Celebrating a century of flight: origins of American military aviation

The First in a Series of Articles

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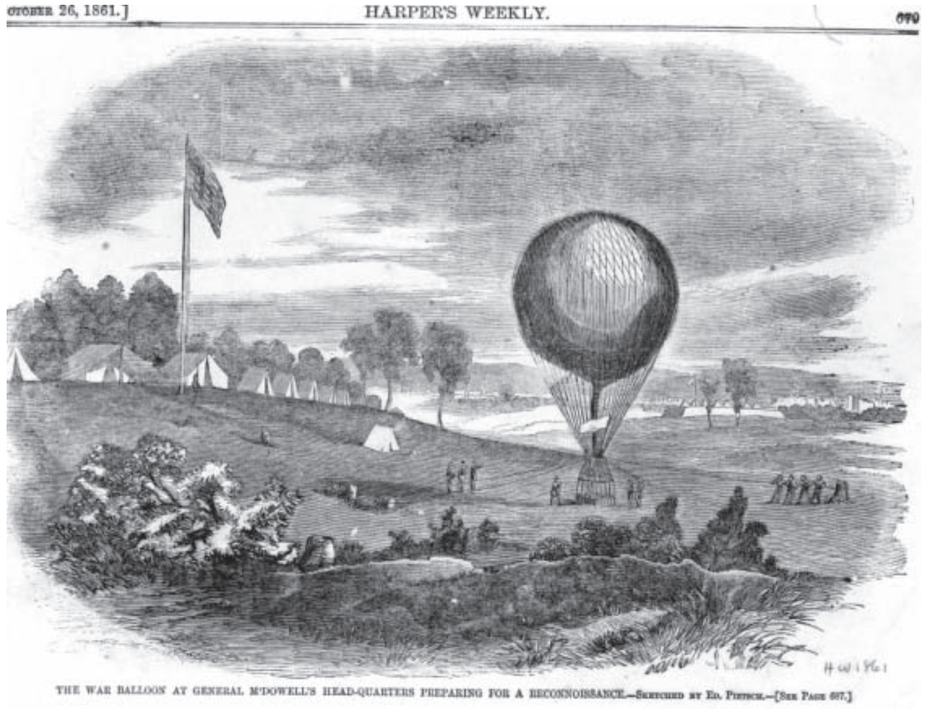

Illustration courtesy of the Library of Congress

Seen in this 1861 newspaper, a Union balloon prepares to ascend to reconnoiter Confederate lines.

Late in the afternoon of Sept. 3, 1908, before the winds died down, Orville Wright and two mechanics had already arrived at Fort Myer, Va., bringing with them a disassembled, crated flying machine.

Their preparations for the Army's first flying trials were slow and methodical, impeded by gawking bystanders. Army Signal Corps officers and other government officials stood by intently watching.

Almost five years had passed since the Wrights' Kitty Hawk debut. Few Americans had actually seen the spectacle of manned controlled and powered flight, and few others believed it. But now the Ohioans were done putting together the machine and setting up the launch rail.

The engine started, then failed. After the pilot and mechanics tinkered with the engine, it came to life. The wood and cloth craft slowly lifted to cheers, tears, and awed looks–only to softly crash to earth a few moments later. In the next few days, Orville piloted the machine through tight turns over the small parade ground. The military, at first skeptical of this new technology, was duly impressed.

Uncontrolled manned flight began with French ballooning in 1783, when the Montgolfier brothers sent a sheep, a rooster and a duck aloft in an untethered balloon. The French Army soon established a short-lived Aerostatic Corps during the French Revolution, but German ground fire brought down the balloons.

With the outbreak of the American Civil War, most accomplished civilian balloonists had Unionist sympathies. Field commanders willing to experiment used balloonists for reconnaissance, tactical planning, and artillery fire control. But wartime ballooning suffered from squabbles among civilian contractors, lack of funding, insufficient numbers of balloons and support equipment and the lack of a dedicated military organization. Midway into the war, the Union Army abandoned ballooning.

The Army renewed its interest in ballooning when the Signal Corps established a balloon section in 1892.

