Class of 2015 Exemplar Dinner

Mr. Orville Wright and Mr. Wilbur Wright

27 October 2012

United States Air Force Academy

Sequence of Events

Introduction

Entrance of Head Table Members

Posting of Colors: USAFA Cadet Honor Guard

National Anthem: In the Stairwell

Welcome/ Introductions/ Toasts

Dinner

Guest Speakers: Mr. Richard Young and Mrs. Amanda Wright Lane

Presentations

Closing Remarks

Retiring of the Colors

Dismissal of Mess

Toasts

"I propose a toast to the colors of this great nation. To her we drink, for her we pray, our voices silent never, for her we fight-let come what may. The Stars and Stripes forever."

All: "To the Colors!"

Toast: "To the President of Ecuador"

All: "To the President"

Toast: "To the President of Georgia"

All: "To the President"

Toast: "To the President of the Republic of Korea"

All: "To the President"

Toast: "To the President of Lebanon"

All: "To the President"

Toast: "To the President of Lithuania"

All: "To the President"

Toast: "To the President of Peru"

All: "To the President"

Toast: "To the President of Senegal"

All: "To the President"

Toast: "To the President of Singapore"

All: "To the President"

Toast: "To the President of Taiwan"

All: "To the President"

Toast: "To our Commander-in-Chief, the President of the United States"

All: "To the President"

Toast: "To the Chief of Staff of the United States Army"

All: "To the Chief"

Toasts

Toast: "To the Commandant of the Marine Corps"
All: "To the Commandant"

Toast: "To the Chief of Naval Operations"
All: "To the Chief"

Toast: "To the Chief of Staff of the United States Air Force"
All: "To the Chief"

Toast: "To the Superintendent"
All: "To the Superintendent"

Toast: "To the Commandant of Cadets"
All: "To the Commandant"

Toast: "To the Dean of the Faculty"
All: "To the Dean"

Toast: "To the Director of Athletics"
All: "To the Director"

Toast: "To the Chief Diversity Officer"
All: "To the Diversity Officer"

Dinner Menu

Spring Mix Salad

Beef Medallion with Mushroom Sherry Sauce

Tortellini with Cheese and Pesto Sauce

Key West Blend Vegetables

Sparkling Red and White Grape Juice

Mitch's Mountains

Mr. Orville Wright and Mr. Wilbur Wright

The Wright Brothers, Mr. Orville Wright and Mr. Wilbur Wright, are credited with the development of the first successful airplane and the creation of the first viable system for controlled, powered, and sustained heavier-than-air flight. Their contributions to the development of aviation laid the groundwork for all aerospace pioneers and provided the foundation for what would become modern military airpower.

The Wright Brothers were two of seven children born to Milton Wright and Susan Catherine Koerner. Wilbur was born near Millville, Indiana, in 1867; and Orville in Dayton, Ohio, in 1871. In 1878 their father brought home a toy "helicopter" for his two younger sons. The device was based on an invention of French aeronautical pioneer Alphonse Pénaud. Made of paper, bamboo and cork with a rubber band to twirl its rotor, Wilbur and Orville played with it until it broke, and then built their own. In later years, they pointed to their experience with the toy as the initial spark of their interest in flying.

The Brothers were not formally educated at a University; Wilbur considered attending Yale University after completing high school, but his plans were disrupted after he received an injury to his face during an ice hockey game and after his mother became terminally ill with tuberculosis. He read extensively in his father's library during this time.

The brothers began their partnership by establishing a small print shop in 1889. Capitalizing on the national bicycle craze in the early 1890s, the Brothers opened a bicycle sales and repair shop in 1892, the Wright Cycle Exchange, and began manufacturing their own brand of bicycle in 1896. They used this endeavor to fund their growing interest in flight. In the ensuing years, several significant aeronautical strides were made by early aviation pioneers Otto Lilienthal, Samuel Langley, and Octave Chanute. In May 1899 Wilbur wrote a letter to the Smithsonian Institution requesting information and publications about aeronautics. Thus began their first steps toward the goal of developing a practical flying machine.

