

LANGLEY AIR FORCE BASE

Historic Walking Tour

HEAVIER-THAN-AIR AREA





Samuel P. Langley

*L*angley Air Force Base takes its name from Samuel Pierpont Langley, born in Roxbury, Massachusetts, on August 22, 1834. Langley's wide-ranging career included holding a professorship in astronomy and physics at Western University of Pennsylvania, serving as Secretary of the Smithsonian Institution, and conducting a study in the possibility of heavier-than-air flight. On May 6, 1896, his steam-powered Aerodrome #5 flew just over one-half mile in 90 seconds. This was the first sustained heavier-than air machine flight in history.

At the outbreak of the Spanish American War in 1898, the War Department gave Samuel Langley a \$50,000 grant to study the military use of "manned aerodromes." Langley tested his "manned aerodromes" in October 1903, and again in December, both tests failed. His sense of failure was heightened on December 17, 1903 when the Wright Brothers succeeded in the first manned flight. After that Langley never resumed his experiments and died from a stroke on February 17, 1906.

Langley AFB Background

In August 1916, two years after WWI began, the Army appointed a board of officers to look for a suitable site to base an aviation field and to conduct aeronautical experiments. This board teamed up with the National Advisory Committee for Aeronautics (NACA) and selected the current site for this base. The team leader, Lt. Colonel George O. Squier, sought to name the site after Samuel Langley because of Langley's life-long pursuit of heavier-than-air flight.

The original site for what would be called Langley Field consisted of 1,659 acres and was purchased for \$290,000 by congressional appropriation. Lieutenant Colonel Squier, later Brigadier General Squier, head of the Army Signal Corps, secured two million dollars to fund projects including an airstrip and road grading, air and seaplane hangars, a hydrogen gas plant for airships, machine and engine shops, a radio tower, a wind tunnel and a boathouse. Contracts were also made for river dredging, lighting and power facilities.

Albert Kahn of Detroit, one of the leading industrial architects in the country, noted for his classical and neo classical designs, was selected to design the installation. He expressed an artistic vision in striking exterior design patterns featuring intricate brick and tile arrangements with innovative building materials, many of which you will see on this tour.



Decorative brick patterns for Langley buildings, 1919.



The main portion of Langley AFB has retained much of Kahn's original street pattern and many of his buildings, both office and duplex housing.

We hope you will experience the rich history of air power while you take this tour. Welcome to Langley AFB—home of Air Combat Command (ACC) and the First Fighter Wing.

The Tour

The walking tour begins at the **LANGLEY OFFICERS' CLUB** parking lot (128 Benedict, Bldg 412).

The Officers' club was constructed in 1935 for a cost of \$73,061. The club was constructed on the site of the old Sherwood Plantation farm house.



Maj Charles C. Benedict was killed during flight training at Langley Field in May 1925.

Now, walk down **BENEDICT AVENUE** toward the senior officer housing. This street was named for Maj Charles C. Benedict, who was killed in a flying accident before he graduated from the Air Service Tactical School. These residences were built in 1934 and are high-style examples of Tudor Revival architecture. Walls are brick, with many doors and windows trimmed in stone. Roof gables on the side facades have diamond-patterned brick diaper work. These are reminiscent of English manor homes and are influenced by the City Beautiful Movement of the late 19th and early 20th Centuries.

The **COMMAND HOUSE** is located at 150 Benedict Avenue. The senior officer assigned to Langley AFB has resided in this house since 1934. It is now occupied by the Commander of Air Combat Command. The Command House is an outstanding example of the Tudor style so popular in the early 1920s and early 1930s. All the classic Tudor features are present: a side-gabled, steeply pitched slate roof; a front façade dominated by a prominent cross gable; tall windows, grouped and holding multiple panes; a small front entrance detailed in stone with a heavy wood door; massive chimneys; and contrasting materials on the exterior walls, the first story brick and the

The **COMMAND HOUSE** is located at 150 Benedict Avenue. The senior officer assigned to Langley AFB has resided in this house since



upper stories with half-timbers filled with stucco or brick. The first occupant of the Command House was Colonel Charles H. Danforth, Commander of the 2nd Wing.