Ballooning again entered combat during the Spanish American War, when an Army balloon provided reconnaissance for American troops at Santiago and San Juan Hill. During this period, ballooning increased in popularity as an American sport. Sport ballooning in Albuquerque began in 1882 when saloon-keeper Park van Tassel sent his hydrogen balloon aloft from what is now downtown on the Fourth of July.

Manned, powered flight was not merely a dream but a competition, for success would bring adulation and lucrative contracts. During the late 19th century, American and European experimenters belonged to one of two groups: those who thought that the powerplant was paramount and those who believed aerodynamics had to be mastered before developing an engine.

Wilbur and I always thought that the principal use of the aeroplane for a number of years would be military, yet had we been told…that hundreds of thousands of aeroplanes would be used in a single war, we would have been as skeptical of that statement as some of the rest of you were of the aeroplane itself.

Orville Wright during World War I

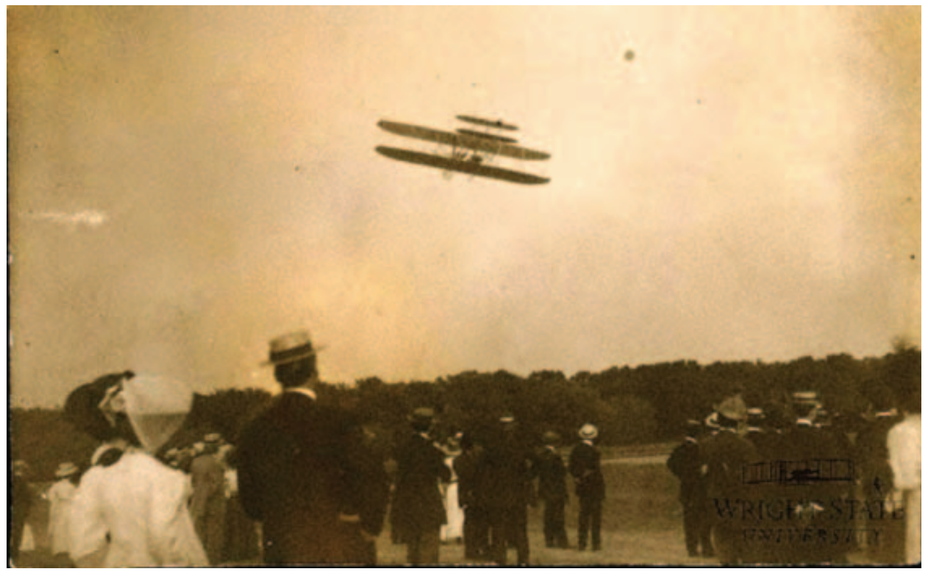

Photo courtesy of Wright State University

Spectators watch Orville Wright pilot the Wright Model A flyer over Fort Myer, Virginia, in September 1908.

U.S. Air Force photo

The original members of the Signal Corps Aviation School, College Park, Md., summer of 1911.

Lt. Benjamin Foulois

Most inventors from the first camp came from the elite and well-educated classes, such as the prominent scientist and Secretary of the Smithsonian Institution, Samuel Pierpont Langley.

Among those in the second camp, successful bicycle businessmen Wilbur and Orville Wright quietly began their inquiries into aerodynamics in 1896.

In that same year, the Wrights used their bicycle shop in Dayton, Ohio, to build an experimental glider, and the following year, tested it on the steady winds around Kitty Hawk, N.C.

Refining their research with a homemade wind tunnel and developing methods for improved flight control, the brothers felt sufficiently confident by 1903 to attach a motor built by their shop mechanic to a glider. Years of research and experimentation culminated in a short but sweet first flight on North Carolina's coast at 10:35 a.m., Thursday, Dec. 17, 1903.

Winning a coin toss, Orville flew first, reaching about 10 feet in height for a distance of 120 feet in 12 seconds. For the rest of that day, the brothers took turns and flew three more times, finally reaching a distance of 852 feet in 59 seconds.

Orville and Wilbur had beaten out their better-funded, academic competitors, including Army-funded Langley. Using more advanced engines, subsequent efforts in 1904-05 permitted the Wright Brothers longer, higher and more sustained flying.

