



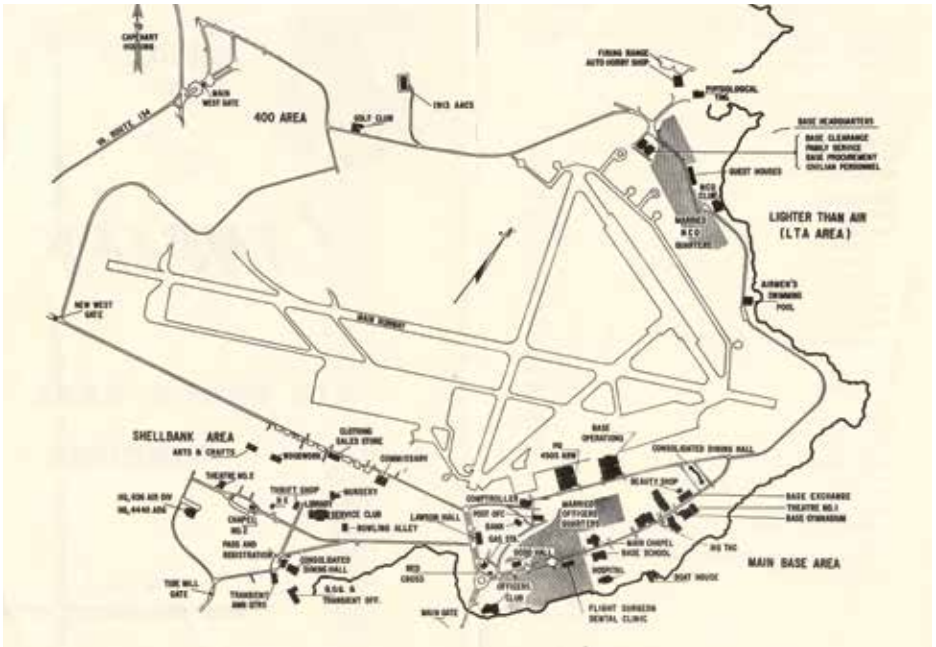
LANGLEY AIR FORCE BASE

Historic Walking Tour

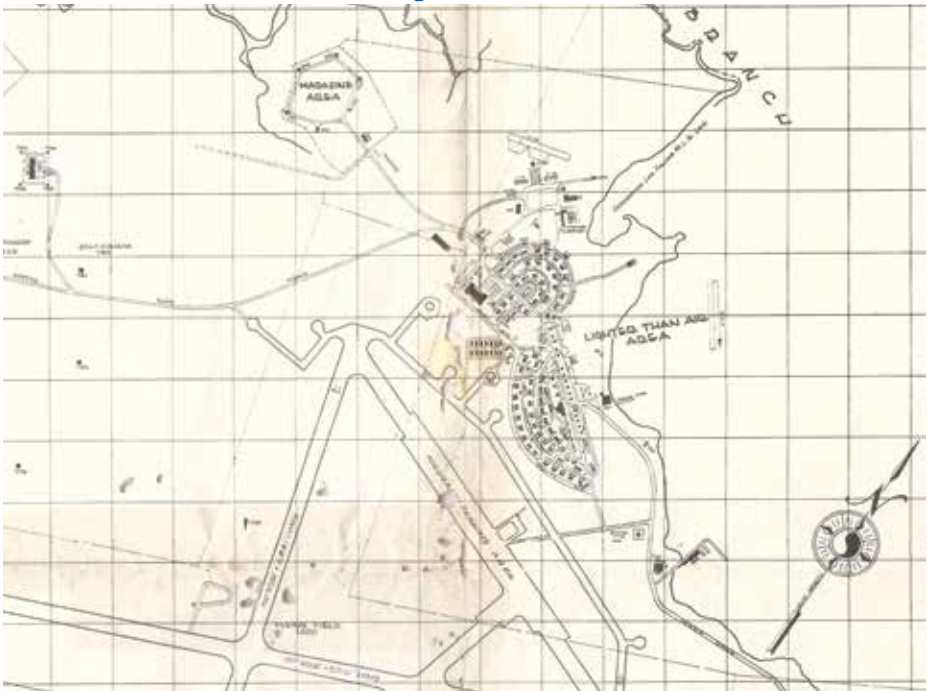
LIGHTER-THAN-AIR AREA



Langley 1961



Langley 1954





Samuel P. Langley

Langley Air Force Base takes its name from Samuel Pierpont Langley, born in Roxbury, Massachusetts, on August 22, 1834. Samuel Langley was a leading scientific figure in the United States in the latter nineteenth century, well known especially for his astronomical research. Langley's wide-ranging career included holding a professorship in astronomy and physics at Western University of Pennsylvania, serving as the third Secretary of the Smithsonian Institution in 1887, and conducting a study in the possibility of heavier-than-air flight. After several failures with designs that were too fragile and under-powered to sustain

themselves, Langley had his first success on May 6, 1896, when his Aerodrome No. 5 made the first successful flight of an unpowered, engine-driven, heavier-than-air craft of substantial size. It was launched from a spring-actuated catapult mounted on top of a houseboat on the Potomac River near Quantico, Virginia. Two flights were made that afternoon, one of 3,300 feet and a second of 2,300 feet, at a speed of approximately 25 miles per hour. On both occasions, the Aerodrome No. 5 landed in the water, as planned, because, in order to save weight, it was not equipped with landing gear. This was the first sustained heavier-than-air machine flight in history.

After the successful Aerodrome flights, Langley intended to raise funds to begin work on a full-scale, human-carrying aircraft. He believed his only real hope of securing the kind of funding necessary was from the federal government. The outbreak of the Spanish American War in 1898, contributed to a favorable review for a \$50,000 grant to study the military use of "manned aerodromes." After five years, Langley was ready to test his work. The first attempt in October 1903, again from a house boat on the Potomac River had a launch mechanism failure. The second attempt, on 8 December 1903, had huge