Continue walking down Benedict and turn left on Bryant Avenue, and walk one block to Dodd Boulevard and turn right. The building on the right (162 Dodd, Bldg 546) houses the ACC Surgeon and the ACC Historian Offices; originally it was the **AIR SERVICE TACTICAL SCHOOL BARRACKS**. In



November 1920 the Tactical school was opened and was located in what today is ACC Headquarters further down on Dodd. The school was the first of its kind to provide professional education for air officers. Known initially as the Field Officers' School, it was renamed the Air Service Tactical School in 1922 and finally, the Air Corps Tactical School (ACTS) in 1926. This was the first school in the world to teach the military aviation tactics. In 1931 the school was moved to what is now Maxwell AFB, Alabama, and helped form what we now know as the Air University.



As you continue on Dodd and cross Bowen Street on the right is the **CHAPEL ANNEX**. Built in 1939 as an elementary school (180 Dodd, Bldg 591), this historic building is a prime example of Colonial Revival architecture; characteristics include a hipped roof, dormer vents, cupolas and a large

central section with wings. Even today, the original blackboards remain in several of the rooms if you would care to go inside. The USAF was the first military service to integrate in 1948, and this school followed that tradition. The integrated base school operated into the 1960s, since the local off-base schools were not integrated.

Located on the left side of Dodd Boulevard (181 Dodd, Bldg 520) is the **CHAPEL** which was built in 1935. The Tudor-Gothic structure, designed by Wickham C. Taylor, is made of handmade brick and Indiana limestone. This chapel is representative of a new generation of English Gothic churches with



details that include a pointed entrance arch, pitched roofline, cross-shaped plan, and decorated wall and corner buttresses. Notice the iconography above the main entrance of the chapel. The shield, representing defense, or a defender, is a common image in heraldry as well as in military emblems. The stripes in the shield mimic the stripes in the United States flag. The scroll at the bottom of the shield is also a common element and can be used to illustrate textual information. The inscription above reads, “These fly as a cloud,” from the Old Testament book of Isaiah. Take a moment to



cross the street and enter to see the Air Force symbols and military medals in the beautiful stained glass windows. And be sure to visit the side chapel as well.

Continue walking along Dodd and turn right on Thompson Street. On your left is one of the more historic buildings on Langley (190 Dodd, Bldg 587). While it now houses the ACC **“GENERAL BILL CREECH” CONFERENCE CENTER** (General Creech was the Commander, Tactical Air Command, 1979-1984) and a number of administrative offices, it was the original home of the National Advisory Committee on Aeronautics (NACA), an original co-founder of Langley Field. NACA remained here throughout its life. On the Dodd Boulevard entrance arch you can still see the NACA winged crest and “Research Laboratory” inscription. In October 1958, NACA was replaced by a new organization, the National Aeronautics and Space Administration (NASA), with a special focus on the space mission.



The building directly across the street is **QUESADA HALL** (115 Thompson, Bldg 590). Currently the ACC Public Affairs offices and auditorium are located here. General Elwood "Pete" Quesada was the father of the modern fighter force. He was a great innovator, one of the crew of the first Question Mark aerial refueling flight in 1927, and matured the theory of close air support. General Quesada was the first commander of Tactical Air Command (TAC). General Quesada moved the headquarters to Langley in 1946 where it remained until it was inactivated on June 1, 1992 when Langley became home to Air Combat Command (ACC). This building once housed the administrative offices of the Mercury astronaut program.

