



The Aero Club of Washington: Aviation in the Nation's Capital, 1909-1914

Author(s): Tom D. Crouch

Source: *Washington History*, 2010, Vol. 22 (2010), pp. 36-56

Published by: Historical Society of Washington, D.C.

Stable URL: <https://www.jstor.org/stable/41000588>

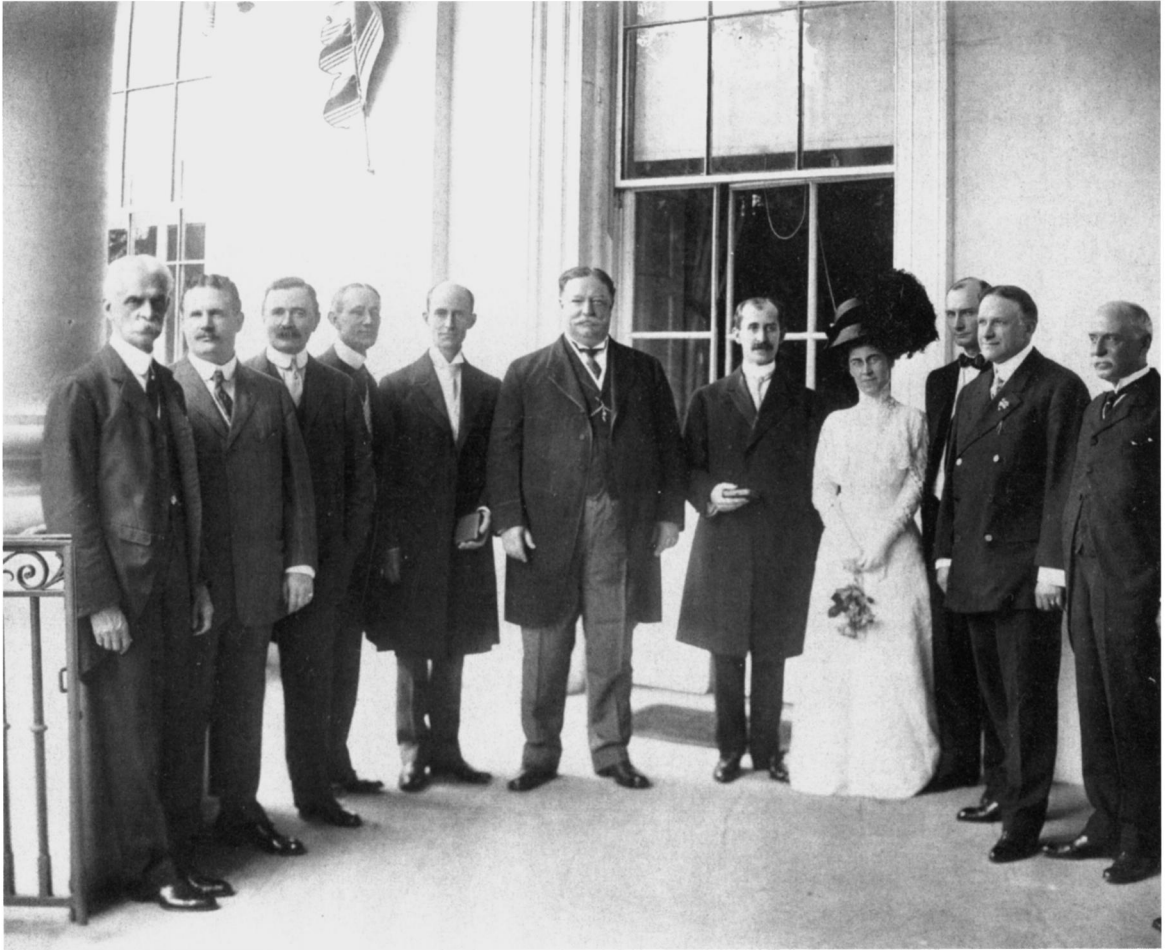
JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



Historical Society of Washington, D.C. is collaborating with JSTOR to digitize, preserve and extend access to *Washington History*

JSTOR



Posing for the camera at the White House on June 10, 1909, are Wilbur Wright (fifth from left), President William Howard Taft, Orville Wright, Katharine Wright, and representatives of the Aero Club of America and the Aero Club of Washington. National Air and Space Museum, Smithsonian Institution (SI 2003-12098).

The Aero Club of Washington

Aviation in the Nation's Capital, 1909–1914

Tom D. Crouch

A group of distinguished looking gentlemen gathered at Washington's new Union Station to meet the 8:40 train on the morning of June 10, 1909. This was to be a great day, and the members of the Aero Club of Washington, not yet five months old, would set things in motion by greeting the arrival of the nation's newest heroes, Wilbur and Orville Wright and their sister Katharine, as they stepped from the train. The group escorted their guests to several waiting automobiles. After a short stop at the New Willard Hotel to allow the Wrights to refresh themselves, it was on to the War Department, where the famous brothers met with General James Allen, the U.S. Army's Chief Signal Officer, and the man who would supervise the flying trials of the Wright airplane, scheduled to resume at Fort Myer, Virginia, just across the Potomac, in less than two weeks.¹

As they left the War Department, the Wrights assured reporters that they would be back in Washington by June 21, prepared to resume the demonstration flights that had been

interrupted by a tragic accident the year before. Orville Wright still walked with a cane as a result of that crash, which had taken the life of his passenger, Lt. Thomas Etholen Selfridge. The committee then escorted their charges to the Cosmos Club, housed in the historic Dolley Madison House on Lafayette Square, where they would be the guests of honor at a reception and buffet luncheon. "It was attended by upwards of 200 guests," a *Washington Post* reporter noted, "including a large number of men prominent in scientific circles, as well as representatives of the civil and military branches of the government . . . [and] a large number of ladies." The three Wrights, it was reported, did their best to "look as little like celebrities as they could."²

By 2 P.M., those attending the luncheon began to make their way across Lafayette Square to the White House, where they were joined by another three hundred spectators. Promptly at 2:46 P.M. the doors opened and President William Howard Taft led his three guests into the East Room. Representative Herbert Parsons, a congressional aviation enthusiast, opened the proceedings, then introduced A. Holland Forbes of the Aero Club of America, who gave President Taft the gold

Tom D. Crouch is Senior Curator of Aeronautics at the Smithsonian Institution's National Air and Space Museum.

medals he was to present to the heroes of the hour.

The portly Taft began by admitting that while his predecessor, the ebullient Theodore Roosevelt, would undoubtedly have wanted to fly, he himself was not built for such an adventure. He expressed a hope that the airplane would be used for peaceful purposes, as well as the national defense, and congratulated the Wrights “on the recognition you have received from all of the crowned heads of Europe, and I congratulate you that in receiving it you maintained the modest and dignified demeanor worthy of American citizenship.” With that Taft presented the medals to the brothers and remarked, “Come on you winged men, I suspect we’ll have to be photographed once more.”³

Washington, D.C., had emerged as a focal point of aeronautical activity in the late nineteenth century, when Samuel Pierpont Langley, third Secretary of the Smithsonian Institution, made world headlines with his “aerodromes.” In 1896, after a decade of “cut-and-try” experimenting, Langley and his crew of workmen succeeded in launching Aerodrome No. 5, a steam-powered model aircraft with a fifteen-foot wingspan, on a successful flight of some three-quarters of a mile over the Potomac. Other successful flights with large models followed.

With \$50,000 from the War Department and additional funds from the Smithsonian budget, the secretary set his staff to work on a full-scale Aerodrome powered by an internal combustion engine to be piloted by his assistant, Charles Matthews Manly. Two attempts were made to launch the craft, once on October 7, 1903, and again on December 8. On each occasion, the craft suffered a spectacular and very public failure. Fortunately, Manly escaped both times with nothing worse than a dunking. Just nine days after the Langley Aerodrome dropped into the Potomac the second time, the Wright brothers made the

first successful powered, sustained and controlled heavier-than-air flight in history from a remote fishing village on the Outer Banks of North Carolina.

The Wrights continued to work in the relative seclusion of a cow pasture near their home in Dayton, Ohio, for the next two years, transforming their marginal success of 1903 into the reality of a practical airplane by the fall of 1905. It was the last time the Wrights would fly for more than two years. While the brothers remained on the ground waiting for their patent application to be approved and attempting to market their machine, European aviators began to struggle into the air, drawing on their incomplete understanding of what the Wrights had achieved. In Washington, Langley’s old friend Alexander Graham Bell nursed his own aerial ambitions and spearheaded the organization of the Aerial Experiment Association, while Professor Albert Francis Zahm, an aeronautical pioneer in his own right, was pursuing aerodynamic research using the world’s largest wind tunnel at Catholic University.