press coverage but also failed. The press had a field day over the failure, calling it "Langley's ark." His sense of failure was heightened when just nine days later, on December 17, 1903, 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 Field was an integral part of the development of American military aviation due to its role in the operations and organizational structure of the Army air arm. By the fall of 1919, and after the end of World War I, headquarters of one of the Air Service's two Wings remained at Langley Field. It was also Headquarters for the 1st Army Observation Group, one of the Air Service's four Group headquarters and the only observation group on the mainland. By the mid-1920s, Langley was the home of one of two airship companies.

Langley's Lighter-Than-Air Background

Located a mile north of the main base across today's modern runway, the Lighter-than-Air (LTA) area began in 1917 with the construction of a hydrogen gas generating plant along the Northwest Branch of the Back River. The site was located on the extensive property of the former Lamington Plantation, whose main house served as home to several early Langley Field commanders. Langley's association with LTA aviation began in June 1918 when its first balloon detachment arrived to conduct training for aerial observers prior to their operational service in World War I. Before the departure of the 19th Airship Squadron in November 1935, free balloons and non-rigid and semi-rigid airships were a common sight over the airfield. There were more than seventeen different airships stationed at Langley Field, along with many types of free balloons. Several of Langley's airships were noteworthy. The ZD-US-1 (the "Zodiac") was a non-rigid airship acquired by the Air Service from France early in 1920; it was erected at Langley and was the largest airship



in the United States up to that time. The first transcontinental flight by an airship was made by the non-rigid C-2 in the summer of 1922 from Langley to Ross Field, California. The most famous airship ever stationed at Langley Field was the Roma.

