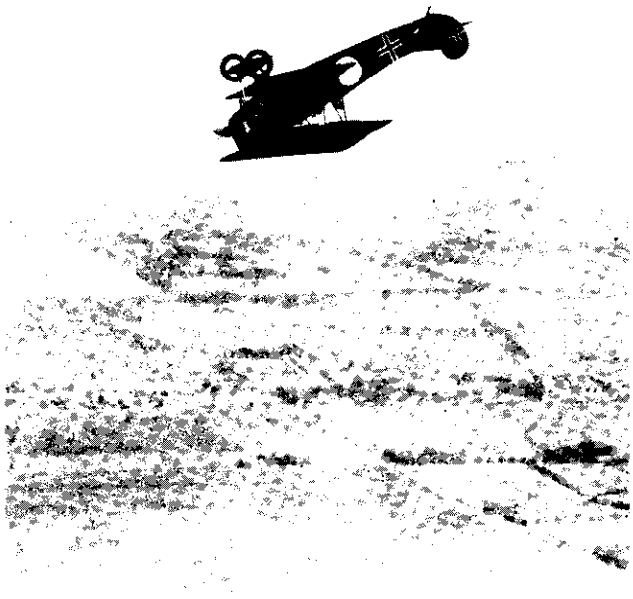
The battle that ensued between McCook and the aircraft industry, as both fought for their very existence, caused severe cutbacks in the work at McCook. Few additional airplanes were being developed for the Air Service, and there was constant pressure in the post-war period for the Air Service to "make do" with equipment and supplies left over from the war. At best, this surplus equipment was obsolete, and thus hampered experimental development; at worst, it jeopardized the safety of all who worked with it.

The accusations and complaints registered by the aircraft industry finally provoked action. An American aviation mission was dispatched to Europe in the spring of 1919 to investigate progress being made there in aircraft production. The report of this mission ultimately sparked a measure of increased government support for the U.S. aircraft industry aimed at encouraging development of civil aeronautics.[72]

IN A STATE OF READINESS

On December 1, 1921, newly-appointed Chief of the Air Service Maj. Gen. Mason M. Patrick directed basic organizational changes in the Engineering Division at McCook Field. Eight sections were established reflecting the new alignment of responsibilities: Planning, Technical, Factory, Flying, Procurement, Supply, Patents, and Military.[73]

General Patrick had assumed command of the Air Service on October 15, 1921, following Maj. Gen. Charles T. Menoher, and was a more direct advocate of engineering development than his predecessor. General Patrick had definite ideas about the job that the Engineering Division should be accomplishing. He purportedly defined the Division's duties in one sentence: "To have in readiness for immediate production and service, the most advanced types of aircraft, engines, armament and other miscellaneous equipment."[74] General Patrick initiated operation of a "Production Model Room" at McCook, which contained models of actual equipment necessary to outfit a fighting air force. Each model was complete with drawings, specifications, parts lists, and bills of materials necessary to begin production of the item in quantity, within twenty-four hours if necessary.



A captured Fokker biplane still bears its German Air Force cross insignia as it flies over McCook Field. Many foreign aircraft, both from Allied and enemy nations, were tested at McCook. *(U.S. Air Force Museum)*

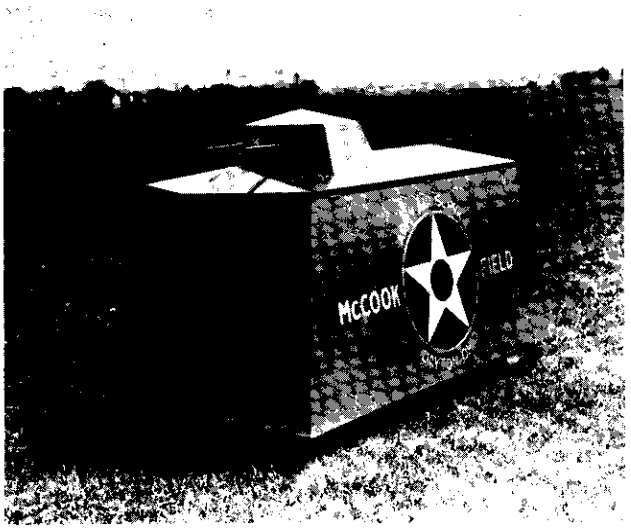
The U.S. Air Force Museum had its beginnings at McCook Field in September 1923. Originally, collections consisted of World War I Allied and enemy aircraft and equipment no longer used in testing. This open storage display contains tachometers, thermometers, statoscopes, and turn indicators. The Army Aeronautical Museum, as it was then known, moved with other organizations to Wright Field in 1927. *(U.S. Air Force Museum)*

In a typical exercise, General Patrick would send a "problem" message to Colonel Bane at the Engineering Division such as, "Congress meets on the 20th for the purpose of declaring war—I will visit McCook on the 18th to review items ready for production." Materials in the Production Model Room were constantly maintained in three classifications: "Ready for Immediate Production," "Experimental," or "Obsolete." On his visits to McCook, General Patrick could thus easily review samples of fully developed products and see experimental items being tested in the field. The goal of the Air Service was to preclude, at all costs, the problems of unpreparedness that the nation had experienced in World War I, so that there would never again be the need to ask, "What shall we build? How shall we build it?"[75]

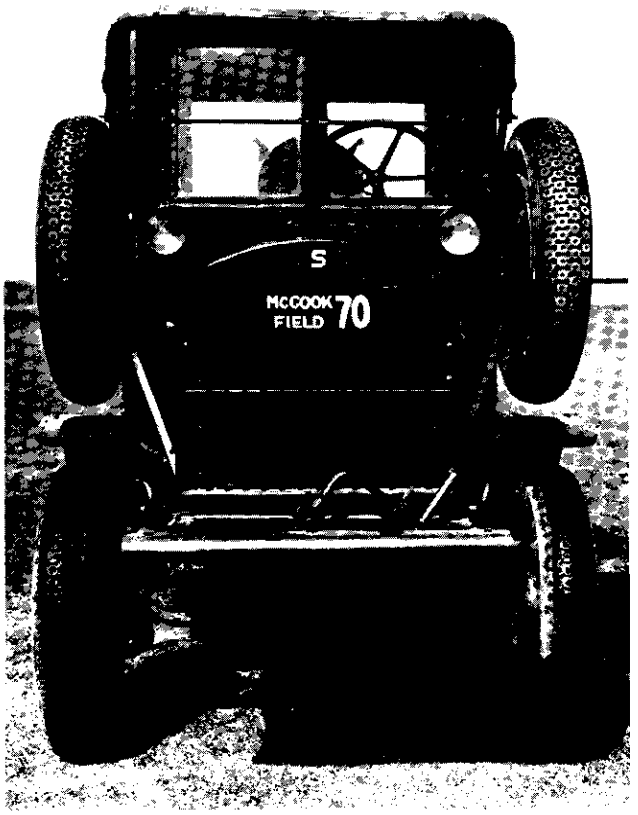
THE AIR SERVICE ENGINEERING SCHOOL

One of the most important corollaries of the work at McCook was the education of a solid corps of Air Service officers to manage new Air Service programs resulting from the tremendous growth in aeronautical engineering and aviation technology. In November 1918, Colonel Bane, as Chief of the Technical Section of the Division of Military Aeronautics, wrote to the director of the Division in Washington requesting permission to establish an Air Service School of Application at McCook. He proposed a school similar to the Ordnance School of Application at Sandy Hook Proving Ground, New York, with which he had previously been associated. The stated purpose for this school was to provide "proper technical training" to permanent officers of the Air Service. All officers in command of air stations, Bane asserted, should receive extensive technical training in order to more effectively and efficiently direct their operations—training in such fields as maintenance of airplanes and motors, machine shop installation, shop management and cost accounting, power plant installation and operation, laboratory testing of fuels and raw materials, and principles of elementary aerodynamics.[76] The best remedy for the Air Service's lack of technical experts, to Bane's way of thinking, was for the Air Service to train its own, and the logical place to accomplish this was at McCook.

General Patrick pilots his special DH-4L airplane on an inspection trip to McCook Field. His copilot (rear) and the young lady are not identified.



This radio-controlled "tank" was a popular novelty during a 1923 airshow and exhibition at McCook.



Light truck used to transport aerial bombs from storage igloos to the flightline, about 1925. Spare wheels were mounted on front of the truck. Note the hand crank to start the engine.