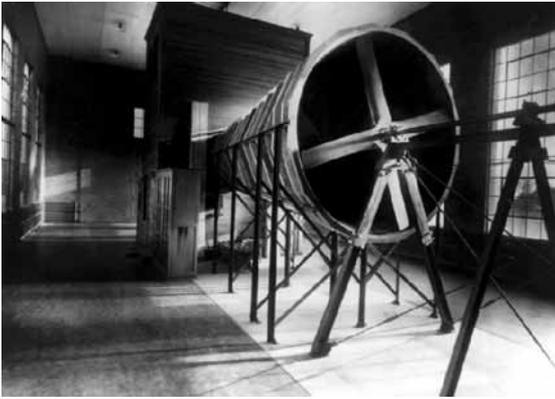


Continue to walk down Thompson Street and on the right, the Major General John P. Hyde Building (180 Benedict, Bldg 558) was the **BASE HOSPITAL** built in 1935. The building was expanded with two wings during World War II as the base grew. After the current base hospital was completed in 1960, this facility was turned into office space and is primarily the home of the Communications and Information Directorate (A6). General Hyde spent most of his career in communications, which is why the building was named for him.



Now turn left onto Thornell Avenue.

The two buildings on the right were originally **NCO duplex quarters**. (Note the garages in the back.) They now serve as office space.



The buildings on 187-191 Thornell housed the **ORIGINAL WIND TUNNEL**, dedicated in June 1920 and completed in 1930 (Bldg 582 and 583). At one time, NACA operated over 40 wind tunnels on the installation. The iconography above the doorways was an early symbol of NACA. You will see it on several other buildings on the walk.



As you continue walking down Thornell look to the left after crossing Plumb Street, you will see a series of buildings that were part of the original Kahn construction in 1920. Note in particular 201 Thornell, Bldg 606 (corner of Plumb and Thornell) and 209 Thornell, Bldg 623 (corner of Thornell and Douglas). These buildings were the truck shed and technical stores buildings. While there have been modifications over the years, recent efforts have restored the buildings much closer to the original design. Like most of the other original construction, the Kahn fascination with intricate brickwork and concrete iconography are evident.



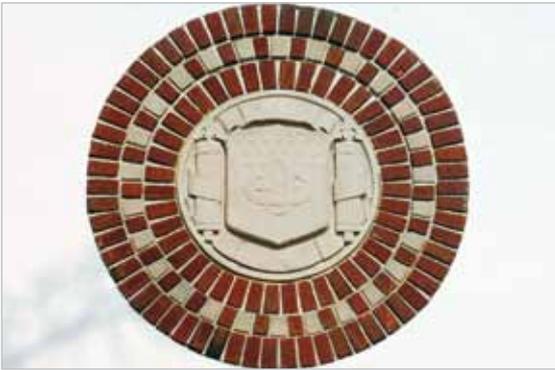
The iconography on 201 Thornell is the United States shield with thirteen stars and stripes to represent the

original thirteen colonies. The image of the ring gear with the four-bladed propeller represents the mechanical and technical services of the Air Service Command. The eagle is a common symbol of the United States. The fasces are Roman in origin and represent power and authority. The laurel plant with intertwining leaves is a common symbol of achievement and excellence.

As you resume your walk, notice 204 Thornell, Bldg 617 on the right, which today is home to a portion of the Air Expeditionary Forces (AEF) Center. It originally housed the **CIVIL ENGINEER** shops in 1937.



Notice 209 Thornell, Bldg 623 on the corner of Thornell and Douglas. Again, the iconography with the United States shield with thirteen stars and stripes. The gyroscope, a scientific instrument used to illustrate the dynamics of rotating bodies, is used to represent science and the study of physics. The spearheads represent equipment furnished to fighting men and devotion to honor. The scrolls at the bottom of the shield are a common element and can be used to illustrate textual information. Now turn left onto Douglas Street. Notice the eagle on the side of Building 623 after you turn.



Look to the right and you can see the **LANGLEY FULL SCALE TUNNEL**. One of the “prides” of NACA’s wind tunnel operations, the Full Scale Tunnel, also called the 30 by 60 Tunnel, began operating in May 1931. It was



large enough to hold operational aircraft versus simply testing scale models. In 1985, it was declared a National Historic Landmark. In October 1995 NASA and Congress declared the tunnel excess and Old Dominion University operated it for scientific research. They, in turn, contracted the use of the tunnel to various private interests, including NASCAR race teams that test the aerodynamic properties of their cars.