During demobilization following World War I, numerous balloon units arrived at Langley Field and were quickly inactivated. However, two units found permanent homes on the field: the 19th Balloon Company and the 10th Balloon Company. They were redesignated Airship Companies, when a distinction was made between units with observation balloons and those operating airships. The 10th Airship Company was redesignated again in October 1921 as the Airship School. In 1919 the Army Air Service began construction of an airship station at Langley in order to take advantage of the field's proximity to the Army's Coast Artillery center at Fort Monroe. Serving as the home of the initial Army Airship School, the LTA area witnessed a notable period of construction in the 1920s and 1930s. Airship missions included Air Corps Tactical School training, photography, reconnaissance missions during bombing



tests, coastal patrol exercises, Chesapeake Bay area coastal defense, transportation for political leaders, etc. Even after the school moved to Scott Field, Illinois in 1922, Langley remained the home of the 19th Airship Squadron, the Army's primary tactical LTA unit until November 1935 when it departed for Moffett Field, California. During the 17 years the 19th Airship Squadron was at Langley Field, free balloons and non-rigid and semi-rigid airships were a common sight over the airfield.

Balloons and airships were housed in the large hangar in the north portion of the airfield. The contract to build the hangar was let in June 1919 to the Harris Construction Company of New York who was low bidder with \$55,500. Even though records do not explain modification and addition costs, the hangar was essentially complete by 3 December, 1921. The price tag was \$462,550.83, a cost over-run of nearly ten times the estimate.

The Lighter-Than-Air area developed to facilitate dirigible operations. It was almost entirely independent from the main base, with separate housing, its own club facility, and industrial operations. Historic construction in the LTA area is concentrated in two adjacent sections of housing for enlisted men and their families, located north and south of Clarke Avenue. The housing in these sections were identical in scale and height, featuring two-story, brick-clad duplexes which were built in the 1930s and were variations of two different house types—one type had Spanish Colonial Revival features while the second type was Classical Revival in style. More permanent brick housing units, a large barracks building, and several other administrative buildings were constructed in the 1930s to replace earlier temporary wooden structures. By the end of the 1930s, most LTA specific activities had been curtailed with the departure of the airships. Additional housing has been constructed since the 1960s and shade trees planted in the street right-of-way have matured; however, the devastation from Hurricane Isabel in 2003, toppled some of the established shade trees which changed the appearance of the housing area. But the overall character, general layout and distinctive look of the housing areas with curving streets and unattached garages, presenting the appearance of a well-established neighborhood that it had in the 1930s, has been maintained.



The Tour



The tour begins facing the **BAYVIEW COMMONWEALTH CENTER (Bldg 926)**. Originally constructed in 1931-32 as the Non-Commissioned Officers (NCO) Service Club, the building emulated the brick styles seen on the main base. Large additions have been

added to almost all of the building's original façades, including enclosure of the porch on the waterfront side.

Turn left as you walk, crossing the large parking lots toward the high-rise building known as the **BAYVIEW TOWERS (Bldg 945)**. This ten-story structure was completed in May 1966 to serve as family housing with two, three, and four bedroom apartments; it could accommodate 92 military families. At a cost of \$1.6 million, it was the Air Force's first high-rise family housing. Its modern Expressionism design contrasts with earlier styles of the surrounding 1930s-era brick buildings.



Now, turn left again and go to the stop sign at the intersection of Clarke and Helms Avenues, cross the street to stand on the sidewalk. In the triangular plot between the two streets once stood the **LAMINGTON PLANTATION** house and grounds. Originally a part of the Hollier and later Poole family estates, it was purchased by the Hudgins family in 1830. The plantation was part of the

original Langley tract purchased by the Army in 1916. The house, known for many years as Lamington Cottage, served as the Langley post commander's residence as well as a Bachelor Officers' Quarters and Mess well into the 1930s and for a few years afterward as a primary school for base children.