Flying machines returned to the front pages of the city’s newspapers in 1908, when the Army announced that it would test a series of aircraft at nearby Fort Myer that spring and summer. It was a year in which the airplane seemed to spring into being. At Paris on January 13, 1908, Henry Farman flew his Voisin Farman I in a one-kilometer circle to win the 50,000-franc Deutsche-Archdeacon prize.

Things were happening that spring and summer on this side of the Atlantic as well. With contracts in hand for the sale of their machine to the U.S. Army and a French syndicate, Wilbur and Orville were finally back in the air. They returned to the North Carolina coast in April with their 1905 aircraft—rebuilt with upright seating for two and new flight controls. On May 14, after several weeks of brushing up their flying skills, the brothers took the world’s first airplane passenger, their mechanic Charles Furnas, aloft. At long last,

the Wrights were prepared to unveil their invention to the world.

But the Ohio brothers were not the only Americans taking to the air. Now headquartered at Glenn Curtiss' motorcycle factory in Hammondsport, N.Y., the young members of Alexander Graham Bell's Aerial Experiment Association built and flew a series of three aircraft that spring and summer, culminating in Curtiss's flight aboard the biplane June Bug at Hammondsport on July 4, 1908. Covering almost a mile in one minute 42.5 seconds, the achievement earned the group the Scientific American Trophy.

The real excitement, though, began on August 8, 1908, when Wilbur Wright made his first flight in public at the Hunaudières race course, five miles south of Le Mans, France. Over the next several weeks he made headlines around the world with one stunning flight after another, demonstrating once and for all that the Wright claims to priority in the invention of the airplane were true, and that the Wright airplanes were capable of tight turns and a degree of control impossible with other machines.

Washingtonians had an opportunity to watch history being made in the sky that month, as well. The components of Thomas Scott Baldwin's hydrogen-filled pressure airship arrived at Ft. Myer on July 22, 1908. Baldwin, inspired by the Brazilian experimenter Alberto Santos-Dumont, had pioneered the design and construction of one-man powered gas bags in the U.S. The new craft, to be known as the SC-1 (for Signal Corps), measured eighty-four feet long and was powered by a Curtiss engine. In order to satisfy the requirements of the Army contract, and earn the \$8,000 purchase price, an airship had to carry a crew of two and remain aloft for two hours, during which time it had to achieve a top speed of 20 mph.

Baldwin and Glenn Curtiss took the airship up from the Ft. Myer grounds for the first time on August 5, 1908. U.S. Army officials

accepted the SC-1 into the inventory on August 17, announcing that since the airship had achieved a maximum speed of only 19.61 mph and an average speed of only 13.75 mph during the endurance flight, the payment would be only \$5,737.50. "I didn't go into this thing to make money," a philosophical Baldwin told reporters. "The honor of being the first to sell an airship to the United States government is enough for me."⁴

On the evening of August 22, 1908, a group of Washington newsmen hosted a Press Club dinner celebrating Baldwin's achievement. Orville Wright, who was only twelve days from making his first flight at Fort Myer to satisfy the terms of the Army contract for a heavier-than-air machine, was among the speakers who congratulated Baldwin, as were General Allen, Major Squier, and Lts. Frank P. Lahm, Benjamin D. Foulois, and Thomas Etholen Selfridge, the young officers who would serve as official observers, and passengers, at the Wright demonstration flights.

At one point that evening, toastmaster Jerome Fanciulli, an aviation enthusiast serving on the Washington staff of the Associated Press, asked Augustus Post, secretary of the Aero Club of America, to offer Washingtonians some advice on establishing an Aero Club of their own. Post obliged, and agreed to serve on a planning committee with General Allen, Albert Zahm, and Russell M. McLennan.⁵

The weeks that followed were full of aeronautical activity. Orville Wright joined his brother in the headlines on September 3, 1908, when he made his first public flight at Ft. Myer, Virginia. Orville made twenty flights between September 3 and 17, repeatedly setting and breaking records for passenger-carrying, distance, and endurance, meeting and surpassing the criteria established by the Army for the purchase of an airplane. Tragedy struck on September 17, when Orville crashed at Ft. Myer while flying with Lt. Selfridge. Selfridge, a member of Alexander Graham Bell's AEA,



Capt. Thomas Scott Baldwin's dirigible SC-1, the first powered aircraft in the U.S. arsenal. Photo by Carl H. Claudy, Sr., National Air and Space Museum, Smithsonian Institution (SI 2008-3049).

became the first person to die in a powered airplane crash. Orville recovered but lived with the pain resulting from the accident for the rest of his life.

The four-man committee appointed to plan for the Aero Club of Washington took their time getting organized. They developed a draft constitution and by-laws during meet-

ings in the fall and winter of 1908–9. In mid-December General Allen informed reporters the he was “looking forward to the organization of an aeronautic club with great pleasure,” and assured them that “membership will not be confined entirely to members of the army and government employees, but will take in all persons interested in aeronautics.” Russell McLennan added that a preliminary meeting was in the planning stages and expressed the hope that “the Washington Aero Club will then be in a position to aid in the entertainment of the many visitors expected” to attend the planned White House presentation of the medals to the Wright brothers the following summer.⁶

Twenty-six members of an expanded organizing committee finally gathered in the War Department office of their temporary chairman, General Allen, on January 23, 1909, to sign the articles of incorporation establishing the Aero Club of Washington.⁷ The attendees then elected the members of the original Board of Management, with the exception of the president.⁸ With first vice-president, Assistant Secretary of War General Robert Shaw Oliver, in the chair, the group adopted the draft constitution and by-laws. Two days later General Allen filed the charter with the District of Columbia. The Club’s goals were clear and straight-forward.

To foster and promote interest in the principles and development of aeronautics, to extend honors and hospitalities to eminent airmen, to arrange for lectures and demonstrations, to encourage and arrange for national and international competitions, conventions, congresses and exhibitions, and to offer such medals, trophies and prizes as may from time to time be deemed expedient.⁹

The business of organizing the group was finally complete when the Board of Management, meeting at Alexander Graham Bell’s

home on May 13, 1909, elected Thomas Francis Walsh as the first president of the Aero Club of Washington. The Irish-born Walsh (1850–1910) was the discoverer of the Camp Bird Gold Mine, near Ouray, Colorado, one of the richest strikes in American history. Settling in Washington, D.C., in the late 1890s, Walsh accepted President McKinley’s appointment as U.S. Commissioner to the Paris Exposition of 1899. In 1903, Walsh moved his family into an ornate mansion at 2020 Massachusetts Avenue, which today serves as the Embassy of Indonesia. Walsh sealed his fame in 1908, when his daughter, Evelyn, eloped with Edward Beal “Ned” McLean, heir to the *Washington Post* fortune. Walsh’s wedding present to his daughter—the Hope Diamond.¹⁰

A committee of club officers called on Walsh on May 17, 1909, to notify him of his election. The new president invited the group to join him for lunch at the Metropolitan Club, where he appointed the standing committees for 1909 and nominated several new members. Two days later, he hosted a lunch at his home, during which he appointed a reception committee to greet the Wrights. By the time the White House event celebrating the Wright brothers was held less than a month later, the Aero Club of Washington was a going concern. Before the end of the year, the group would establish a well-furnished office on the fourth floor of the Union Trust Company at 15th and H Streets NW. Local newsmen reported that Secretary Albert Zahm “can usually be found at the club’s headquarters in the morning, about 11 o’clock.”¹¹

One of the first orders of business was the recruitment of new members. President Walsh appointed his son-in-law, Ned McLean, head of the membership campaign. “Don’t you want to become a member of the Aero Club of Washington?” a typical solicitation letter began. “It is a thing which I am sure will grow in the next few years.” Top of the line life memberships were priced at \$100. By the end of June 1909, four individuals had signed up at

that level. The first fifty-five annual members contributed a total of \$550 in initiation fees, and \$275 in dues.¹²

The weeks and months following the medal presentation were full of aeronautical activity in the nation's capital. Wilbur and Orville were back in Washington on June 20 and had completed assembly of their machine by June 24. Orville made the first preliminary test flight on June 29 and completed nine flights by July 2, when he struck the branches of a tree while landing, ripping the wing fabric and doing minor damage to ribs and landing skids. The elite of the nation—President Taft and members of the cabinet, officials of the War and Navy Departments, and leaders of the House and Senate—gathered each day at Ft. Myer to witness the proceedings. Alice Roosevelt Longworth, the daughter of ex-President Theodore Roosevelt and the wife of Congressman Nicholas Longworth, drew almost as much press attention as the Wrights for serving “tea” from a thermos to the distinguished ladies and gentlemen gathered on the parade ground.