The next building on your left (204 Dodd, Bldg 602) houses the Requirements (A8), Studies and Analysis (A9) and Plans and Programs (A5) Directorates. It was built in 1969 and later dedicated to the memory of Maj Gen Robert F. Worley, former assistant deputy for operations, command and control with Tactical Air Command. The B-2 façade along the top was added in 1998.

On the corner of Douglas and Dodd, looking left is the **HEADQUARTERS BUILDING**, (205 Dodd, Bldg 693) which was built in 1919. One of the USAF's most historically significant buildings, this structure housed organizations that have played a key role in every major organizational development of US airpower into the 21st Century. The facility was designed as an Army Aeronautical Lab, but instead became the headquarters for the 2nd Wing of the Army Air Service. In March 1935, General Headquarters Air Force



was established with its headquarters in this building. When Headquarters Tactical Air Command transferred to Langley in 1946, it used this facility until its inactivation in 1992. Now, this building is the headquarters for Air Combat Command. One of the Air Force's most architecturally unique structures, it was designed by Albert Kahn and features the same decorative brickwork used on Langley's oldest hangars. An example of the Renaissance Revival Style, it is modeled on elements of merchant palaces and public buildings of the Italian Renaissance.



Turn right onto Dodd Boulevard.

On the left side was the **8TH PURSUIT GROUP BARRACKS** (130 Douglas, Bldg 681) built in 1932. This building currently houses the Directorate of Logistics (A4). As you walk down Dodd, look back at the building and notice the white stucco on the exterior. This is where the screen porches were located in the days before air conditioning.



Continue walking north on Dodd. To the left was the **MAJOR AIRCRAFT BACK SHOP** (219 Dodd, Bldg 661) completed in 1918, the equivalent of today's depot-level maintenance. The building has had many different uses over the years, but today it houses A4 (Logistics) and A8 (Requirements). Take time to look at the iconography on this building. The first



iconography has an eagle with outstretched wings, which is a common symbol of the United States and is used in civil and defense organizations. The shield with the image of an airplane engine represents the mechanical and technical services of the Army Air Service.



At the other end of this building the iconography again has the United States shield, but the images in the center are historic tools used

in manufacturing and represent physical power and strength. The anvil-vise and small sledgehammer are tools used for working metal. The bevel gear is a specialized gear used to alter the direction of momentum in working devices. These symbols are appropriate to the historical use of the building as a machine shop.



THEATRE AND GYMNASIUM

On the right at 216 Dodd, Bldg 658 is the original base theater and gym constructed in 1933. During the August 23, 1933 hurricane, floodwaters crested at eight feet above mean sea level and were chest-high in front of the gym. Today the entire building is the ACC Fitness Center.

As you pass the ACC Fitness Center look again to the right for another view of the **FULL SCALE TUNNEL**.



The next building on your right (218 Dodd, Bldg 648) is now home to the Transonic Dynamics Tunnel. Originally this was the **19-FOOT PRESSURE TUNNEL**; this NACA pressure tunnel measured the effects of wind on scaled down models of military aircraft.



Continue walking north to the intersection of Dodd and Andrews Street. Looking to the right of the intersection, you will see what was the **LANGLEY FIELD STOCKADE** (114 Andrews, Bldg 714). This building was built in 1932 at a cost of \$35,176 and was converted to a barracks in 1960. It now

serves as the Air, Land and Sea Application Center.



ACC Civil Engineer offices



Former 1st Fighter Wing HQ



necessary to accommodate operations at the Air Corps' most important station, where space was at a premium. Although modified, the buildings still serve their original purpose. Some of the 1930 buildings were demolished to make room for the F-22's arrival in 2005.

Turn left on Andrews and walk to Sweeney Boulevard. Andrews is actually a parking lot now. The building on your left (129 Andrews Bldg 664) is the Installations and Mission Support Directorate (A7). The building on the right (130 Andrews) houses various offices. Both these buildings were originally barracks built in the 1930s. The iconography on these buildings reflect the Art Deco and Art Moderne movements that were defined by streamlined, machine-inspired imagery that glorified modern advances in technology. Air Force planners, therefore, found the Art Deco designs to be an appropriate motif that emphasized the Air Force's aeronautical advances.