While details about the house are limited, an article in the February 1957 edition of *The Langley Flyer*, alleged the house to have been built of brick brought



to the United States from France and England, in the holds of sailing ships as ballast. When the plantation house was razed sometime between 1950 and early 1954, the building was sold for wrecking to make room for new construction in the LTA area. The buyer was reported to have carefully dis-mantled the house in sections. The article goes on to state, "it is believed

that the bricks were sold to the Williamsburg Restoration Commission for use in the restoration of historic buildings located there."¹

Remaining at the intersection of Clarke and Helms Avenues, looking across the street and to your left is one of the LTA housing areas. Both this and the horseshoe-shaped semi-circular housing area, off to your right along Clarke Avenue hosted members of the Airship organizations operating at this part of the base. The streets of the housing area on your left are formed into an inverted crescent-shape where in 1931, 29 duplexes were constructed; nine more were built in 1932. Three different variations of the two-story house type with **SPANISH COLONIAL** features were used for this housing section. Although very similar, some houses have gabled roofs (Bldg 805), some have hipped roofs with a single hipped end pavilion (a type of roof where all sides slope downwards to the walls) (Bldg 808), and a number have hipped roofs with hipped roof pavilions on both end sections (Bldg 819).



Bldg 805



Bldg 808



Bldg 819

Still at the intersection of Clarke and Helms Avenues, turn right and continue down Clarke Avenue to the first street on your right which is Watts Avenue. Turning right on Watts, the duplexes on the horseshoe-shaped street are built

¹ Article, Maj George W. Satterfield, "Plantations Which Formed Langley Land And Burial Grounds Described," *The Langley Flyer*, Feb 1957, p 3. While the article suggested it was demolished in the late 1930s, the house still showed up in aerial photos and maps of the base as late as October 1949. The house was no longer shown on a map of the base dating from March 1954.

in the **CLASSICAL REVIVAL** style. Eight of the duplexes in this section, for example, No. 988, third duplex on the left, were completed in 1932. Fifteen more were finished in 1934. Twenty-one brick garages were built in 1933-1934 and two stucco garages in 1940 (now demolished). All the duplexes are constructed of brick and front and side yards are uniform in size with the rear service roads paralleling the main streets which provide access to the garages.



At the end of Watts Avenue, turn right proceeding further down Clarke (there is no sidewalk), which is the main route through the LTA housing and named after Captain Charles Palmer Clarke, who had commanded the 19th Airship Company and died in a training accident in 1929. Turn right onto S. Roma Road, named after the Italian-built **ROMA**--the first large airship to be flown by any branch of the United States armed forces and the only large ship which used hydrogen. The acquisition of this airship was the result of intense lobbying by General Billy Mitchell. Originally constructed as an Italian semi-rigid airship, the Roma was purchased by the Army and shipped to Langley in August 1921 for use by the Air Service's LTA branch. The nose and the triangular-shaped keel under the gas bag were reinforced with a rigid metal skeleton. The huge gas



bag, or "envelope," however, retained its shape only when filled with hydrogen. The airship measured 410 feet in length and contained 1,167,220 cubic feet of hydrogen, which gave her a lifting capacity of seventeen metric tons. Six 450 horsepower Ansaldo engines gave her a speed in excess of sixty-five miles per hour.

Following several weeks of assembly, the Roma flew its inaugural flight in the United States on November 15, 1921 and on December 21, 1921, the airship journeyed to Bolling Field outside Washington, D.C. where official christening ceremonies were held. Engine trouble occurred shortly after her first U.S. flight and new engines were installed early in 1922. And so it was on 21 February, 1922, on the first flight to test the new motors, the Roma with a crew of forty-five went aloft. Thirty-four airmen were originally assigned to the Roma; however, shortly

before take-off, Captain Mabry, the Roma's commanding officer decided that eleven more passengers could go. When the airship blew apart after striking high voltage wires, crashing at the U.S. Army Quartermaster Intermediate Depot outside of Norfolk, all thirty-four crew members were killed. The additional eleven airmen were the only survivors. Several of the streets in the LTA area are named for those servicemen such as Watts, Smythe and Hilliard and the street which parallels the site of the hangar is called "Roma Road." Following the Roma disaster in early 1922, the Air Service switched exclusively to helium for remaining period of airship operations.