The Wright Brothers followed the example of Otto Lilienthal by studying the fundamentals of flight through testing of experimental kites and gliders. The Wrights realized that the problems of stability and control were the major obstacles to the development of a successful flying machine. Other aeronautical investigators regarded flight as if it were not so different from surface locomotion, except the surface would be elevated. They thought in terms of a ship's rudder for steering, while the flying machine remained essentially level in the air, as did a train or an automobile or a ship at the surface. The Wrights observed that birds, like bicycles, banked while making turns and were the first to understand the necessity for a flying machine to make coordinated turns to maintain balance.

They puzzled over how to achieve the same effect with man-made wings, and eventually discovered wing-warping when Wilbur idly twisted a long inner-tube box at the bicycle shop. Other investigators, including Langley and Chanute, sought the elusive ideal of "inherent stability", where the aircraft would be minimally affected by turbulence, believing that the pilot of a flying machine would not be able to react quickly enough to compensate for wind disturbances. The Wright Brothers, on the other hand, believed that the real goal was to give the pilot absolute control. For this reason, they deliberately designed their 1903 powered Flyer with anhedral (drooping) wings, which are inherently unstable, but less susceptible to upset by gusty side winds.

The Brothers spent the majority of their free time studying, building, and testing new and improved versions of their glider. The Wrights read widely on the nascent field of aeronautics, but relied on their own observations and experiments. There were no "established" aeronautical texts at the time, and much of the material available on the subject was often incorrect.

The Brothers developed a system of airframe manipulation which was revolutionary for its time, and which continues to be the standard of all modern aircraft: three-axis control. Wing-warping for roll, forward elevator for pitch (up and down), and rear rudder for yaw (side to side). On March 23, 1903, the Wrights applied for their famous patent for a "Flying Machine", based on their successful 1902 glider. Some aviation historians believe that applying the system of three-axis flight control on the 1902 glider was equal to, or even more significant, than the addition of power to the 1903 Flyer. Peter Jakab of the Smithsonian asserts that perfection of the 1902 glider essentially represents invention of the airplane.

The Wrights handled set-backs in their experimentation with a calm and deliberate approach that demonstrated a level of confidence and maturity that amazed all who knew them. The problem of inventing a flying machine was far greater than the Wrights initially believed, and it required them to make important discoveries in aeronautical theory, structural analysis, propeller theory, and engine technology. They valued safety above all else – the sophisticated airframe they designed was capable of withstanding hundreds of crashes with minimum damage to the structure, and they developed a test flight protocol that limited pilot risk.

For their 1903 powered Flyer, the Brothers used their preferred material for airframe construction, strong and lightweight spruce. They constructed a Spartan but robust machine and designed and carved their own wooden propellers. Modern wind tunnel tests on reproduction 1903 propellers show they were more than 75% efficient under the conditions of the first flights, and actually

had a peak efficiency of 82%. This is a remarkable achievement, considering that modern wooden propellers have a maximum efficiency of 85%.

The Wrights wrote to several engine manufacturers, but none met their need for a sufficiently lightweight power plant to propel their powered 1903 Flyer through the air. They turned to their bicycle manufacturing shop, where they designed and built an engine in just six weeks. To keep the weight low enough, the engine block was cast from aluminum, a rare practice for the time. The Wright engine was a primitive version of modern fuel-injection systems, having no carburetor or fuel pump. Gasoline was gravity-fed into the crankcase through a rubber tube from the fuel tank mounted on a wing strut. The Flyer had a wingspan of 40.3 ft., weighed 605 lbs., and sported a 12 horsepower, 180 lbs. engine.