Following a quick return to Dayton to prepare new wing covering, Orville was back in the air over Ft. Myer on July 12 and completed eighteen additional flights by July 30, when he carried Lt. Benjamin D. Foulois on the official speed trial. On the ten-mile flight from Ft. Myer to Shuter's Hill in Alexandria, Virginia, and back, the pair averaged 42.583 mph, two miles per hour faster than the contract required, adding a bonus of \$5,000, raising the purchase price of the airplane to \$30,000.

The Wrights were not the only Americans in the air. Glenn Hammond Curtiss flew his Golden Flyer at Morris Park, New York, for the first time on June 16, 1909. With a \$5,000 contract for the sale of that machine to the Aeronautic Society, a group of wealthy New York enthusiasts, Curtiss was officially in the airplane manufacturing business. Ten days later he flew a full circle to the delight of 5,000 spectators. On July 17, he flew twenty circles over the Hempstead Plains of Long

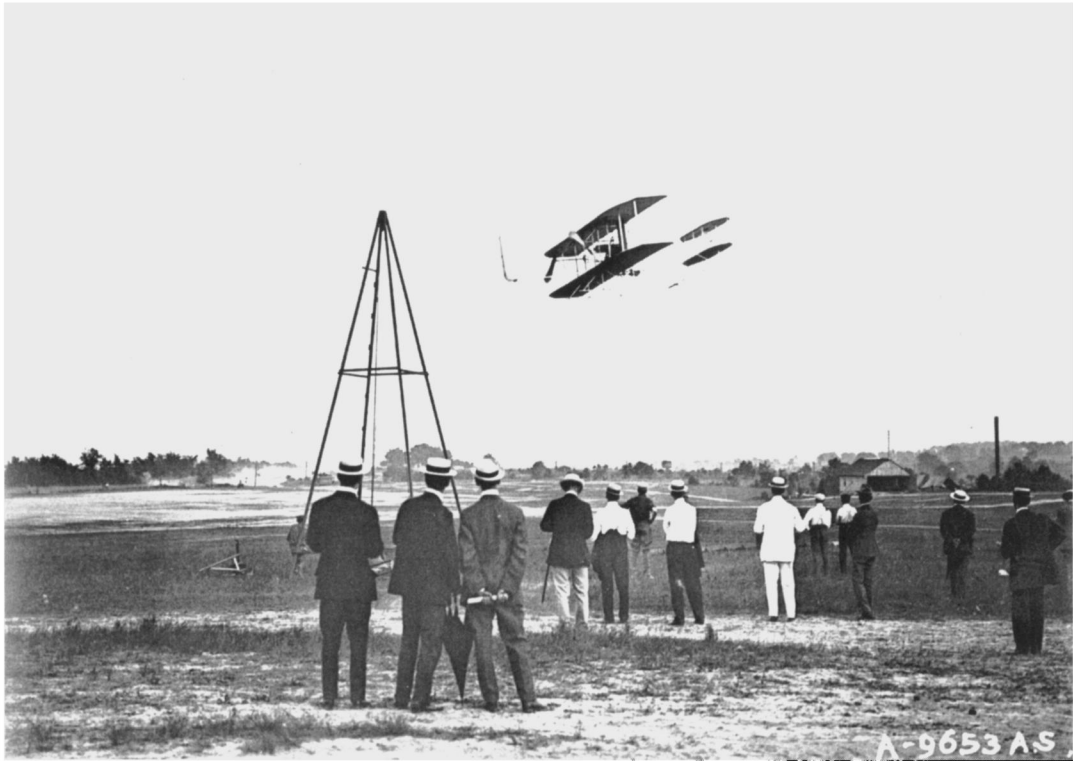
Island, covering more than twenty-five miles and collecting the second Scientific American Trophy.

European aviators were making headlines, as well. The French pioneer Louis Bleriot flew his Type XI monoplane across the English Channel on July 25, 1909. Le Grande Semaine D'Aviation de la Champagne, the world's first great air meet, was held near Reims, August 22–29 of that year. Glenn Curtiss won the James Gordon Bennett speed cup, the central event of the meet. Architect George Oakley Totten was present to cheer Curtiss on, and represent the Aero Club of Washington.¹³

So long as Curtiss was simply an experimenter, the Wrights were willing to overlook the fact that he was, in their view, infringing on their patent. Once he began to win rich prizes and produce airplanes for sale, though, it was a very different matter. On August 19, 1909, Wilbur Wright filed suit in New York to prohibit the Aeronautic Society from operating the Golden Flier on the grounds that it represented an illegal infringement on their patent. A major suit against Glenn Curtiss quickly followed. The era of the aeronautical patent suits, a series of legal battles that would not be resolved until 1917, was underway.

At the time, Orville and Katharine Wright were in Europe, having sailed aboard the *Kronprinzessin Cecilie* on August 10 and arrived in Berlin on August 19. After meeting the Kaiser, Orville made his first flight from Tempelhof Field, Berlin, on August 30. He continued to fly for the next month and a half, demonstrating the capabilities of the Wright aircraft for their German license holders.

On September 29, Wilbur took off from the parade ground on Governor's Island, in New York harbor, and flew to the Statue of Liberty and back, as part of a \$15,000 contract to participate in the Hudson-Fulton celebration. On October 4 he flew twenty miles up the Hudson River to Grant's Tomb and back in 33 minutes 33 seconds, passing over the British warships *Inflexible* and *Drake* and providing more than



Orville Wright flies at Ft. Myer, Virginia, 1909. US Air Force via National Air and Space Museum (USAF-A9653AC), Smithsonian Institution.

one million New Yorkers with their first view of an airplane in flight.

Wilbur was back in the Washington area on October 5, prepared to complete the terms of the Army contract by teaching three officers to fly. Ft. Myer, where the initial demonstration flights were held, was too small for any extended flying, but Lt. Frank Purdy Lahm had already located a much better site in suburban Maryland.

A graduate of West Point (Class of '01) and the French Cavalry School at Saumur, Lahm had known the Wrights for some years, and served as an official Army observer and passenger during the Wright trials at Ft. Myer in 1908 and 1909. Now he was to be one of the first three officers to be taught to fly. He was also an experienced aeronaut, one of the two American victors in the 1906 James Gordon

Bennett Balloon Race. While on a balloon flight over the Maryland countryside, Lahm spotted an ideal flying field near the Maryland Agricultural College in College Park. The Army leased the site with the approval of the Wrights.

After several preliminary flights from the new field on October 8, Wilbur took Lahm and Lt. Frederick E. Humphries up for their first lessons. The third pupil, Lt. Benjamin D. Foulois, arrived late at College Park and did not begin his flight training until October 23. Lahm and Humphries both soloed on October 26, becoming the nation's first military aviators. The following day, Wilbur took Mrs. Ralph Van Deman, the wife of an army officer and a friend of Katharine's, up for a spin. She was the first woman to fly as a passenger in the U.S.

Wilbur made his last flight at College Park on November 2. It was his last public flight, and one of his last as pilot in command. In the future, his attention would be focused on business. The Wright Company was incorporated under the laws of New York on November 22, with Wilbur as president and Orville as one of two vice-presidents. In addition to manufacturing aircraft and operating a flying school, the new firm and its president would pursue Glenn Curtiss and other would-be infringers through the courts with all of their resources.

As the rest of the world was moving forward into the air age, Washington was beginning to produce its own crop of aerial experimenters. Emile Berliner and his son Henry would head the list of aviation pioneers in the nation's capital for decades to come. In July 1909 the *New York Times* noted that Berliner, whose workshop was in the District's Brightwood neighborhood, was bouncing into the air with what can best be described as a rotary wing test bed. A month later, newspapers reported that the inventive Berliner had developed a winged "aerial torpedo" capable of attacking ships from above.¹⁴