Although formal approval had not yet been received, Colonel Bane began drawing a teaching staff together. Among the first was Lt. Edwin E. Aldrin, who had served on the staff of the aeronautical engineering school for Army and Navy pilots at the Massachusetts Institute of Technology during World War I. In February 1919, Aldrin was transferred to McCook along with other former personnel from the school. Bane capitalized upon his experience, appointing him Chief of the School Section. As Lieutenant Aldrin put it, he "had the job of starting a school from nothing."[77]

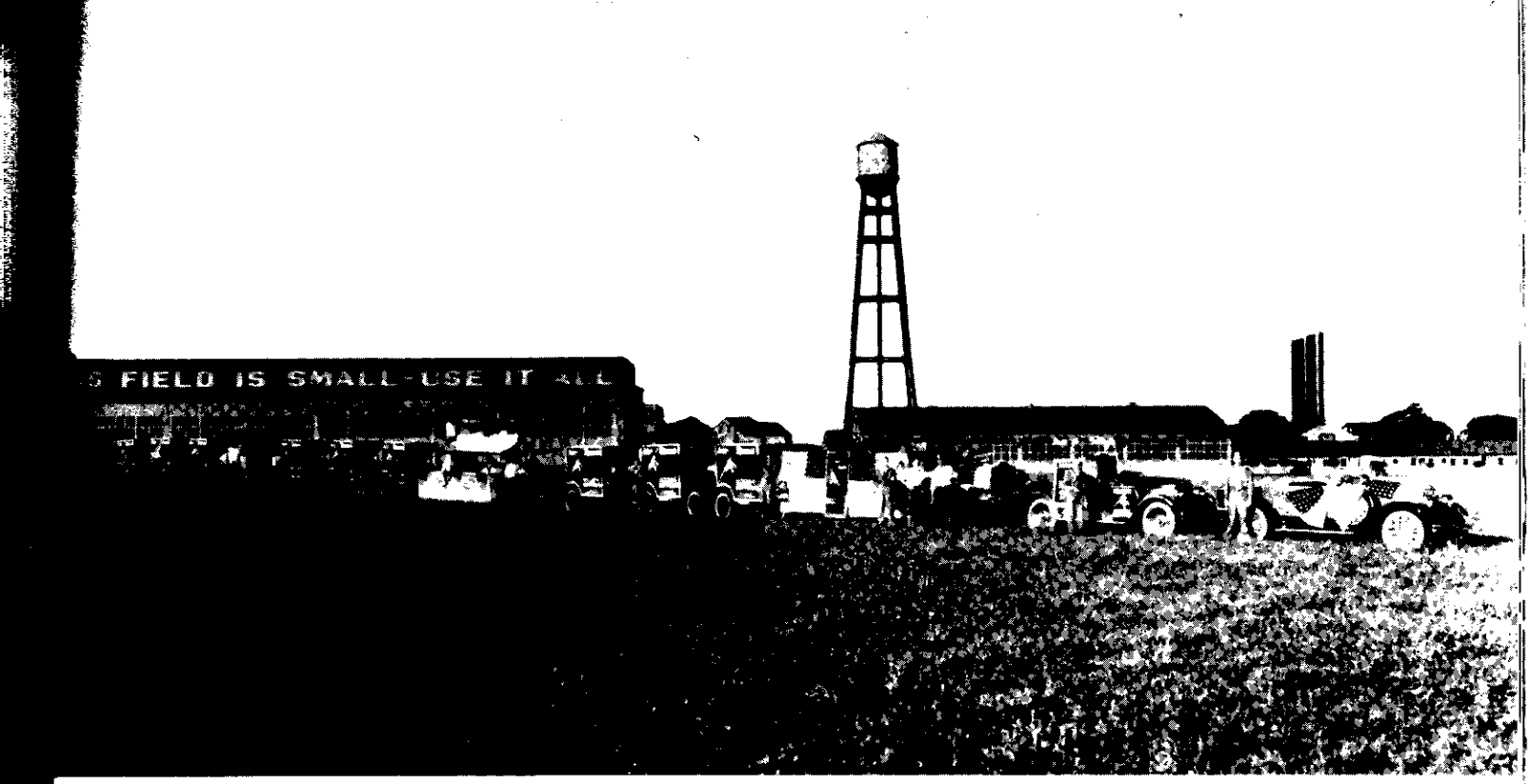
The first unofficial classes in June 1919 were attended by approximately ten Air Service lieutenant colonels and majors under the tutelage of Lieutenant Aldrin. Under Colonel Bane's strong guidance, however, the school was carefully developed. Aldrin, as Secretary and later Assistant Commandant at McCook, shouldered most of the responsibility for getting the school underway and continued to run the school for the first few years.*

Authorization for the first official course of instruction was received from the Director of the Air Service just prior to the start of classes on November 10, 1919. Colonel Bane

Air Service Engineering School, Class of 1920, McCook Field. Front row (l to r): Lt. Edwin E. Aldrin, Assistant Commandant, Lt. Col. Benedict, Lt. Col. Rader, and Maj. Sneed, students. Back row (l to r): Mr. LaBaie, instructor, Lt. Wilcox, Lt. Col. Dargue, Maj. Frank, and Lt. Col. McIntosh, students, Pvt. Perkins, administration. Lieutenant Aldrin was in charge of the school's operations, although Col. Thurman H. Bane, McCook Field Commander, served officially as Commandant. This was the school's first group of students, who began their studies in November 1919.

During the early 1920s, the Air Service Engineering School moved its classes to more spacious quarters. Lieutenant Aldrin (standing second from right) and Mr. LaBaie, instructor (standing third from right) were still active in school affairs.

*Aldrin's son, astronaut Maj. Edwin E. "Buzz" Aldrin, Jr., was a graduate of the Air Force Institute of Technology in 1963.



Parade at McCook Field publicizing the 1924 International Air Races held at nearby Wilbur Wright Field *(AFWAL Technical Library)*

was of course appointed Commander of the new school in addition to his other duties. As described in a later history of the Air Force Institute of Technology:[78]

> The group that gathered for the first official class on 10 November 1919 was small: Aldrin, another lieutenant, two majors, and four lieutenant colonels. They assembled in a hangar. Aldrin read them an introduction to the course and gave a copy of it to each officer. In the months that followed, the course envisioned by Col Bane became a reality. The classrooms were small frame buildings and hangars clustered along McCook's small grass runway, and the main educational tools were the blackboard and practical experience. On some evenings, prominent men from colleges and commercial plants delivered lectures illustrated by lantern slides.

The students in those early years took advantage of all the resources available to them—books, civilian engineers, strategic and tactical experts, research findings, and extensive laboratory training and equipment. The first class studied hard and was graduated in September of 1920. (The school by that time had been officially named the Air Service Engineering School.)

The daily activities at McCook provided an ideal atmosphere for learning and participating first-hand in the development of aeronautics. When Colonel Bane retired at the end of 1922, the school was firmly established and its graduates were beginning to make their mark in the world.

By 1923, the Air Service Engineering School curriculum was composed of four courses of instruction, three for Air Service officers and one for employees of the Engineering Division. The most professional of these was the one-year course in General Aeronautical Engineering, primarily airplane design and aircraft engine design. This core course was supplemented by a five-month course in Maintenance

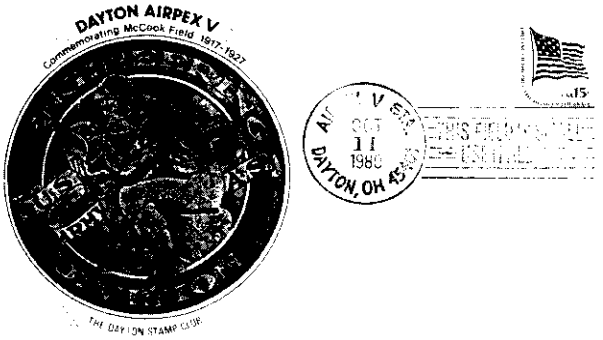
Several thousand guests attended this static exhibition and airshow at McCook Field on July 4, 1923. Proceeds were donated to the Soldiers' Emergency Relief Fund (similar to today's Air Force Aid Society).