Meanwhile, the Army, only vaguely aware of the Wrights' success, remained fixated on ballooning.

The Army Signal Corps created its Aeronautical Division on Aug. 1, 1907, and, shortly thereafter, purchased both balloons and dirigibles (motor-powered balloons). Significantly, a number of early Army pilots began their aviation experience as balloon aeronauts, including Lt. Frank Lahm, Lt. Thomas Selfridge, Lt. Benjamin Foulois and Capt. Charles Chandler.

In 1905, the Wrights approached the federal government about using their aircraft as a military weapon. The Army, however, remained skeptical in light of Langley's publicized failures and the minimal publicity surrounding Kitty Hawk.

In 1907, some congressmen and the newly formed Aero Club of America directly approached President Teddy Roosevelt on behalf of the Wrights. Prodded by Roosevelt, the Army put out specs for contract bids.

Three qualified bidders replied, but only the Wrights produced. Demonstration trials began at Fort Myer, Va., late in the summer of 1908. The first airplane fatality occurred during these trials when passenger Lt. Thomas Selfridge, accompanying pilot Orville Wright, died after a crash from about 125 feet on Sept. 17.

The success of these test flights led to the Army's formal acceptance from the Wright Brothers of Signal Corps Airplane No. 1 on Aug. 2, 1909.

The final portion of the Wrights' contract required them to train two Army pilots.

The Army leased larger fields for pilot training near College Park, Md., a small town not far from Washington. There, Orville Wright trained Lahm and Lt. Frederic Humphreys as pilots. Infantryman Lt. Benjamin Foulois soon arrived to receive instruction.

Quickly, though, the program ran into trouble. Due to Congressional edict, officers on detached duty had to return to their assigned duties within a short period. Lahm returned to the cavalry and Humphreys returned to the engineers, leaving only Foulois. But Foulois had not yet soloed.

Concerned that Maryland's winter weather would hamper pilots exposed in open cockpits, the Army sent its sole aircraft with its sole pilot to warmer Fort Sam Houston, Texas, during 1910-11.

Foulois hadn't even finished his training, but he continued his education "by correspondence" with the Wrights before they soon sent an instructor to his aid. With diminishing funding, he often purchased spare parts with his own money, or relied upon his own ingenuity. His efforts allowed him to participate in Army maneuvers conducted nearby.

In late 1910, Glenn Curtiss, who had started a flying field and school on North Island near San Diego, Calif., also offered to train Army and Navy pilots. Both services accepted.

The Army sent Lts. Paul Beck, George E.M. Kelly and John Walker. By April 1911, the three were ordered to Fort Sam Houston. When Kelly (namesake of Kelly AFB) was killed on May 10, 1911, the local commander suspended air operations. Shortly thereafter, the Army moved its flying operations back to College Park, and sent Foulois to a desk assignment in Washington.

Several inquisitive officers participated in early air exhibition shows and set significant aviation "firsts."

Passenger Lt. Jacob Fickel fired the first rifle from an airplane during the August 1910 Sheepshead Bay, N.Y., show, hitting the 3- by 5-foot target in two of four attempts from about 100 feet altitude.

Lt. Paul Beck and artillery officer Lt. Myron Crissy developed an accurate bomb-sight; Crissy (as a passenger) then dropped the first live bomb during the 1911 San Francisco air show.

In the spring of 1911, Congress appropriated significantly larger funds for the Army's aviation efforts.

The Army quickly purchased five new aircraft and created a flying school that included formal instruction for its pilots. It directed Capt. Charles Chandler to command the new school and in March ordered newly accepted student Lt. Roy C. Kirtland, 14th Infantry, to construct four permanent hangars at College Park.

To train instructors, the Army ordered Lt. Henry "Hap" Arnold, 29th Infantry, and Lt. Thomas D. Milling, 15th Cavalry, to study flying at the Wright Brothers' Dayton, operation. Together with trained pilot Capt. Paul Beck, they soon arrived at College Park.

The Signal Corps Aviation School had begun.

Next week:
Who Was Roy Kirtland?