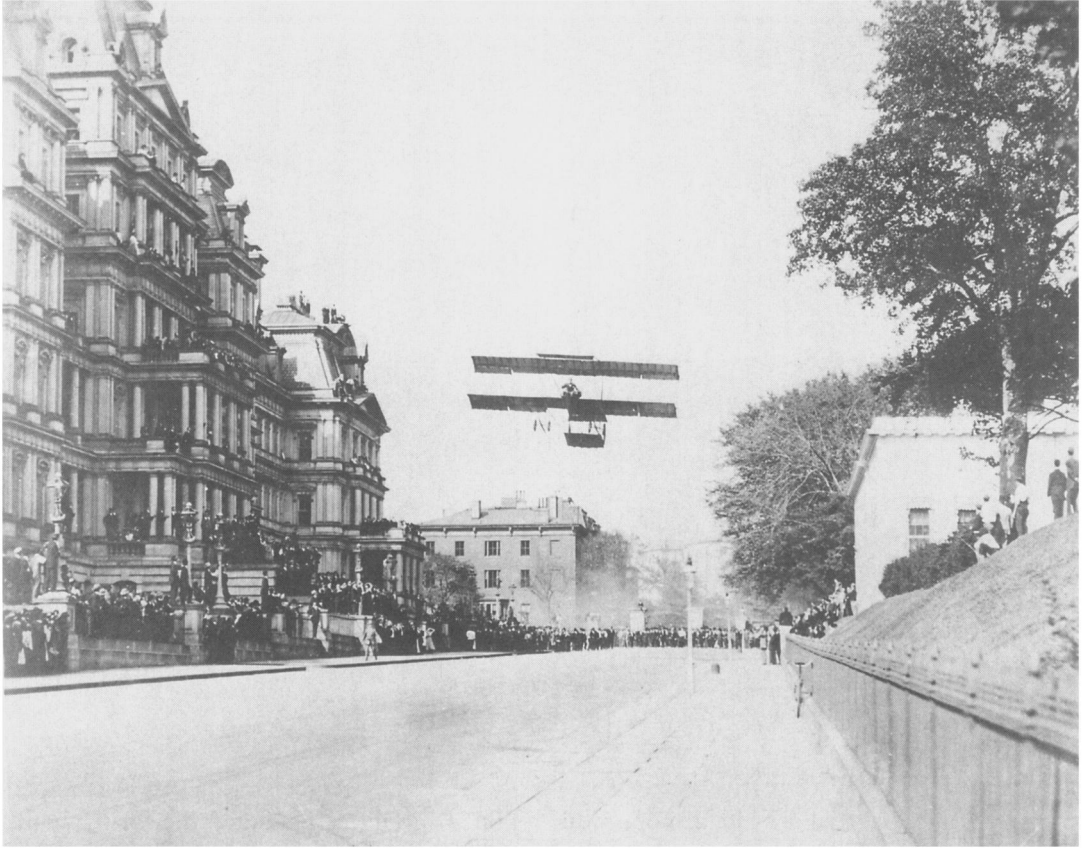
The leaders of the Aero Club of Washington were determined to encourage that kind of thing. As a result of Glenn Curtiss's victory at Reims, the U.S. would have the honor of hosting the next James Gordon Bennett race. The Washingtonians set out to capture that honor for the nation's capital. As an indication of their seriousness, the group launched a fund drive to finance the meet, starting with an initial \$11,000 promised at an October meeting that attracted three hundred local leaders.¹⁵

Members of the newly organized Baltimore Aero Club joined the Washington effort. The suggested site for the meet, College Park, Maryland, could be claimed by both cities. By mid-November, when Walsh called a joint meeting of the Washington and Baltimore sponsors at his home, the group claimed to have raised almost 4/5ths of the required

\$100,000 guarantee. Having affiliated with the Aero Club of America at a Board of Managers meeting on September 15, 1909, the Aero Club of Washington filed a formal application to host the meet with their New York colleagues. The members of an Aero Club of America inspection committee visiting College Park in February 1910 returned to New York without rendering a decision. Rumors that a site closer to New York was preferred led the joint Washington-Baltimore group to withdraw their application in April 1910. In the end, the meet was held at Belmont Park, N.Y., October 22–31, 1910.¹⁶

Undeterred, the leaders of the Aero Club of Washington pursued other means of promoting aeronautics in the nation's capital. At a meeting in mid-December, the members of the committee on exhibits voted to partner with the local automobile dealers association to sponsor an aeronautical component of an auto show to be held at the Convention Hall, the entire rear of which, a reporter noted, "has been reserved for the exhibit of birdlike machines."¹⁷

"There are more residents of Washington building aeroplanes than is generally known," a reporter visiting the aero show reported. "Two visitors last evening gave themselves away," he continued. Nosing around the displays and asking a great many questions, the men finally admitted that they were employed by wealthy Washingtonians in the market for flying machines of their own. In the end, few "birdlike machines" were on view. The Wright airplane purchased by the Army, which the promoters hoped to have on hand, was on display at an electrical show in Chicago. Chadwick Hunter, in charge of the aeronautical display, reported that a Curtiss machine was en-route to Washington and was expected to be on view before the end of the exhibition. For the time being, visitors had to be content with a Signal Corps display that included Army Balloon No. 10; a U.S. Weather Bureau exhibit; a display of propellers, and an aviation painting by artist Charles A. Dudley Gray.¹⁸



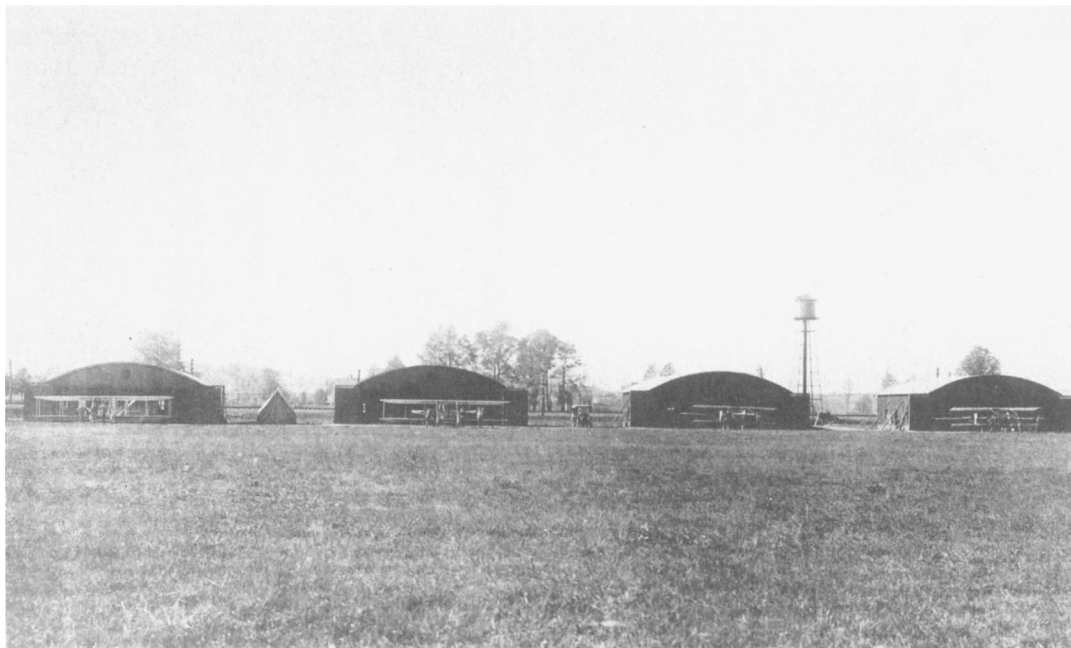
Claude Grahame-White lands near the State, War and Navy Department Building, October 11, 1910. National Air and Space Museum, Smithsonian Institution (SI 2002-29486).

As the members of the Aero Club of Washington gathered at Hubbard Memorial Hall, 16th and M Streets, NW, to re-elect their current officers in January 1909, they could look back with considerable pride on a year well spent. They had honored the Wrights, sponsored an aeronautical exhibition, published their first yearbook, fought for an aviation meet and a flying field in the Washington area, and supported the growth of local interest in aviation. After one year, the Aero Club membership roster stood at an even hundred, including, as one reporter remarked, “some of the most prominent persons in Washington’s social and official circles.” The group was in no rush to open the membership to just anyone,

the newsman noted. Secretary Zahm maintained a long waiting list of those who wished to be admitted.¹⁹

For the less elite would-be aviators, there was now an alternative organization. The Washington Aero-Scientific Club was headquartered at the YMCA, 1736 G Street, NW. Lt. Frank Lahm agreed to lecture the young men on the basics of aeronautics. M. L. Jones, the Y’s education director, noted that the Signal Corps was also considering allowing members of the group to use the flying field at College Park for their experiments.²⁰

The leaders of the Aero Club worked hard to keep their members up to date on aeronautical progress. On February 15, 1910, for ex-



U.S. Army hangars and aircraft at College Park, Md. US Air Force via National Air and Space Museum, Smithsonian Institution (SI 2002-14065).