Engineering for officers. A three-month course in Maintenance Engineering for reserve officers and a group of six evening courses in aerodynamics, metals, and other subjects for employees and officers at McCook completed the curriculum.[79]

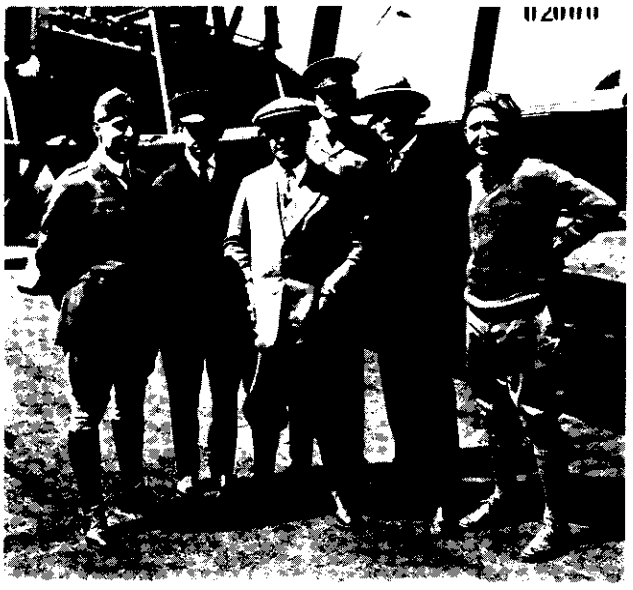
The class of 1927 was the last to receive instruction in the crowded classrooms "clustered along McCook's small grass runway," as facilities at McCook were dismantled for the move to Wright Field. The Air Corps Engineering School, as it was then known, resumed classes at the new installation in 1928 under the auspices of the Air Corps Materiel Division. Classes were held in the Materiel Division Headquarters building, now Building 11 in Area B.[80]

CREATION OF THE AIR CORPS MATERIEL DIVISION

The most significant reorganization of activities at McCook Field took place in 1926. Under provisions of the Air Corps Act, the activities of the Air Corps were divided into three major branches, each headed by an Assistant Chief of the Air Corps. Brig. Gen. William E. Gillmore was appointed Chief of the newly-designated Materiel Division, with headquarters at McCook Field. Brig. Gen. James E. Fechet assumed command of the Operations Division, with headquarters at Washington, D.C., and Brig. Gen. Frank P. Lahm headed the Air Corps Training Center, with headquarters at Kelly Field.[81]



The logo of the McCook Field Engineering Division was retained by the Air Corps Material Division in 1926. The logo, and McCook Field, were honored by the Dayton Stamp Club in 1980.



Members of the "First Bombardment Board," July 9, 1926, meet to test and make recommendations on procurement of bombardment airplanes for the Air Corps. Included are (l to r): Lt. Harold L. George, Lt. John DeF. Barker, Maj. Louis H. Brereton (President of the Board), Lt. E. W. Dichman, Lt. Muir S. Fairchild, and Lt. Odas Moon. *(U.S. Air Force Museum).*

The Materiel Division was an expansion of the Engineering Division, and included not only engineering, but also supply, procurement, and maintenance of aircraft.* The mission of the Materiel Division was to furnish all aircraft and aeronautical equipment used by the Army Air Corps. This encompassed five basic responsibilities, widely expanded from the relatively specialized mission of the Engineering Division:[82]

- Development, procurement, and test of aircraft and concomitant equipment
- Distribution and maintenance of materiel in the field
- Planning of industrial preparedness
- Maintenance of an adequate engineering plant and test facility
- The dissemination of technical information for the good of the service, the industry, and the general public

The Materiel Division, in fact, comprised most of the major functions of the new Air Corps, with the exception of training. Many of those functions have remained at Wright-Patterson up to the present day. Modern-day research and development, weapon systems acquisition, and supply and maintenance of current systems are carried on by "descendants" of the Engineering Division at Wright-Patterson, including the Air Force Logistics Command and the Aeronautical Systems Division of the Air Force Systems Command. The missions are the same; only the people and the technology have changed.

The organization of the Materiel Division and its component agencies were outlined in 1926 as follows: the Headquarters at McCook Field; six air depots located at Fairfield (Ohio), Little Rock (Arkansas), Middletown (Pennsylvania), Rockwell Field (California), San Antonio (Texas), and Scott Field (Illinois); three procurement districts with centers in Dayton (Central), New York City (Eastern), and Santa Monica, California (Western); and six procurement planning districts (under the Industrial War Plans Section).[83]

This massive reorganization and its consequent shifts in personnel made evident, more than ever, the inadequacy of the facilities at McCook Field. Fortunately, by 1926, definite plans for relocation of the Materiel Division had been approved and implementation was underway.

A NEW HOME IS SOUGHT

McCook Field was established originally as a temporary experimental site for wartime testing, and earned a notable reputation during World War I. As early as December 1918, however, only one month after the Armistice, rumors were afoot concerning relocation of the Engineering Division to a more permanent home.

Originally that permanent home was to have been Langley Field in Virginia, as discussed earlier. In fact, on De-

*More comprehensive coverage of this reorganization may be found in Chapter V, Wright Field.

cember 5, 1918, Colonel Bane received a memo from Col. Arthur Woods, Assistant Director of Military Aeronautics, stating in part that, "You will be safe in assuming that your work will stay where it is for six months and some time after that it will be moved to Langley [Field]."[84]

Thurman Bane himself was the first to admit that the set-up at McCook was far from ideal. Growth of the Engineering Division had been so rapid and extensive during the war that the initial facilities were inadequate to house its expanded functions. Bane was not entirely pleased with the prospect of moving the entire Division and its operations to Langley because moving would mean the loss of many well-trained and hard-to-replace men and significant disruption of operations, but he recognized that the problems at McCook were legion. They could not be compensated for and worked around indefinitely.

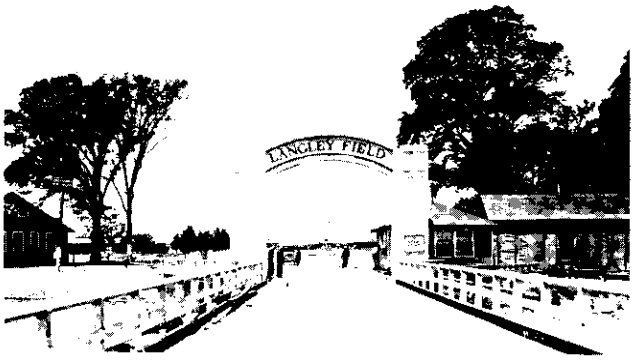
Because of the immediate press for wartime facilities, buildings at McCook had not been erected according to any master plan. As additional buildings were required and constructed, they slowly encroached upon the flying field itself. The majority of these buildings were of temporary construction, posing a great fire hazard and necessitating constant, costly maintenance.

The macadamized runway at McCook, oriented to take advantage of the prevailing winds, lay across the smallest dimension of the field—less than 2,000 feet. At the end of the runway was a dike topped with trees, which protected the field from the river.[85] Although small World War I pursuit and trainer airplanes had been able to negotiate this tight approach, it proved entirely inadequate for the larger post-war aircraft that were being developed at McCook. Those airplanes that were tested at McCook posed a very real danger to Dayton citizens living in the surrounding neighborhoods because of the field's location in the very heart of the city. A number of emergency landings during the 1920s terminated in treetops in the vicinity of McCook or in the (usually) shallow Great Miami River. Consequently, larger airplanes from McCook were flight-tested at Wilbur Wright Field near Fairfield.

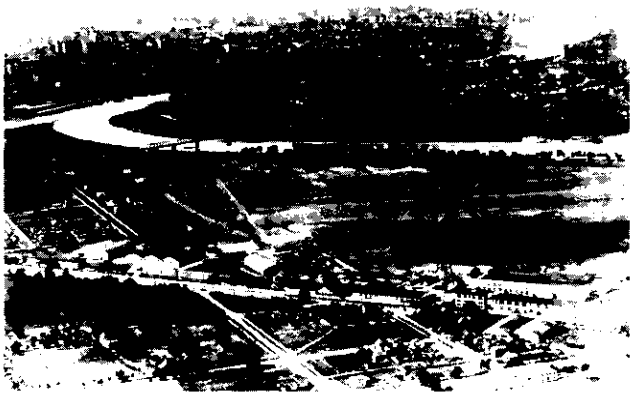
In addition to these safety and space considerations, the lack of a rail line to the field posed another limitation. Supplies and equipment (284 carloads in 1923) had to be hauled two miles from the station in Dayton.[86]

One final limitation was the fact that rent on the McCook Field property increased each year. McCook Field stood in a prime location, and the original owners were anxious to convert the land to more profitable use. Annual rental of McCook Field after 1924 was quoted at $60,000 per year. In times of tight money, the Air Service felt that this was an exorbitant and unjustifiable sum to pay for facilities that were far from adequate.[87]

Although the climate of opinion in the United States during the 1920s opposed the concept of increasing the country's offensive capability and the development of air power for military purposes, it was more than evident that the science of aeronautical engineering was only beginning to show its real potential. The impetus given to development of aeronautics during the war unveiled an unlimited



Langley Field was one alternative considered for the permanent home of the Engineering Division. *(U.S. Air Force Museum)*



McCook Field's prime location in the heart of Dayton carried a hefty rental fee by 1924. Original owners were anxious to reclaim the land and put it to more profitable use.

future for the airplane, and ignited a spark in the imagination and spirit of the American ingenuity. According to one contemporary historian: "With the signing of the armistice, civilization awoke to find the infant of aviation already a growing child upon her hands. It would never again be hushed to sleep and its crib pushed out of sight."[88] The sky was literally the limit.