Continue walking on Andrews and on the right is the **OLD FIRE STATION** (232 Andrews, Bldg 700) on the corner of Andrews and Sweeney. Today the Base Honor Guard is housed in this building.

Turn left onto Sweeney Boulevard.

The airplane hangers (220 Danforth) on the right were built in the 1930s. Double rows of hangers were



On the right notice the **BASE PHOTO LAB** (216 Danforth). Aerial photography began at Langley Field during WWI when the Army's first School of Aerial Photography was established in 1917. This building, constructed in 1939, still houses the Base Photo Lab

and is one of the oldest buildings on base to still house its original mission.

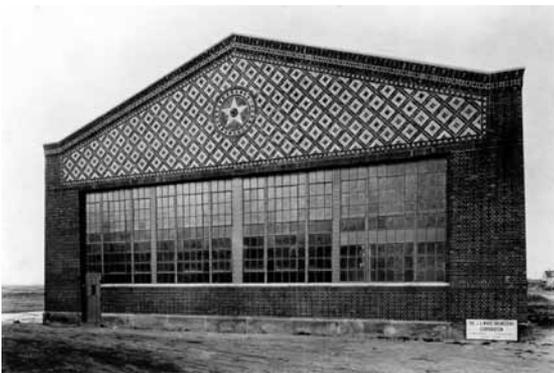
The building next to the Photo Lab is the **PARACHUTE SHOP** (214 Danforth, Bldg 784) built in 1932.

Notice, again, the design in the brickwork.



As you continue walking on Sweeney and cross Douglas notice across the street the spectacular Kahn brick work on the end of buildings 777 and 781, two original aircraft

hangars designed by Albert Kahn. Bldg 781, 205 Sweeney, was built in 1918 and was an **AIRCRAFT MAINTENANCE SHOP**. Bldg 777, 191 Sweeney, was built in 1919 and was the **AERO REPAIR SHOP**. The brick work design of the star within a circle was a common symbol of the early United States Army Air Service.



Also on this building notice the **CONCRETE ICONOGRAPHY** visible above the old doorways. There are four symbols that are then repeated on the next building and in the same order.

Each icon symbolizes something different:

The United States shield with thirteen stars and stripes is a common element in many military emblems. The shield with a single wing design is a 1917 pilot qualification badge. It represents a junior military aviator. The winged cherub with a helmet is a classical element and represents dignity, honor and glory. The fasces are Roman in origin and represent power and authority. The scroll at the bottom of the shield is a common element and can be used to illustrate textual information.



Again, the shield is seen, but in this design a star and projecting wings is one of several designs created in 1917 to represent a military aviator. The airplane at the top of the shield shows the aircraft of the Army Air Service at the time of its creation in 1918. The two swords represent justice and military power, and refer to both reserved strength and active warfare. The laurel plant is a common symbol of achievement and excellence.

The shield includes the two-bladed propeller with ring gear which was a common Air Service design used to represent flight engineering. The winged cherub and scroll are again seen in this iconography.

The shield has the ring gear of the airplane engine with projecting wings and again represented flight engineering. The airplane at the top and the swords are repeated from earlier designs.

Cross over Plumb Street, continue walking to Thompson Street, and turn left, entering the housing area. Stop at the corner of Thompson and Eagan Avenue. The parking lot on the corner was once the site of a tennis court built by General Quesada so he could work out between meetings.

Now, turn right on Eagan Avenue.

The first two blocks of Eagan (171-185) are the Kahn designed duplexes of 1919. Several have the original slate roof still intact. These houses were designed to resemble English cottages.



At the intersection of Eagan and Bowen note the historic **MANHOLE COVERS** from 1917. Every corner of this intersection has a historic storm water drain cover, evidence of the base's original extensive drainage system. The covers show the flag insignia of the Army Signal Corps and the date 1917, when the earliest development began at the site.