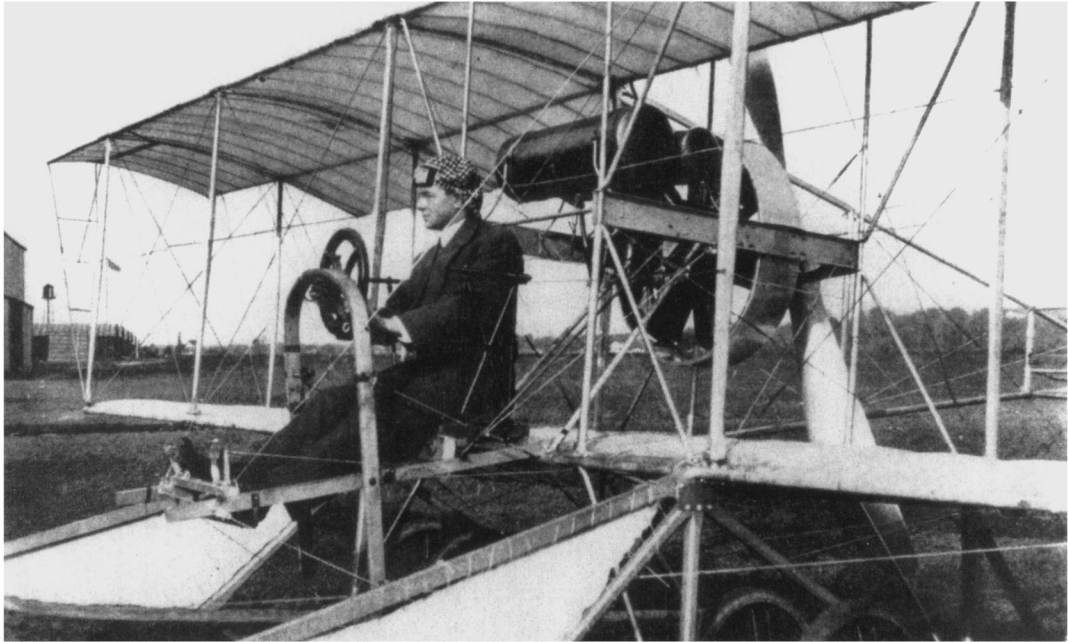
ample, the Herbert Wadsworths hosted an evening lecture by Cortland Field Bishop, president of the Aero Club of America, complete with “moving films representing the most recent developments in the art.”²¹

The members of the Aero Club continued their efforts to attract airmen to Washington, but by June 1910, negotiations with two exhibition companies had fallen through. Finally, on October 9, 1910, the *Washington Post* announced that it had offered the English aviator Claude Grahame-White \$10,000 to fly from Baltimore to Washington during the course of his exhibition flights at nearby Benning Race Track, October 13–15. Grahame-White considered the course between the cities selected by the members of the Aero Club of Washington (hereafter, ACW) to be too dangerous, but proposed another route. On October 14, he flew from the race track across Washington and landed on the street between the White House and the State, War and Navy Department Building. At a dinner held at the Cosmos Club

the next day, members of the ACW Competitions Committee presented the aviator with a silver cup commemorating the flight.²²

Members of the Aero Club also attended the Baltimore Aviation Tournament, held at Halethorpe, Baltimore County, in November 1910. Sponsored by Baltimore hotelier Jerome Joyce, the Washingtonians were whisked to the event aboard a Baltimore and Ohio train, and were able to enjoy flying demonstrations by international aeronautical stars such as Hubert Latham, Count Jacques de Lesseps, Charles Willard, J. Armstrong Drexell, Eugene Ely, Arch Hoxsey, and James Radley. The Count de Lesseps treated two leading members of the club, General James Allen and Postmaster General Frank Hitchcock, to a flight in his Bleriot XI.

The following year the members of the Aero Club were even more closely involved with an exhibition offered by members of the Curtiss exhibition team at the Benning Race Track. As the official representatives of the National



Rexford "Rex" Smith in his airplane at College Park, Md. National Air and Space Museum, Smithsonian Institution (SI 75-11402).

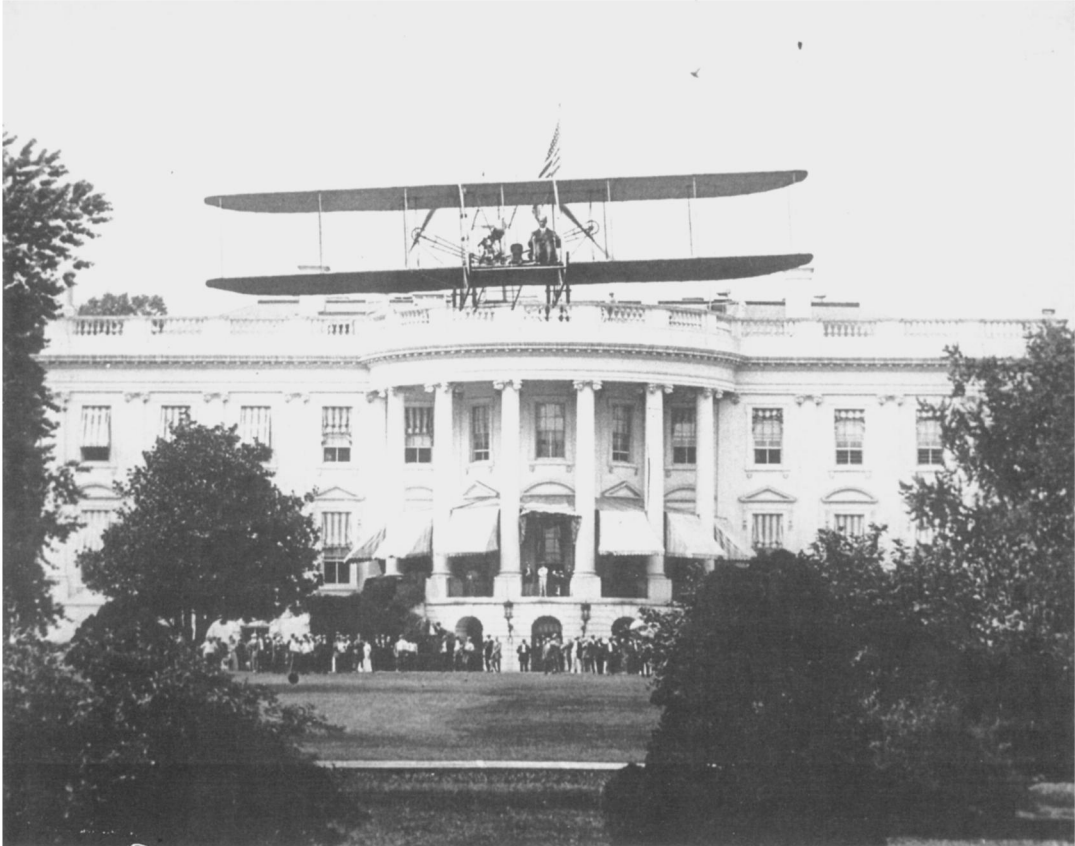
Council of Aero Clubs, members of the ACW would certify any records set as Glenn Curtiss, Lincoln Beachey, J. A. D. McCurdy, Hugh Robinson, and Rowland Middleton took to the air on May 5, 6 and 7, 1911. Hundreds of spectators forked over fifty cents each to watch Beachey, "one of the pluckiest aviators in America," take off on the first day, climb to three hundred feet and disappear in the direction of the city. Having flown this course five years before in a one-man airship, Beachey circled the Capital dome and returned to the race track. "I couldn't resist the temptation," he remarked to reporters. The next day, May 6, was the anniversary of the first successful flight of Samuel Pierpont Langley's model Aerodrome No. 5 and was celebrated at the meet as "Langley Day." It was the first of an annual series of commemorations sponsored by the club for the rest of its early active history.²³

Aero Club members kept a close eye on activities at College Park, where several civilian aviators began flying in 1910. Rexford "Rex"

Smith was the early leader at the Maryland field. Washington native Anthony "Tony" Janus began taking flying lessons from Smith at College Park in November 1910. That fall and winter, hundreds of Washingtonians traveled to College Park to watch as the two men circled the field and extended their time in the air flying Smith's first Curtiss-type machine.²⁴

The Army joined the amateur experimenters at College Park in the spring of 1911. Bids for the construction of four new hangers to house the Army aircraft that would be operated at the field were opened on May 26. Officials were in the process of designating a new group of officers who would be trained to fly by Lts. Henry H. "Hap" Arnold and Thomas DeWitt Milling, both of whom had been trained at the Wright school near Dayton, Ohio. Lt. Foulois would operate a second flying school at Ft. Sam Houston, Texas.²⁵

The first two students assigned to flight training at College Park, Lts. Roy C. Kirtland and Charles De Forrest Chandler, began train-



Harry Atwood pays a flying visit to the White House, July 14, 1911. National Air and Space Museum, Smithsonian Institution (SI 2002-16613).

ing before the end of June. General Allen, who drove out to the field to watch the flying on June 28, told a newsman that applications for flight training were pouring into the War Department, convincing him that “it would be much easier to get men than machines.”²⁶

Excitement swept through Washington on July 10 when an airplane made three broad sweeps around the city. Pennsylvania Avenue was clogged with people looking up toward the sky. Vice President James S. Sherman loaded friends into a car and headed to Potomac Park, where he expected the aircraft to land. Four thousand people gathered on the Washington Monument grounds, which they regarded as a more promising landing spot. The members of the Senate grabbed their hats and

ran out to the terrace of the Capital to witness what one reporter described as “the most sensational flight ever witnessed in Washington,” at least the most sensational since Claude Grahame-White had landed on Executive Avenue the year before.²⁷

The crowds assumed that the Wright Model B in the sky was flown by Harry Atwood, an MIT-trained electrical engineer and member of the Wright Exhibition team, whose arrival from Baltimore had been expected for several days. In fact, it was Lts. Arnold and Kirkwood. Aware that all of Washington had been waiting for Atwood to fly over the city for the last several days, the two officers could not resist perpetrating an aerial “hoax.”