The fact that the Engineering Division would continue its exploration was undoubted, and clamor for a suitable facility reverberated on all sides. The unanswered question remained, "Where?" Many, including Bane, anticipated that Langley was the prime candidate. Langley did offer certain advantages, mainly its proximity to Washington (so that Congressmen and officers of the Air Service could be near to the actual work), more ample facilities for bombing and firing from the air, and a permanent physical plant. There is evidence, however, that the Virginia installation was never really strongly considered.

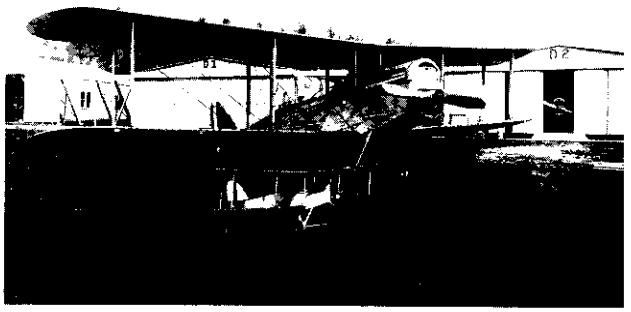
The National Advisory Committee for Aeronautics had been one of the only agencies to establish operations at Langley during the war. The Navy had contravened its original plans and never used Langley. Perhaps partially for status reasons, the Air Service felt, after the war, that it should also have its own independent research facilities. Colonel Bane evidently was not partial one way or the other. His only concern was that a location be selected and a

decision made so that the Division could get on with its work. In the end, relocation to Langley was vetoed and Bane was forced to exercise patience with the decision to leave the Engineering Division at McCook until a more suitable location could be obtained.[89]

As mentioned previously, in May of 1919 all aircraft experimentation activities conducted at Langley during the war were transferred to McCook (providing further evidence that Langley was never seriously considered).[90] In 1920 the War Department established the Air Service Field Officers School (later the Air Corps Tactical School) at Langley. Providing facilities for this school created crowded conditions at the installation. Relocating the Engineering Division from McCook after that time would have called for major reorganization.[91]

Sites in New Jersey, Maryland, and Michigan were reportedly considered as locations for the Air Service Engineering Division, but finding a site that already possessed adequate facilities and that would require little capital expenditure was next to impossible. One site that held a degree of promise, however, was the old Dayton-Wright Airplane Company at South Field in Dayton.

At the conclusion of the war, Dayton-Wright was in the process of making final settlements with the government. It was proposed that after the final settlement of contracts with the manufacturer, the government take over the plant and relocate the Air Service Engineering Division there. The primary argument for the move was that the War Department had already invested over $634,000 in the property for additions to the plant and $366,000 in roads and other improvements, all of which would be sacrificed unless the government purchased the plant and converted it to another use. As a plus, the Dayton-Wright factory buildings were of permanent, modern industrial construction and were serviced by adequate rail and land transportation. The flying field was of a suitable shape and size, and there was a corps of the highest grade mechanics, who were familiar with operations, available for hire. Relatively little government money would need to be expended in order to render the



Facilities of the Dayton-Wright Airplane Company at Moraine were considered the most logical site for the relocation of the Engineering Division. (Model airplane pictured is most likely an early experiment in radio-control, a product of research by Charles F. Kettering). *(NCR Corporation)*

(NCR Corporatio

JOHN H. PATTERSON

John H. Patterson, founder of The National Cash Register Corporation, is recognized as the father of modern salesmanship and an American pioneer in industrial relations. He is also remembered by many Daytonians for his dramatic role in rescue operations during the 1913 flood, and for his subsequent work in establishing the Miami Conservancy District to protect Dayton from future disasters.

Mr. Patterson was a firm advocate of any concept which represented progress. He was a prime mover in Dayton's successful campaign to become the first major city nationwide to adopt a city manager form of government. He also foresaw a bright future for aviation.

Mr. Patterson identified strongly with Brig. Gen. Billy Mitchell's support of the engineering work at McCook Field. His opinion regarding Air Service operations, in general, was that "the remarkable progress that has been made in aviation should be continued. . . . If there is any change in the fiscal amounts the proposed appropriations should be *in*creased rather than *de*creased."

The donation of land made possible by the people of Dayton two years after Mr. Patterson's death, as a result of the work of his son, Frederick, and the Dayton Air Service Committee, solved the urgent and very thorny problem of a location for the Air Service Engineering Division. At the same time, it represented a fulfillment of John H. Patterson's ardent desire to help strengthen and expand the operations conducted at McCook so that they might make a dynamic and lasting contribution to Dayton (the birthplace of aviation), to the military, and eventually to commercial aviation.

facility suitable for the experimental work.[92] The choice was logical, but unfortunately appropriations to fund the move were not forthcoming.

The proposal to assume ownership of the Dayton-Wright facility was only one of a series of proposals to move the Engineering Division submitted to a Congress reluctant to approve any military appropriations. The Fiscal Year 1920 Report of the Air Service to the Secretary of War stated, "The Air Service has failed in its endeavors to secure from Congress an appropriation to provide a home for its Engineering Division. . . . A suitable location . . . was offered the Air Service by the Dayton-Wright Airplane Company at a price which the Air Service representatives considered very reasonable. This proposition was submitted to Congress, but permission for the consummation of the project was refused."

This report further concluded:[93]

> The Air Service has been unable to date to find a suitable location for the Engineering Division on Government-owned land. The search for a location will be continued, but it is hardly believed that the Government now owns land which will be suitable for a plant of this kind. . . . At any rate, it is now clear that at its next session Congress must take the necessary legislative action for this primary and most important requirement of the Air Service.

By 1922 McCook Field's critical need for new facilities had become an irresistible force and Congress the proverbial immoveable object. It was during this crucial impasse, when federal agencies were deadlocked, that the citizens of Dayton rallied to take matters into their own hands and to provide a solution to the problem.

JOHN H. PATTERSON

John H. Patterson, founder and Chairman of the Board of The National Cash Register Company and a long-time supporter of the Air Service, was a man of insight as well as a man of action. According to Samuel Crowther, Patterson's biographer, it was during one of Brig. Gen. Billy Mitchell's visits to Dayton that Mitchell, then Assistant Chief of the Air Service, and Patterson first discussed taking more aggressive steps to keep the McCook Field operations in Dayton. Of primary importance was the pride Dayton claimed as the birthplace of aviation and as the center of aviation technology in the United States. Equally important was the economic initiative to be maintained by keeping the experimental aircraft industry and its highly-skilled work force in Dayton. In the recessionary period immediately following the war, the promise of a sizeable steady federal payroll, which was certain to expand as the field of aviation grew, was an opportunity to be seized.

Mr. Patterson was already known in Washington for his support of the Air Service. He now focused his considerable energies on two specifics: increasing Congressional appropriations to the Air Service so that essential work such as that done at McCook would continue, and negotiating with War Department officials to permanently relocate McCook activities to some other site near Dayton.

On the local level Patterson began examining various sites in the Dayton vicinity and methodically charting their advantages and disadvantages. In Washington, two NCR representatives, John F. Ahlers and Horace W. Karr, spent five weeks applying persuasive leverage in Congress on

Flying cadets from the Signal Corps Aviation School, Wilbur Wright Field, enjoy a reception on the lawn at the Far Hills estate of John H. Patterson, President of The National Cash Register Company, 1918. *(NCR Corporation)*

behalf of Air Service appropriations. They spoke to the Military Affairs Committee, the House Appropriations Committee, and the Ohio delegation to Congress. At Patterson's direction they also interviewed a total of 400 Congressmen and 96 Senators. The efforts of the two NCR representatives weighed significantly in the passage of increased Air Service appropriations for the coming year.[94]

There were no funds included in the budget, however, to relocate McCook Field. Mr. Patterson would not admit defeat or countenance delays, and resolved to stage an independent campaign to save McCook Field.

On May 5, 1922, Patterson and the Dayton Chamber of Commerce hosted a gala luncheon at the Gibbons Hotel in Dayton in honor of General Mitchell and Colonel Bane. Mr. Patterson outlined his plans for keeping McCook Field in Dayton. General Mitchell spoke on the valuable work being performed by the Engineering Division. He particularly urged Dayton citizens to take advantage of their opportunity to visit the field and become familiar with the government's activities in the development of the Air Service.[95]

Unfortunately, John H. Patterson did not live to see the fruits of his efforts. The next morning, Mitchell and Patterson met in the latter's office to discuss strategy and progress toward their mutual goal of retaining McCook Field in the Dayton area. That same afternoon Mr. Patterson departed by train for Atlantic City. Dayton was shocked and saddened two days later by the news that John H. Patterson had passed away on the train while en route from Philadelphia to Atlantic City on May 7, 1922.[96]

Patterson had laid the essential foundation, however, and formulated specific goals and objectives for the campaign to save McCook Field. His plans had only to be implemented.