The 1930s quarters matched the Kahn style but with fewer distinctive features. The construction utilized the Tudor style which gives this area its unique appearance.

The Army Quartermaster Corps constructed 24 duplexes for field grade officers between 1931 thru 1934. The houses on Eagan (and crossing over Tyndall) between Bryant and Bowen Streets are prime examples of this period of construction. The park-like setting, open space areas, rambling sidewalks and tree lined streets are features influenced by the City Beautiful Movement of the early 20th

century. Playing a direct role in this was nationally known architect George B. Ford who served as City Planning Adviser to the War Department. It was his responsibility to ensure that planning principles used successfully in American cities were incorporated into the vast Army Housing Program.

Next, located at 147-161 Eagan (on the right) are more of the oldest housing units designed by Kahn. Construction began in 1918, but war-related problems postponed completion until 1920. Resembling farm houses, they were among the original 26 houses to be completed to include the ones that resemble English cottages seen earlier on Eagan.

Follow Eagan Street as it curves left toward Dodd. When you reach Dodd, turn right.



DODD HALL (141 Dodd, Bldg 448) is on your right as you walk toward the traffic circle; this is part of the original Kahn design. It was built as Bachelor Noncommissioned Officers housing in 1919. This building and the street it is on were named for Colonel Townsend

F. Dodd, an early commander of Langley Field whose DH-4 aircraft crashed during training for the first Transcontinental Reliability and Endurance Test in 1919. Today, Dodd Hall serves as the Visiting Officer Quarters for visiting senior officers.

The large, beautiful magnolia trees in the median on Dodd were planted during in the late 1930s to early 1940s.

As you continue towards St John's Circle, notice the small building (127 Dodd, Bldg 441) on the right. It was built prior to 1945 and housed the Red Cross for many years.

As you pass the former Red Cross building you can see **ST JOHN'S CIRCLE** straight ahead. It was named in memory of the base gardener, Mr. Fred G. St John. St John's Circle was dedicated in the 1950s.



As you walk back across Dodd to the Officers Club parking lot, take a minute to visit the Sherwood Cemetery, which dates to the late seventeenth century. Although many of the graves no longer have markers and the markers on others are so worn as to be illegible, the cemetery is the final resting place of at least twelve members of

the Booker family, the 19th Century owners of the plantation. At the time of the sale of the property to the government, the former Sherwood Plantation was owned by a local oyster packer, Frank W. Darling, a strong supporter of bringing Langley Field to the Peninsula. Mr. Darling requested and the Army agreed that the graves would be cared for in perpetuity.

Looking back across St John's Circle you can see the **MEMORIAL AIR PARK**.

The United States flag, the 50 State flags and the Air Force flag are flown in the park.

The static display airplanes are: F-105 "Thunderchief"
F- 86 "Sabre"
F- 15C "Eagle"
F- 16 "Fighting Falcon"

Today the First Fighter Wing flies the F-22 "Raptor," the most advanced air-to-air and air-to-ground fighter on the planet. You most likely heard the F-22 zoom overhead during your historic walking tour of Langley's heavier-than-air area. The F-22 is the first supersonic/super-cruise, thrust-vectoring, stealth fighter to possess a simultaneous first-look, first-kill capability against multiple targets.

As Langley's Airmen look to the future, they can learn from their predecessors' example and continue to provide the same outstanding service to the United States of America. Today we remember the contributions our heroes have made through that first unmanned flight by Samuel Langley in 1896, to those who have served in WWI, WWII, Korea, Vietnam, Panama, Desert Storm, Kosovo, Afghanistan, and Iraq. We must also remember the countless humanitarian missions our great Air Force has flown over the years and around the globe. Langley Air Force Base and its Airmen represent the best the United States Air Force has to offer and remains America's oldest continuously active air field.



ACKNOWLEDGEMENTS

The Air Combat Command Office of History gratefully acknowledges the contributions of Stacia Gillett, Kelly Price and Kathy Wells, who "took the tour" many times with manuscript in hand, updating, correcting, and clarifying the original text. This project would never have come to fruition without their dedicated and hard work.