Atwood, who had begun his flight in his

native Boston the week before, did not arrive at College Park until the next day, having been held up by weather and problems with his own airplane. "Had I known that College Park was so far from Washington," he explained to a reporter, "I would not have stopped there . . . but would have continued right on to the Monument grounds."²⁸

Announcing that he was waiting for the delivery of a new airplane, Atwood drove to the White House to meet President Taft on July 12. When the president expressed doubt that they would ever develop an aircraft powerful enough to lift him into the air, the aviator immediately offered to take him aloft. Taft declined the invitation. The aviator finally made the flight in a Wright Model B aircraft, flying from College Park to a landing on the South Lawn of the White House on the afternoon of July 14.

President Taft, his military aide Maj. Archie Butt, Assistant Secretary of War General Robert Shaw Oliver, the aviator's mother, and a delegation from the Aero Club of Washington received Atwood on the South Portico. Taft presented the aviator with a gold medal from the Aero Club of Washington, with the route of his flight from Boston to the White House marked in small diamonds. After offering appropriate thanks, Atwood took off, clearing the fountain on the south lawn by twenty feet, and flew to the polo grounds, where his airplane was placed under guard until it could be disassembled and shipped back to New York.²⁹

The Aero Club of Washington enjoyed remarkably stable leadership during the five years following its establishment. President Thomas F. Walsh, who died on April 8, 1910, was replaced by Lieutenant General Nelson Appleton Miles (1911), retired Commanding General of the U.S. Army, followed by Willis L. Moore (1912), head of the U.S. Weather Bureau. Brigadier General James Allen, Chief Signal Officer, replaced Moore, and held the office of president from 1913 until 1928.

Clearly, however, Albert Francis Zahm (1862–1954) was *the* key figure in the management of the organization during these years and remained a force to be reckoned with in Washington aeronautical circles for decades to come. A native of New Lexington, Ohio, Zahm was the eighth of fourteen children. He entered Notre Dame in 1879 and began his own aeronautical experiments a year later. He conducted flight tests with models and full-scale gliders, and built what may well have been the first wind tunnel in the U.S., using a farmer's hand-powered winnowing blower to move air over the test surface.

He served for a time as a Professor of Mechanical Engineering at Notre Dame following his own graduation, then earned an MS from Cornell University in 1892. The following year he cooperated with Chicago engineer Octave Chanute to organize an important aeronautical conference as part of Chicago's World's Columbian Exposition. After earning a PhD in physics from the Johns Hopkins University, Zahm settled into life as a professor of mechanical engineering at Catholic University, where he built and operated what was then the world's largest wind tunnel.³⁰

In 1913, Secretary of the Smithsonian Charles Doolittle Walcott created the Langley Aerodynamical Laboratory at the Smithsonian and appointed Zahm to head the organization, which he hoped would evolve into a national flight research facility. That year Zahm accompanied Jerome Hunsacker of MIT on an extended tour of European aeronautical laboratories that would have considerable consequences for the future of aerodynamic research in the United States.

Soon after his return from the European tour, Secretary Walcott asked Zahm, as head of the Langley Laboratory, to assist Glenn Curtiss in rebuilding and test flying the shattered remains of the 1903 Langley Aerodrome. Curtiss, whom the Wright brothers were suing for patent infringement, argued that he was interested in investigating the performance of tan-

dem wing airplanes. It was clear to everyone, however, that the real goal was to get the old machine into the air in order to demonstrate to the courts that someone had been “capable of flight” before the Wrights.

If the goal was to return the Aerodrome to its 1903 condition, Curtiss and Zahm failed miserably. The new wings constructed for the machine in the Curtiss plant at Hammondsport, New York, differed from the originals in chord (the straight-line distance from the leading edge to the trailing edge), camber (distance from the peak of the arch of the wing to the imaginary chord line), and aspect ratio (the ratio of span to chord). The trussing system that linked the wings to the fuselage was much different as well. The king posts had been relocated, and the wires were trussed to different spars at different points. This was particularly important, for most authorities believed that the failure of the wing structure, not a catapult defect, had been responsible for the 1903 disaster.³¹

And there were other changes. Curtiss fitted the craft with his own yoke-and-wheel flight control system. He moved the pilot from his 1903 location to a new position on top of the machine. This had the advantage of insuring that the pilot would not end a successful flight underwater, as would have been the case in 1903, when the cockpit was below what would have been the waterline in the case of a safe landing. After the first trial, he altered the tail to serve as both rudder and elevator. Finally he rejected the old catapult launch system, instead mounting the machine on floats. This change can be excused in the name of simple self-preservation. It does not seem to have occurred to anyone at the time that Curtiss had come up with a way to land the machine safely, which had been impossible with the original craft. In short, he had transformed a machine that had failed to fly in 1903 into a less than satisfactory 1914 airplane.³²

On the morning on May 28, 1914, the rebuilt Aerodrome, with Curtiss at the controls,

sped across the surface of Lake Keuka, near the site of the Curtiss factory, and lifted into the air for a flight of 150 feet. After a few additional hops of similar length, the craft was taken back into the shop, where the 1903 Langley engine was replaced with a modern Curtiss power plant. Walter Johnson and Gink Doherty made additional flights with the new engine in place.

The ploy had no impact on the patent suit. In spite of the flights of the much altered Aerodrome, and Albert Zahm’s expert testimony on behalf of Curtiss, the federal appeals court continued to rule in favor of the Wright brothers. Still, Zahm and Secretary Walcott, intent on restoring the reputation of his friend and predecessor Samuel Langley, were overjoyed with the results of the Hammondsport trials.

In an account of the tests published in the 1914 Smithsonian *Annual Report*, Zahm claimed that the Aerodrome “has demonstrated that with its original structure and power, it is capable of flying with a pilot and several hundred pounds of useful load. It is the first aeroplane in the history of the world of which this can truthfully be said.” Rather than providing a list of critically important alterations, Zahm lied, reporting that the old Aerodrome had been flown “without modifications.” “With a thrust of 450 pounds,” he concluded, “the Langley aeroplane, without floats, restored to its original condition and provided with stronger bearings, should be able to carry a man and sufficient supplies for a voyage lasting practically the whole day.”³³

This was only the beginning. The 1915 *Annual Report* repeated the claim: “The tests thus far made have shown that former Secretary Langley had succeeded in building the first aeroplane capable of sustained free flight with a man.” Similar statements would appear in various Smithsonian publications in years to come. Then there was the label. When the Aerodrome was shipped back from Hammondsport, Walcott ordered that it be returned to its original 1903 condition and displayed in

the Arts and Industries Building with a label explaining that it was the “first man-carrying aeroplane in the history of the world capable of sustained free flight.”³⁴

The episode marked the beginning of a three-decades-long feud between Orville Wright and the Smithsonian. In 1928, exasperated at his inability to convince Smithsonian officials to admit that the Aerodrome flown in 1914 was very different from the 1903 original, and that the resulting tests were by no means proof that the Aerodrome as originally constructed was “capable of flight,” Orville Wright sent the original 1903 airplane to the London Science Museum, where it would remain for the next two decades. The world’s first airplane returned to the U.S., and the Smithsonian, in 1948, following an admission by officials of the Institution that the 1914 test had certainly not demonstrated that the Langley aircraft was “capable of flight.”

With the end of the Langley trials at Hammondsport, Zahm found himself without a job. Congressional leaders had decided that there should be a national aeronautical research organization but that it should be independent of the Smithsonian. Glenn Curtiss stepped forward with stop-gap employment, hiring Zahm, who had testified on his behalf during the ongoing patent suit, as a consulting engineer.