THE DAYTON AIR SERVICE COMMITTEE

Patterson's only son, Frederick Beck Patterson, assumed leadership of The National Cash Register Company after his father's untimely death. Frederick had served as President of NCR under his father's tutelage since July of 1921. As such, he had been involved in the strategy meeting held in his father's office on the morning of May 6 and also had a personal interest in the McCook Field project.

During World War I, Frederick Beck Patterson was commissioned as a second lieutenant in the Army Air Service and served with the 15th Photographic Air Squadron in France. He remained active in aviation affairs after the war, eventually serving as Chairman of the National Aeronautic Association.

Shortly after John H. Patterson's death, it was rumored that a definite decision had been made by the Air Service to move the Engineering Division out of Dayton. Upon personal investigation, Frederick discovered the story to be true and acted quickly.

From May until October, Patterson conducted extensive negotiations with the Secretary of War, the Attorney General, and officers of the Air Service. He also enlisted the aid of

Frederick Beck Patterson (left) with his father, John H. Patterson *(Mrs. Howell Jackson)*

Lt. Frederick B. Patterson and his father, 1918 *(Mrs. Howell Jackson)*

numerous prominent Daytonians. The organization formed under Patterson's direction was named the Dayton Air Service Committee, and was composed of distinguished citizens who spent freely of their time and money in support of the McCook Field project:[97]

Frederick B. Patterson, President
Frederick H. Rike, Vice President
Ezra M. Kuhns, Secretary
W. M. Brock, Treasurer
W. R. Craven
Valentine Winters
H. H. Darst
I. G. Kumler
Col. Frank T. Huffman
Col. E. A. Deeds
G. W. Shroyer
F. J. Ach
J. C. Haswell
H. W. Karr
Edward Wuichet
George B. Smith
H. D. Wehrley
John F. Ahlers
C. E. Comer

In essence, what Mr. Patterson learned from Air Service officials was that if Dayton wished to retain McCook Field it would have to donate land for relocation of the Engineering Division. A number of other cities were vying for the same honor and had already made offers of land; so if Dayton was seriously interested, it would have to equal or better the incentive. This was not an unusual suggestion at the time, for during World War I Congress had passed legislation encouraging patriotic groups and individuals to make free and clear donations of land to the federal government.[98]

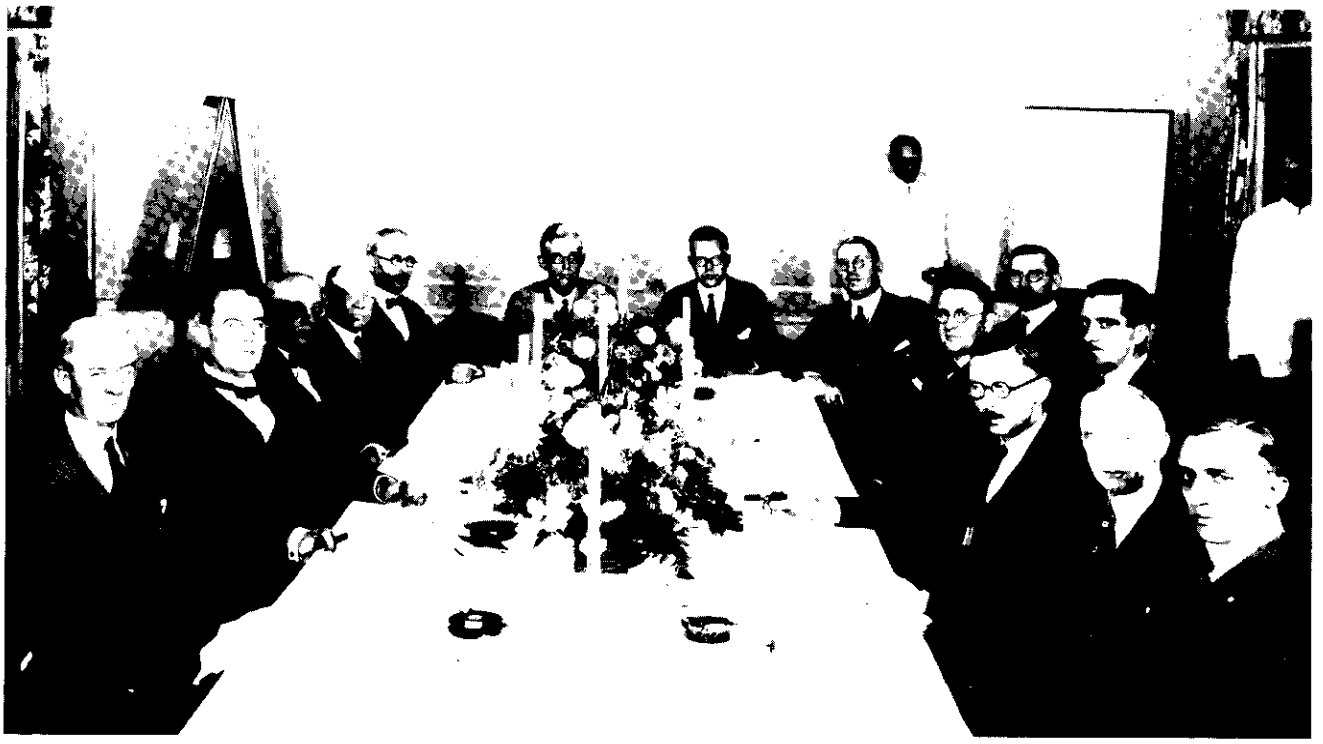
Frederick Patterson arranged for Air Service officials to view a site near Riverside (formerly Harshmanville), just outside of Dayton, that had been high on John H. Patterson's list of potential sites. The property involved was composed of a total of 4,988 acres, and spread across two counties. In Greene County the available property was bounded on the north by Springfield Pike and on the south by Yellow Springs Road, and included the site of former Wilbur Wright Field and land now occupied by Areas A and C of Wright-Patterson AFB. (The government already owned 40 acres adjacent to this tract, occupied by the Fairfield Air Intermediate Depot.) In Montgomery County, an additional 550 contiguous acres to the southwest were available near Riverside. A large portion of the available land (4,325 acres) was owned by the Miami Conservancy District. The remaining acreage proposed for the site was composed of seven parcels owned by the following individuals:[99]

Jannie Harshman	172.129 acres
Charles & Susan Beckel	171.260 acres
Alice Tobey	22.976 acres
William Stickle	21.000 acres
Louis Gradsky	37.023 acres
William Mathers	143.310 acres
William Mays	96.000 acres

Charts publicized by the Dayton Air Service Committee showed that a total of $325,000 would be required to purchase the eight parcels.

Frederick B. Patterson, President of The National Cash Register Company, also served as President of the Dayton Air Service Committee. *(Mrs. Howell Jackson)*

Capt. Edward Rickenbacker, World War I ace of the Air Service, and Frederick B. Patterson, President of NCR *(NCR Corporation)*



First meeting of the Dayton Air Service Committee, October 25, 1922, at the Dayton Country Club. The committee subsequently organized a campaign that yielded over $425,000 in public contributions to purchase a permanent home for McCook Field activities. Committee members, all prominent Dayton business leaders, are (from left): Irvin G. Kumler, H. W. Karr, G. W. Shroyer, Dr. D. F. Garland, Edward Wuichet, Frederick H. Rike, Frederick B. Patterson, W. R. Craven, John C. Haswell, H. D. Wehrley, Valentine Winters, and John F. Ahlers. Seated in the back row are Ezra M. Kuhns and Harold E. Talbott. *(NCR Corporation)*

The Air Service officials who viewed this vast tract of land were impressed and thrilled at the thought of obtaining enough land to comprise "the largest flying field in the world." Their response was so optimistic that the Dayton Air Service Committee proceeded immediately to secure options on all of the land. Meanwhile, Frederick Patterson continued to press the issue in Washington in order to obtain official approval of the project from the Air Service, and an iron-clad commitment from the government to accept the land when the Dayton Air Service Committee raised money to purchase it.

On October 25, 1922, Patterson announced that he had received a letter from the Air Service confirming its commitment to accept the land. With the government's approval of the proposed site also came word that the U.S. Air Service was contemplating the establishment of an air academy at the same location, a school that would eclipse both West Point and Annapolis in enrollment and importance.[100]

Patterson's response was swift and decisive. A dinner meeting of the Dayton Air Service Committee convened at the Dayton Country Club on Wednesday evening, October 25, to discuss specific strategies for raising money to purchase the land. It was decided to advertise creation of the new aviation facility as a lasting monument to the Wright brothers. The Committee believed this concept would appeal to the sentiment of the entire community. Dayton citizens at the time were sorely aware of the fact that France was the only country to erect a monument commemorating the achievements of the Wrights. They felt that the most logical location in the United States for a similar memorial was Dayton, Ohio.