Continue down S. Roma Road towards the Back River until you come to the parking lot in front of Building 1004. This two-and-one-half story brick building was the first permanent Army Air Service structure built on Langley in 1917 and was known as the **HYDROGEN GENERATION PLANT**. Hydrogen, because of its greater lifting power and less cost relative to helium, was the gas used in

Langley's airships. Adjacent to the main building is the compressor plant, also constructed in 1917. Both buildings housed the special equipment required for the generation of hydrogen and, therefore, are unique in their design. A helium repurification plant was built in early 1922 and operated in conjunction with the hydrogen plant. Langley's helium plant was at this time one of only two such installations in the United States; the other being a railroad repurification plant in Washington, D.C. The plant remained in operation until 3 December, 1929, when it was remodeled for the Air Corps Tactical School for use as a stable for 39 animals. This building was last used as a storage facility for Roads and Grounds equipment.

As you turn around and head back down S. Roma Road, past Clarke Avenue, turn right onto Helms Avenue and turn right again into the big parking lot. (The parking lot is next to the 735 Supply Chain Operations Group, Bldg 1017.) Try to envision the massive building pictured here rising before you. You would now be in the center of the **LANGLEY AIRSHIP HANGAR**, which as one report

states, “could be seen from virtually every corner of the base.” The huge airship/balloon hangar—420 feet long by 125 feet wide by 116 feet high—the (the outline of the parking lot is a rough estimate of the footprint of the hangar), stood on this site from 1919 until it was dismantled in 1947, twelve years after the departure of the last airship. It was constructed of steel framing with asbestos sheeting and built at a cost of \$510,000.00. Between late 1921 and May 1923 the hangar was equipped with two airship docking rails which, like two long fingers, extended 780 feet from the door. Built to house the base’s many and varied airships during the heyday of the LTA era, the hangar was a distinctive base landmark for many years. Following the departure of the 19th Airship Squadron in 1935, the hangar served as host to several Observation and Reconnaissance units and as a maintenance backshop until it was demolished.



As you leave the parking lot, turn left back onto Helms and cross over S. Roma. To your left is **BUILDING 801**. Built in 1932 in the Colonial Revival style, it originally served as barracks for enlisted men serving with the LTA’s airship and reconnaissance units. Over the years it has also served as home to a variety



of base headquarters organizations such as the 4500th Air Base Wing and the 1st Combat Support Group, and it even briefly served as the offices of Tactical Air Command from 1949-1950. Today it hosts base tenants and functions as temporary office space for various organizations during renovation efforts across the base.

Proceed along Helms Avenue, which curves toward your left back towards Clarke. At the three-way intersection, turn immediately right on to Harris Avenue, and follow it through the neighborhood to the junction with McNalty. On your left are the graves of Ann and Frances, daughters of Simon Hollier IV and his wife Ann. These are all that remain visible, of the **OLD HOLLIER BURYING GROUND** in the chain link enclosure, marked as building 859. The girls early deaths, Ann was 12 years old when she died in March 1796 and Frances was 16, when she died in January 1798, attest to the difficulties of life

in the 18th century. The Hollier family had owned much of the land in this area from the late 1690s until the late 1800s, when it became a part of what was known as the Poole Plantation.



Continue along Harris Avenue and return to Clarke Avenue, then turn left in order to come back to the starting point at the Bayview Commonwealth Center. The transient nature of military life lends itself to a frequent change of neighbors. But as you leave the LTA housing area, the neighborhood established in the 1930s continues to emanate a close-knit community.



This pamphlet was created in 2017 by Beatrice Liu and William Butler of the ACC History Office and Amber Jordan of ACC Graphics for the Langley Centennial.