Zahm returned to the nation’s capital in 1916, accepting a position as head of aerodynamic research at the Washington Navy Yard and operating a wind tunnel constructed in 1913. He would remain in that post until 1930, when he was named chief of the Aeronautics Division of the Library of Congress, where he would remain until his retirement in 1946, still doing his best to argue that someone, anyone, had flown before the Wright brothers.

Zahm’s absence from the nation’s capital during the period 1914–1916 was short but came at a critical moment in the history of the Aero Club of Washington. ACW mem-



James Allen, Chief Signal Officer, U.S. Army. US Air Force via National Air and Space Museum (USAF-119566AC), Smithsonian Institution.

bership climbed to a peak of 102 in 1912, including such stellar military figures as Admiral George Dewey, the leaders of aviation in both the army and the navy, and the mix of government officials, aviation experimenters and enthusiasts, and social figures of the sort who had founded the organization. While the treasury never overflowed with cash, neither were expenses overwhelming. Financial records indicate that the peak balance, \$1,623.41, was on the books on March 24, 1910.³⁵

The heaviest expenses were for the annual Langley Day celebrations, and for the receptions, honors, and awards accorded visiting aviators. The Cosmos Club bill for the 1909 luncheon honoring the Wrights totaled \$290.75. The dinner tendered to Claude Grahame-White in 1910 set the club back \$52.85, a bit more than they spent on the trophy presented to him, which cost all of \$48.20. The Board of Management paid \$40 for the medal that went to Harry Atwood the following year.

The \$102.50 paid for the most expensive piece of office equipment, an Underwood typewriter, puts the expense of the honors and awards in perspective.³⁶

The club explored ways in which to encourage the desire of members to acquire an airplane and learn to fly. In 1911, for example, the Wright Company offered to give ten members a fifteen-minute flight for a price of \$100 each. The money could be applied toward the purchase of an airplane and the cost of lessons. None of the members took advantage of the opportunity.³⁷

The members of the Aero Club also worked to improve the local aviation infrastructure. Serious efforts were made to persuade Congress to provide a flying field near the city, to develop military air fields in the area, and to establish a national aeronautical laboratory.³⁸

A major function of the organization remained the sponsorship of meetings, lectures, and other events where members could maintain contact with other Washingtonians interested in aviation issues. The Langley Day commemoration begun in 1911 became an annual event. In 1912 the leadership rented the Chevy Chase Country Club for \$193.60 for the celebration. President Willis Moore gave a short talk on Samuel Langley to the members and guests assembled on the veranda and lawn west of the club house, after which a group of airplanes from College Park, led by Capt. Charles de Forest Chandler, flew low overhead and performed "aerial maneuvers" above the golf course.³⁹

In 1913, the club paid \$259.59 to rent the Washington Barracks for the annual celebration. The group began the day with a ceremony honoring Langley at the Smithsonian Castle, after which they trooped down to the War College. This time, Naval aviators operating "hydroaeroplanes" treated the attendees to short flights up and down the Potomac.⁴⁰

Yet by 1912, interest in the activities of the Aero Club of Washington had begun to wane. On March 20, 1912, Charles J. Bell, president

of the American Security and Trust Company of Washington, D.C., and Alexander Graham Bell's son-in-law, wrote to Aero Club president Willis L. Moore, resigning as treasurer, a post he had held since the birth of the organization. Explaining, with more than a trace of irony, that he found his official duties "extremely arduous," he complained that while Moore had "informally" instructed him to discontinue renting the club rooms in the Union Trust Building, he had not received any official notice on the matter from Secretary Zahm. "If therefore the members of the board are still alive," he continued, "will you not place my resignation before them." Bell concluded by suggesting that "the life membership fees be returned to the persons contributing the money and not spent for simply providing an office for the Secretary."⁴¹

The storm must have passed, for in mid-July 1913, Zahm wrote to Bell, still obviously serving as treasurer, enclosing "the last of the outstanding bills against the Club, and, except for the room rent, all there will likely be for some months."⁴² The office was finally closed in 1913. The furnishings went into rented storage, with the exception of the secretary's roll-top desk, the typewriter, and a filing cabinet containing the records of the organization, which Zahm moved to his home.⁴³

Although the club roster still included ninety-four names at the end of January 1914, including the usual assortment of generals and admirals, as well as aeronautical pioneers such as Glenn Curtiss, the records indicate an increasing number of resignations by the fall of that year. Secretary Zahm reported to the membership that the Board of Management had decided to return all dues for the year 1915, while requesting that back dues be paid in full. For all practical purposes, the club was now inactive.⁴⁴

There were still occasional stirrings. In the fall of 1917, Zahm sent Bell an itemized list of nineteen items of club property on which the organization was still paying storage costs, in-

cluding the desk and office equipment, chairs (“marred”), bookcases (“marred”), drop lights, the door mat, and three waste baskets (“& contents”). On paper, at least, the organization continued to exist, and the officers at least occasionally tended to its business. On March 24, 1921, for example, Bell wrote to President James Allen, suggesting that the furnishings, which had been in storage for eight years, be donated to Children’s Hospital.⁴⁵

How are we to explain the collapse of the Aero Club of Washington at the very moment when aviation activity was expanding in the nation’s capital? Albert Zahm was the closest thing the organization had to a full-time “volunteer” coordinator. The club seems to have lost focus and direction and suffered a lapse of programming during the years from 1914 to 1916, when he was absent from Washington for long periods of time. As late as June 1916, Zahm informed Bell: “It is uncertain when I shall be able to return to Washington. The experimental work here [with Curtiss] is fascinating and may continue for a considerable time.” When Zahm did return to the capital later that year, the ACW was dormant.⁴⁶

There were other factors, however. With the approach of war in Europe, military and government officials were tracking the progress of the technology among the warring powers. In 1915, Congress established an Advisory Committee for Aeronautics, soon to become known as the NACA, with its headquarters on Lafayette Square. With U.S. entry into the war, Washington became a center of military aviation activity. By the time of the Armistice, the already historic flying field at College Park, Maryland, was the base of operations for regular air mail service between Washington and New York, operated first by the U.S. Army Air Service, and then later by the U.S. Post Office. With aeronautical activity on the rise in the nation’s capital, the efforts of a private organization aimed at drumming up local support for aviation no longer seemed as important as had once been the case.

That attitude began to change with the return of peace. In the post-war era of “normalcy” there was less high-level enthusiasm for spending tax dollars on military aviation or flight research. Aeronautical enthusiasts took note and resumed activities designed to underscore the importance of aviation. In 1922 the old Aero Club of America reorganized itself into the National Aeronautic Association, announcing that the goal of the NAA was to “Make America First in the Air.” One way to achieve that end was to sponsor competitions and offer honors and awards. As part of that effort, the NAA affiliated with the *Fédération Aéronautique Internationale*, becoming the official American organization overseeing aerial competitions and certifying international aviation records in the U.S.

On September 19, 1924, the national organization granted a charter to a District of Columbia Chapter of the NAA. Like the Aero Club of Washington, the new organization hosted luncheons for visiting aviation celebrities, including Charles Lindbergh, Alan Cobham, General Francisco de Pineda, and Army lieutenants Lester Maitland and Albert Hengenberger. For several years, the group hosted the Curtiss Marine Trophy Races in Washington. The new organization played a role very similar to that envisioned by the founders of the Aero Club of Washington.⁴⁷

Henry Berliner, whose family roots included involvement in the Aero Club of Washington two decades before, was elected president of the District chapter of the NAA on February 7, 1928. That evening, the members of the chapter discussed plans for reviving and consolidating with the Aero Club of Washington, and delegated Berliner to open negotiations with General James Allen, who had been president of the Aero Club for sixteen very quiet years.

Berliner wrote to C. J. Bell, still serving as the official treasurer of the Aero Club, outlining the details of a merger proposal, including an agreement to drop the designation, “Dis-

treict Chapter, NAA,” in favor of, “The Aero Club of Washington.” Eleven months later, on January 13, 1929, the two organizations officially merged. On a motion by Dr. George W. Lewis, Director of Research for the National Advisory Committee for Aeronautics, the entire membership of the District of Columbia NAA chapter was accepted into membership in the Aero Club of Washington without an initiation fee.⁴⁸

The organization born to celebrate the achievement of the Wright brothers was re-born in the era of Charles Lindbergh. A century after its founding, the Aero Club of Washington continues to provide a place where avi-

ation professionals and enthusiasts alike—engineers, manufacturers, politicians, lobbyists, pilots, airline executives, and historians—can meet to share their common passion for flight and listen to presentations from those who are shaping the aerospace enterprise. Once a year, this essentially local organization steps onto the national stage, hosting the annual presentation of the NAA’s prestigious Wright Trophy, awarded for both lifetime and current achievements. Surely the founders of the Aero Club of Washington would be pleased to know that their organization continues to serve the useful purposes for which they intended it.