A massive public campaign was planned for the very next week, to be conducted on October 31 and November 1, 1922. The goal of the campaign was to raise $400,000. This would be enough to ensure purchase of the new lands, with a nest egg of at least $25,000 left over to erect an official memorial to the Wright brothers. It was imperative that money for the land be raised quickly, because options on the land expired January 1, 1923.

H. D. Wehrley, Executive Secretary of the Community Chest, was named campaign manager. General headquarters for the campaign were established at the Chamber of Commerce offices in the Mutual Home Building at 40 North Main Street.[101] Twenty-five team captains were appointed to head teams of five men each.

Frederick Patterson hosted a dinner at NCR for more than 200 Daytonians involved in the campaign on Friday evening, October 27, at which time the entire project was explained in detail. Maj. Gen. Mason Patrick and Col. Thurman Bane were invited. In addition, the campaigners were treated to movies of the Pulitzer aerial race in Detroit and of Lts. John Macready and Oakley Kelly making their record-breaking cross-country flight.[102]

By October 31, all of Dayton was aware of the immensity and importance of the campaign. At noon on the first day of the campaign a spectacular aerial exhibition was held over Dayton by crews from McCook Field. Factory whistles sounded simultaneously throughout the town to signal the

More than 200 team captains and workers receive campaign plans from the Dayton Air Service Committee at this dinner, October 27, 1927, hosted by Mr. Frederick B. Patterson in the NCR employee dining room. *(NCR Corporation)*

beginning of the campaign.[103] Contributions were solicited from all major businesses and intensive door-to-door canvassing resulted in many contributions from private citizens. Pledges were for a period of three years, collectable every six months commencing January 1, 1923, in order to encourage sizeable donations.

The strategy carefully planned by Frederick Patterson worked. By sundown on October 31, $278,573 had been pledged, only $50,000 short of the amount needed to purchase the land. The second day of active campaigning terminated with a victory dinner for team captains and workers at the Miami Hotel. Patterson announced that the response from the citizens of Dayton had far exceeded the committee's expectations and that the fund had already passed the goal of $400,000.[104] In fact, pledges continued to flow in until November 10. Dayton historian Charlotte Reeve Conover has written of the campaign:[105]

> For two days everybody thought and talked Wright Field. Not a man was left unapproached. All the arguments were aired; all our civic loyalty was drawn upon. When the final count of contributions to the fund was made it showed that Dayton "had gone over the top" to the tune of $425,673.

Once the final count of contributions had been tallied, Patterson wired General Patrick that the money had been raised and that steps were being made to expedite the legal transfer of land titles to the U.S. government. His telegram read, in part:[106]

> The spirit which dominated this campaign will ever mark the attitude of Dayton toward the United States Air Service. Our citizens always will extend a hearty hand of fellowship to its members. We are not unmindful of the kindly interest you have taken in this great project, and desire to thank you for your many courtesies and kind consideration.
>
> With best wishes for the continued wonderful progress of the United States Air Service, and assurance that Dayton always may be depended upon to do its share in furthering such a splendid and necessary cause, we are,
>
> The Dayton Air Service Committee
> F. B. Patterson, General Chairman [sic]

The Miami Hotel, November 1, 1922. Frederick B. Patterson and his wife, Evelyn, host a post-campaign dinner for Dayton Air Service Committee workers. *(NCR Corporation)*

The technicalities involved in purchasing land and presenting it to the government required that the Dayton Air Service Committee incorporate. Articles of incorporation for the committee were filed with the Ohio Secretary of State on November 16, 1922. The articles listed, as committee officers: President, Frederick Beck Patterson, President of NCR; Secretary, Ezra M. Kuhns, General Counsel of NCR; Treasurer, W. M. Brock, Secretary of the Gem City Building and Loan Association.

The articles of incorporation empowered the committee to acquire and hold property intended for use by the government, to receive and enforce payment of subscriptions, and to borrow money on the faith and credit of those subscriptions. A Finance Committee was formed to implement plans for financing these transactions, headed by W. R. Craven, Valentine Winters, and Harry H. Darst.[107]

Negotiations for the land took place over several ensuing months, as did debate in the Congress over the funds necessary to construct a new home for the Engineering Division and to complete the Division's transfer from McCook Field. The Air Service decided not to carry the name of McCook to the new installation. The name "Wright Field" was deemed appropriate considering the size and location of the new field, and the direct link that would thus be forged between the new installation and aviation's founding fathers.

On August 9, 1924, 428.50 acres of Montgomery County (Mad River Township) land and 4,091.97 acres of Greene County (Bath Township) land were conveyed to the government by the Dayton Air Service Committee for the consideration of one dollar ($1.00) for each tract.[108]

On August 17, 1924, Frederick B. Patterson traveled to Washington, D.C., to personally present Secretary of War John Weeks with the deeds to the acquired lands. Secretary Weeks insisted, due to the significance of the occasion, that Patterson have an audience with President Calvin Coolidge to make the presentation. Following the audience, President Coolidge addressed a very warm letter to Patterson recognizing and praising the sacrifices made by the people of Dayton.

The exact wording of the Warranty Deed presented to the government read as follows:[109]

KNOW ALL MEN BY THESE PRESENTS:

That THE DAYTON AIR SERVICE INCORPORATED COMMITTEE, a corporation organized under the laws of the State of Ohio, with principal offices at Dayton, Ohio, hereinafter referred to and styled the grantor, in consideration of One ($1.00) Dollar to it paid by the United States of America, receipt whereof is hereby acknowledged, does hereby GRANT, BARGAIN, SELL AND CONVEY to the UNITED STATES OF AMERICA, its successors and assigns forever, subject to the limitations hereinafter mentioned, the following real estate: (DESCRIPTION)

The original deeds recorded that the land was sold to the government for use as an aviation field, or for such other service of the United States as the government considered desirable. Upon abandonment or discontinuance of the use of the land, however, title to the lands, according to the deeds, would *ipso facto* revert to the grantors, with the government having the period of one year to remove or dispose of any buildings, structures, or improvements on the land, to which it would still hold title. From this original deed has undoubtedly sprung the popular misconception that the property occupied by Wright-Patterson AFB today would revert to the City of Dayton or other original owners were the government to abandon the site or cease to employ civilian workers.

On December 18, 1924, however, the Dayton Air Service Committee reversed its position on the controversial clause by means of the following resolution:[110]

RESOLUTION:

This is to certify that at a special meeting of the Board of Trustees of the Dayton Air Service Incorporated Committee, held pursuant to notice, and at which a quorum was present, the following resolution was unanimously adopted. "Resolved: that this Committee does hereby waive and release its reversionary right in and to the lands conveyed to the United States Government lying in Montgomery and Greene Counties, Ohio, as described in deeds to the United States dated February 4, 1924 and August 9, 1924 respectively, and the President and Secretary of this Committee are hereby authorized and instructed to execute, acknowledge and deliver on behalf of the Committee, Quit-Claim Deeds to the United States in and to the lands referred to, thereby releasing to the United States the Reversionary Right of this Committee to said lands, as contained in the former deeds.

IN WITNESS WHEREOF, I have hereunto set my name and the Corporation Seal of said Committeee, on this 18th day of December, 1924.

The Dayton Air Service Incorporated Committee,
Ezra M. Kuhns, Secretary

A Quit-Claim Deed was drawn up stating that the Dayton Air Service Committee did "Remiss, release, and forever quit-claim to the United States of America, its successors and assigns forever, the above mentioned reversionary rights" to the donated lands.[111] The Dayton Air Service Committee, over the next six years, continued to donate small parcels of land to the government. These were, by and large, sections of land that had been exempted in the original deeds because of existing railroad and traction line right-of-ways. As these became available for sale, the committee purchased them and donated them to the government—always for the consideration of $1.00. In all instances, following the December 1924 resolution, the property was sold to the government outright, with no reversionary rights attached.[112]

While negotiations were underway to secure the land for Wright Field, Congress held lively and sometimes heated debate over appropriations for the new field. A bill submitted to the Congress in December 1922 by Representative [illegible]oy Fitzgerald of Ohio allowed the President, through the Secretary of War, to sell and dispose of land, buildings, machinery, and equipment at air sites owned by the govern-

72 PAGES TODAY

DAYTON DAILY NEWS

MAIN NEWS SECTION

DAYTON, OHIO, SUNDAY, AUGUST 17, 1924 — PRICE FIVE CENTS

U. S. ACCEPTS AIR FIELD GIFT

Military Home May Have New Hospital

OLD STRUCTURE FOUND UNSAFE AS PROBE ENDS

MILLIONS TO BE SPENT HERE

DAYTON LAUDED AS PATTERSON SUBMITS DEEDS

M'COY FIGHTS SANITY PROOF OF ALIENISTS

YOUTH OF LOR... MAN SHOT IN ... DAVIS TO MAKE

THE WHITE HOUSE
WASHINGTON

August 14, 1924.