◉ NOTES ◉

1. “Honor to the Wrights,” *Washington Post*, June 11, 1909, 1. The reception committee included: Major George O. Squire, Executive Officer to the Chief of the U.S. Army Signal Corps; C. J. Bell, Treasurer of the Aero Club of Washington; Dr. Albert Francis Zahm, an aeronautical pioneer then teaching physics at Catholic University; architect George Oakley Totten, William A. DeCaindry, G. R. Putnam, and D. J. McComb. A. Holland Forbes, and Allen Hawley represented the New York based Aero Club of America.

2. *Ibid.*

3. “Success Well Won Taft Tells Wrights,” *New York Times*, June 11, 1909, 2. It is interesting to note that, while former president Roosevelt did not join the Aero Club of Washington, his son, twenty-two-year-old Theodore Roosevelt, Jr., joined in 1909 and remained a member in good standing until 1914.

4. “Dirigible Is Accepted,” *Washington Post*, August 18, 1908, 2.

5. “An Aero Club for Washington,” *Aeronautics*, September 1908, 34.

6. “Will Organize Aero Club,” *Washington Post*, December 20, 1908, 19.

7. The original members of the Board of Management were: Vice-Presidents – Assistant Secretary of War General Robert Shaw Oliver; novelist Thomas Nelson Page; Butler Ames; Corresponding Secretary Albert Cushman; Recording Secretary Albert F. Zahm; Treasurer Charles Bell; Trustees John Barrett, Alexander Graham Bell, and Willis L. Moore, Chief of the U.S. Weather Bureau.

8. The members of the organizing committee were: James Allen, Butler Ames, John Barrett, Alexander Graham Bell, Charles Bell, Charles S. Cromwell, Richard B. Crecy, Albert Cushman, Clarence Edwards, David Fairchild, Jerome Fanciulli, General A. W. Greely, George H. Harris, Frank P. Lahm, C. L. Marlatt, Russell McLennan, Willis Moore, Secretary of the Navy Truman H. Newberry, Assistant Secretary of War General Robert Shaw Oliver, Thomas Nelson Page, Herbert Parsons, Major George O. Squier, Lt. George C. Sweet, USN, Director of the Coast and Geodetic Survey Otto H. Tittmann, architect George O. Totten, Albert Francis Zahm, Clarence R. Wilson, and Secretary of War Luke E. Wright.

9. *Aero Club of Washington, 1962–63* (Washington, D.C.: Aero Club of Washington, 1964), 3–4.

10. For details on Thomas F. Walsh, see Evelyn Walsh McLean, *Father Struck It Rich* (Boston: Little, Brown and Company, 1936).

11. "Aero Gossip," *Washington Post*, December 19, 1909, TP3; "History of the Aero Club of Washington," *Aero Club of Washington: District of Columbia Chapter, National Aeronautic Association* (Washington, D.C., 1929), 8–9. A copy is in the files of the NASM archive.

12. Note on Early Membership, folder, "Assets and Liabilities, 1909–1914," box 1, Papers of the Aero Club of Washington., Manuscript Division, Library of Congress (hereafter cited as PACW). The complete membership and dues records are to be found in two ledger books in box 2, PACW.

13. "To Finance Aero Meet," *Washington Post*, October 26, 1909, 11.

14. "Helicopter Lifts Operator," *New York Times*, July 1, 1909, 4; "New Engine of Death," *Los Angeles Times*, August 15, 1909, 11.

15. "Aero Fund Started," *Washington Post*, October 27, 1909, 1. President Walsh primed the pump with a \$2,000 donation.

16. Contemporary Washington newspapers are filled with articles on the struggle to attract the air meet. See for example: "Swell Aero Fund," *Washington Post*, October 28, 1909, 2; "To Press Aero Claims," *ibid.*, November 11, 1909, 3; "Aero Meet Is Nearer," *ibid.*, November 27, 1909, 4; "Divided on Aero Meet," *ibid.*, January 3, 1910, 9; "Aero Club is Weary," *ibid.*, April 10, 1910, 10.

17. "Week of Aeronautics," *Washington Post*, January 23, 1910, A6.

18. "Build Private Aeros," *ibid.*, January 27, 1910, 11.

19. "Aeroplane Gossip," *ibid.*, January 9, 1910, A15.

20. "To Form Aero Club," *ibid.*, October 12, 1909, 3; "New Aero Club Organized," *ibid.*, October 13, 1909, 5.

21. *Aero Club of Washington 1910* (Washington, D.C.: Aero Club of Washington, 1910), 59–60.

22. *Ibid.*

23. "Circle Capital Dome," *Washington Post*, May 6, 1911, 3.

24. "Aviation Show opened," *Washington Post*,

October 4, 1910, 16; "Capital Aviators Fly," *ibid.*, November 21, 1910, 4; "Flies in Snowstorm," *ibid.*, December 11, 1910, 13; "Flies at College Park," *ibid.*, January 7, 1911, 1.

25. "Army and Navy Gossip," *ibid.*, May 14, 1911, F2; "Guard Pioneer Plane," *New York Times*, June 18, 1911, 2.

26. "U.S. Aero Rises High," *Washington Post*, June 29, 1911, 1.

27. "Plays Hoax in the Air," *ibid.*, July 11, 1911, 1.

28. "No Ride for Taft," *ibid.*, July 13, 1911, 3.

29. "Taft Greets Atwood After Rainy Flight," *New York Times*, July 15, 1911, 2.

30. For information on the life and career of Albert Francis Zahm, see: Zahm, *Aeronautical Papers, 1885–1945* (South Bend: University of Notre Dame Press, 1950); Tom D. Crouch, *A Dream of Wings: Americans and the Airplane, 1875–1905* (New York: W. W. Norton, Inc., 1981); <http://astro4.ast.vill.edu/mendel/zahm.htm>, last accessed on December 9, 2009.

31. See, for example, Raymond A. Bisplinghoff, *Aeroelasticity* (Cambridge, Mass.: Addison-Wesley, 1955), 3.

32. For a complete catalogue of changes to the 1903 Aerodrome, see: C. G. Abbot, "The 1914 Tests of the Langley 'Aerodrome,'" (Washington, D.C.: The Smithsonian Institution, 1942).

33. Zahm, "The First Man-Carrying Aeroplane Capable of Sustained Free Flight: Langley's Success as a Pioneer in Aviation" (Washington, D.C.: GPO, 1915), 222.

34. *Annual Report of the Smithsonian Institution, 1914* (Washington, D.C.: GPO, 1915), 122.

35. Statement of Charles J. Bell, March 24, 1910; Profit and Loss Account for the Year ending Decemr 31, 1909, both in folder "Assets and Liabilities, 1909–1914," box 1, PACW.

36. Statements of Assets and Liabilities, December 31, 1909; Statement of Assets and Liabilities, December 31, 1910; Statement of Charles J. Bell, December 31, 1912, all in folder "Assets and Liabilities 1909–1914," box 1, PACW.

37. *Aero Club of Washington, District of Columbia Chapter, National Aeronautic Association*, 11.

38. *Ibid.*, 12.
39. Statement of C. J. Bell, December 31, 1912, folder "Assets and Liabilities," box 1, PACW.
40. Profit and Loss Accounts for the Year Ending December 31, 1913; Statement of C. J. Bell, December 31, 1914, both in folder "Accounts and Liabilities, 1909–1914," box 1, PACW.
41. C. J. Bell to W. L. Moore, March 20, 1912, folder "Correspondence 1912–1913," box 1, PACW.
42. A. F. Zahm to C. J. Bell, July 15, 1913, folder "Correspondence, 1912–1913," box 1, PACW.
43. A. F. Zahm to C. J. Bell, June 2, 1916, folder "Correspondence, 1914–1919." See also Note on the Security Storage Company, in folder, "Furniture Store Bills for Storage, 1914–June 23, 1923," box 1, PACW.
44. *Ibid.*
45. C. J. Bell to J. Allen, March 24, 1921, in folder "Correspondence, 1914–1919," PACW.
46. Albert Francis A. F. Zahm to Charles C. J. Bell, June 23, 1916, in folder, "Correspondence, 1914–1923," PACW.
47. *Aero Club of Washington, District of Columbia Chapter, National Aeronautic Association*, 12.
48. "Berliner Reelected Aero Club Chapter Head," *Washington Post*, February 8, 1929, 8; "Capital Air Clubs Unite Tomorrow," *ibid.*, January 21, 1929, 14.; Henry A. Berliner to C. J. Bell, February 18, 1928, in folder, "1928 Affiliation With NAA," box 1, PACW.