My dear Mr. Patterson:

It was a genuine pleasure to receive this morning the call of yourself and your associates of the Dayton Air Service Committee, who were brought in by General Mitchell to tell me about the conclusion of the transactions which make the McCook Field at Dayton the property of the United States Government. In making this splendid gift to their country, the citizens of Dayton have been inspired alike by motives of high patriotism and also of pride in the fact that Dayton was the home of the Wright brothers, and that there, through their talents and tireless efforts, aviation had its birth.

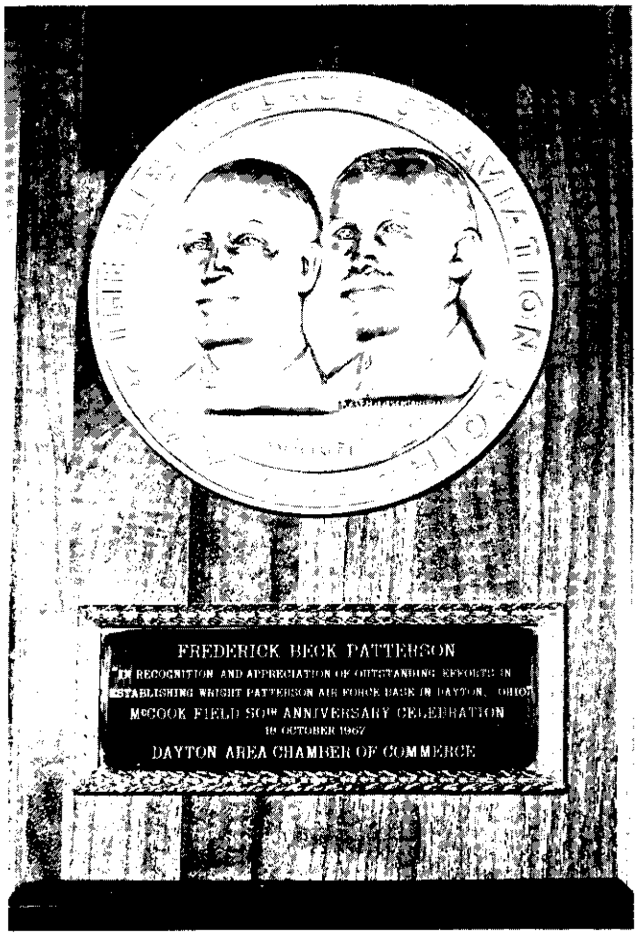
McCook Field will always be famous as the first of those training fields and terminals for aviation which now are scattered throughout the entire world. Upon it is reflected a full share of the glory won by thousands of American and other aviators who were trained there. It has been the scene of splendid services alike to the cause of science and to the national defense. The people of Dayton, in presenting this historic tract of 4500 acres to the National Government have insured that it will always be maintained for the service that has won it fame. You have enabled the creation of McCook field into a perpetual monument to the men who first realized the full possibilities of navigating the air, and to that great first generation of inventors and aviators whose services and sacrifices in the war and in the works of peace have made their list a roll of heroes. You have informed me that the transactions incident to transferring McCook field to the National Government are now completed. I am writing you because I want in this formal manner to record the Government's appreciation of this fine act, and to set down the assurance of my personal congratulations to the people of Dayton and my gratification at having had a small part in it.

Most sincerely yours,

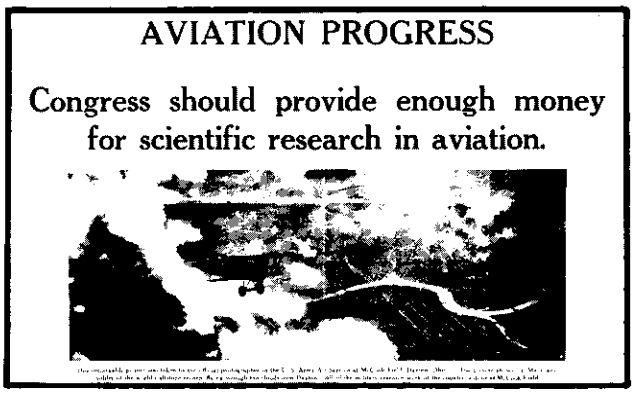
Calvin Coolidge

Mr. Frederick Patterson, Chairman,
The Dayton Air Service Committee,
Dayton, Ohio.

Letter from President Calvin Coolidge to the Dayton Air Service Committee



Plaque awarded to Frederick Beck Patterson in honor of his achievements with the Dayton Air Service Committee. The occasion was the 50th Anniversary of the founding of McCook Field. *(Montgomery County Historical Society)*



Banner of the Saturday, March 11, 1922 issue of *Aviation Progress*, published by the Dayton Air Service Committee *(NCR Corporation)*

ment when such were no longer of use to the Air Service, and deposit the proceeds thereof with the Treasurer of the United States. The entire sum, not to exceed $5 million, would then be appropriated for the erection of buildings, for gas and electric systems, machinery, and equipment at the new field.[113]

A similar bill was introduced in the Senate by Senator Frank B. Willis of Ohio. Both bills were subsequently referred to the respective Military Affairs Committees of each house. Plans for the new field and architectural models had already been prepared, and the Air Service was poised to begin construction as soon as the land was officially transferred and funds were made available.

These efforts were strongly backed by the Dayton Air Service Committee. Additionally, Frederick B. Patterson reinstituted publication of a journal entitled *Aviation Progress*, first published by the Dayton Chamber of Commerce at the direction of John H. Patterson in March 1922, to educate members of the Congress about achievements taking place at McCook Field and thereby influence them to pass the critical appropriations legislation. A special notice posted on the front cover of various issues of the journal stated:

> To Every Member of Congress:
>
> Development of the United States Air Service is one of the urgent needs of our nation. Bills supporting the program for its progress will come before you during the next session. Yours is a grave responsibility, and this booklet has been prepared to help you in careful study of the subject. Aviation must have your support.

Numerous large photographs with bold, clearly worded text and impressive statistics were designed for at-a-glance reading by Congressmen. Endorsements and statements by such notables as Orville Wright and Air Service Chief Maj. Gen. Mason Patrick graced the opening and closing pages. To broaden the image of the contributions being made by the Air Service, *Aviation Progress* also elaborated on the brilliant future of aviation in general, illustrating such potential commercial applications as cropdusting, air mail service, passenger service, freight transport, medical relief, and the use of aerial photography to facilitate mapping, surveying, and city planning.

The battle to secure funding was long and controversial. The Fitzgerald bill and other efforts were blocked, and Congress adjourned without taking action. In 1925, however, and in succeeding years Congress did make appropriations both for construction of buildings and for purchase of equipment for Wright Field:[114]

FISCAL YEAR	APPROPRIATIONS BUILDINGS & GROUNDS	APPROPRIATIONS NEW EQUIPMENT
1926	$ 500,000	$297,600
1927	$1,000,000	$715,200
1928	$ 600,000	$792,300
1929	$ 300,000	$488,200

In April 1925, an initial $5,000 was transferred to the Engineering Division at McCook so that grading of the new flying field could start immediately.[115]

On August 21, 1925, the War Department discontinued the designation "Wilbur Wright Field." All of the land that had been donated to the government by the Dayton Air Service Committee in 1924, including Wilbur Wright Field, became known officially as Wright Field, honoring both Wilbur and Orville.[116]

GROUND IS BROKEN

On April 16, 1926, official groundbreaking ceremonies were held at Wright Field. More than 100 citizens of Dayton, officials from McCook and Wilbur Wright Fields, members of the Dayton Air Service Committee, and Orville and Katharine Wright, witnessed the auspicious event.

Several local dignitaries took turns operating a steam shovel provided by the construction company to symbolically break ground. They included Frederick B. Patter-

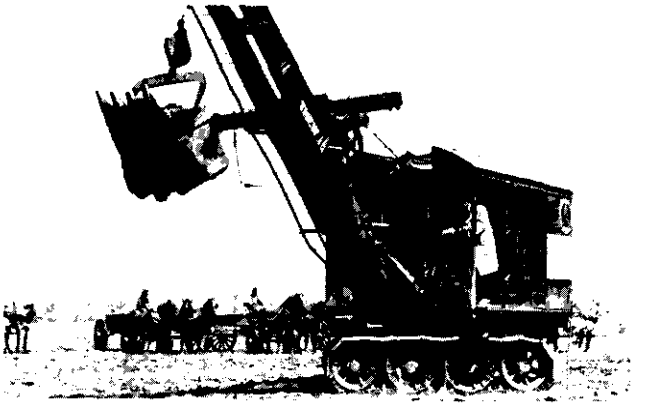
Members of the Dayton Air Service Committee, local Air Service officers, and distinguished guests attend groundbreaking ceremonies for Wright Field on April 16, 1926. Standing are (l to r): G. W. Shroyer, E. C. Berry, Howard Smith, Joseph McKenny, C. E. Comer, R. J. Hutchinson, I. G. Kumler, George B. Smith, Maj. Augustine W. Robins (Commander Fairfield Air Depot), Capt. E. M. George, Orville Wright, Frederick B. Patterson, George W. Lane, Lt. Lester Maitland (McCook Field test pilot), Maj. J. F. Curry (Chief, Engineering Division, McCook Field), W. M. Brock, Howard Egbert, John Ahlers, U. C. Thies, E. A. Johnson, and T. C. McMahon. *(NCR Corporation)*

Frederick B. Patterson (left), Secretary of War Dwight F. Davis, and Chief of the Air Service Maj. Gen. Mason M. Patrick at the Wright Field groundbreaking ceremonies *(Mrs. Howell Jackson)*

Distinguished guests at the Wright Field groundbreaking included Orville and Katharine Wright. *(Mrs. Howell Jackson)*

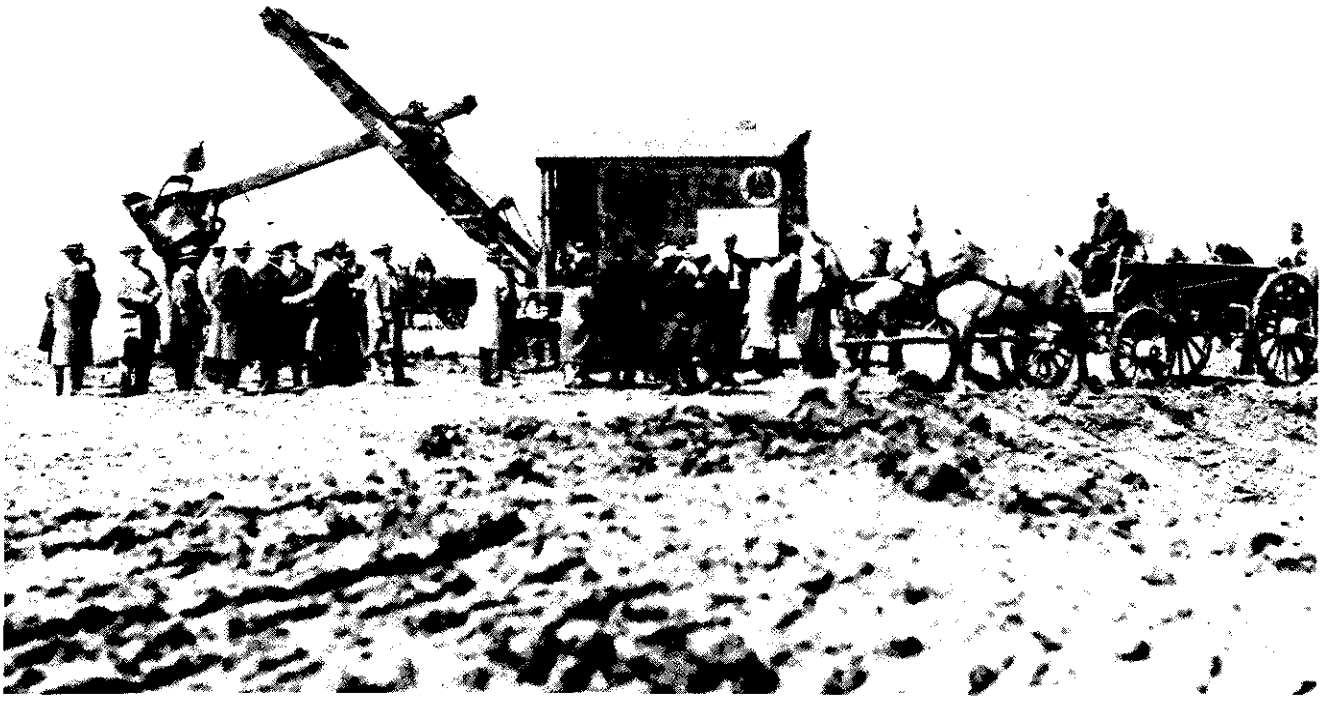
son, Maj. John F. Curry, Commander of McCook Field, and Maj. Augustine Warner Robins, Commander of the Fairfield Air Depot.

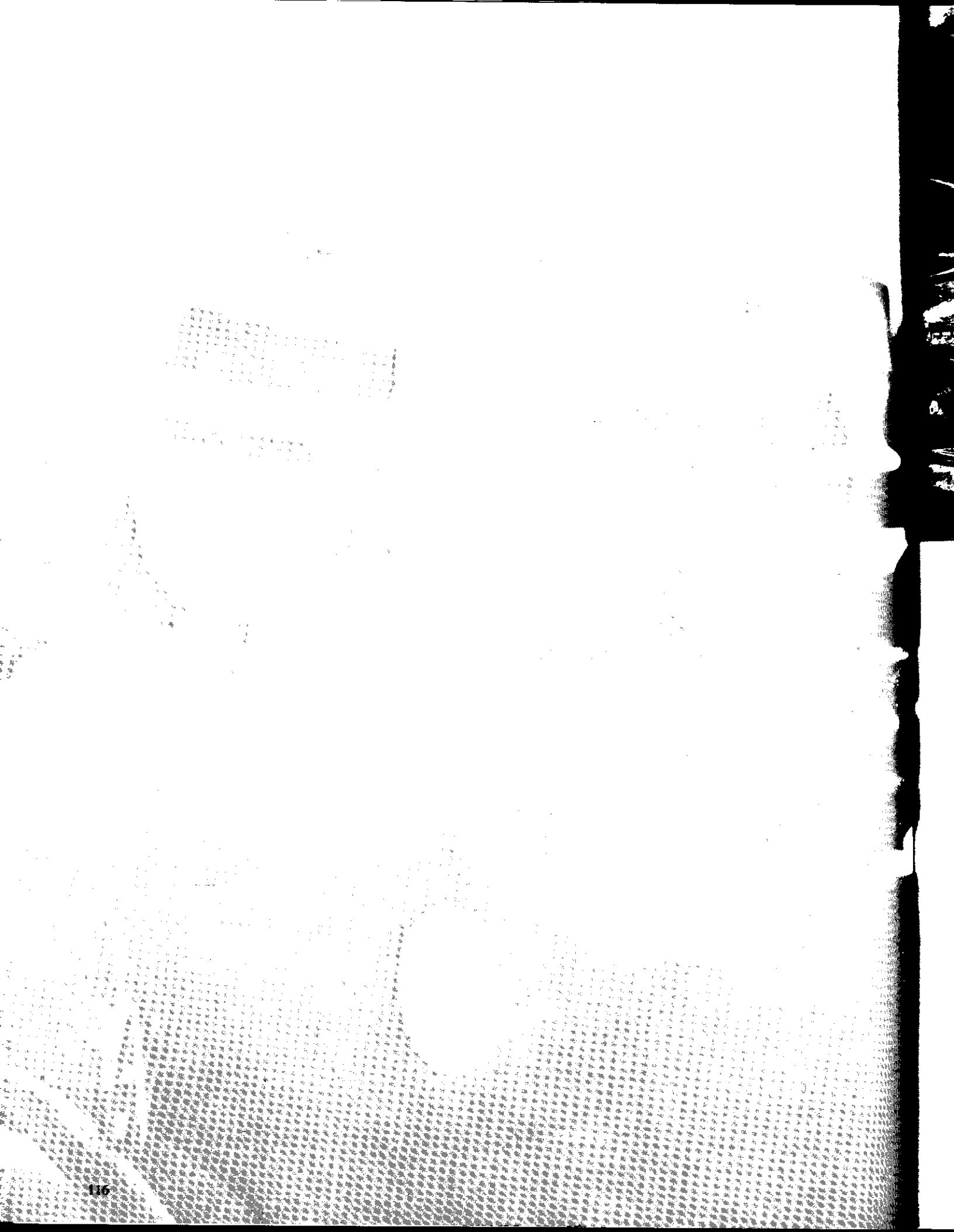
From that date on, progress at the new site was rapid. In less than one year, the residents of McCook Field were prepared to transfer operations to their new home and McCook Field was to become history. Many important chapters in air advancement had been written at McCook Field. Even more startling chapters of progress promised to be penned at Wright Field in the years to come.



Frederick B. Patterson, at the controls, lifts the first bucket of earth at the site of Wright Field. *(Mrs. Howell Jackson)*

Construction at Wright Field gets underway. *(Mrs. Howell Jackson)*





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The History of Wright-Patterson Air force Base

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