On December 17th, 1903, in camp at Kill Devil Hills, North Carolina, the Wrights finally took to the air, making four flights from level ground into a freezing headwind gusting to 27 miles per hour. The first flight, by Orville, covered 120 feet in 12 seconds, at a speed of only 6.8 miles per hour over the ground, and was recorded in a famous photograph. The next three flights traversed approximately 175 feet, 200 feet, and most significantly, 852 feet in in the final test flight that day of 59 seconds.

Continuing to work in relative isolation for two more years, the brothers constructed new aircraft in 1904 and 1905 and continued flying at a pasture eight miles from Dayton. By the fall of 1905, they had transformed the marginal success of 1903 into the reality of a practical airplane capable of remaining aloft for extended periods under the complete control of the pilot. They had met the age-old challenge of developing a practical airplane.

Thus began the dawn of the new age of flight. In the ensuing years, the Brothers would capture hundreds of aviation firsts, setting new standards in speed, altitude, and most of all, controllability. Public demonstrations all around the world were given by the Brothers to prove their invention and their mastery of its operation. Their work would lead to a government contract and the creation of the first world's first military airplane: U.S. Army Signal Corps Airplane No. 1, a modified Wright Model A. Thus began the long and proud history of U.S. Military Airpower.

Over the next decade, the Brothers continued to refine and improve aircraft control and dynamics among an increasingly competitive global marketplace for aircraft, while also trying to protect their inventions from patent infringement. The Wright Company was established on 22 November 1909 for the creation and development of new aircraft. The Brothers sold their patents to the company for $100,000, received one-third of the shares in a million dollar stock issue,

and a 10 percent royalty on every airplane sold. The company survives today as the Curtiss-Wright Corporation and was the largest aircraft manufacturer in the United States at the end of World War II. Today, the corporation has evolved as a component manufacturer, specializing in actuators, aircraft controls, valves, and metal treatment.

Between 1910 and 1916, the Wright Company flying school at Huffman Prairie, Ohio, trained 115 pilots who were instructed by Orville and his assistants. Second Lieutenant Henry "Hap" Arnold, a graduate of this flight school, later rose to Five-Star General, commanded the U.S. Army Air Forces in World War II, and became first head of the U.S. Air Force.

On a business trip to Boston in April 1912, Wilbur Wright became ill, and after returning to Dayton, he was diagnosed with typhoid fever. He lingered in and out of consciousness for several weeks until he died, at age 45, in the Wright family home on May 30, 1912.

After his Brother's death, Orville retired from business and became an elder statesman of aviation, serving on various official boards and committees, including the National Advisory Committee for Aeronautics (NACA), predecessor agency to the National Aeronautics and Space Administration (NASA). Orville Wright served NACA for 28 years. In 1930, he received the first Daniel Guggenheim Medal for notable achievements in the advancement of aeronautics (established in 1928). In 1936, he was elected a member of the National Academy of Sciences. Orville died on January 30, 1948, after his second heart attack, having lived from the horse-and-buggy age to the dawn of supersonic flight. Both Brothers are buried at the family plot at Woodland Cemetery, Dayton, Ohio.

The Wright Brothers demonstrated, through resolution and unconquerable faith, that it is possible to reach any goal. Their unrelenting passion for their craft and their inspirational ingenuity in creating the first controlled, powered, and sustained heavier-than-air human flight, serves as an example by which we can all follow and apply to our own lives. For their accomplishments and the character displayed in achieving their dreams, the Wright Brothers, Orville and Wilbur, are proudly declared as the exemplars of the United States Air Force Academy Class of 2015.

Mrs. Amanda Wright Lane

The Great Grand Niece of Orville and Wilbur Wright, Amanda Wright Lane works to preserve the story of her famous family's contribution to aviation history. Mrs. Lane is a trustee for the Wright Family Foundation of the Dayton Foundation, a 501 (c) 3 charitable fund which supports the preservation of aviation history related to the lives of the Wright Brothers.

Amanda has served as the Wright family's liaison to organizations such as Inventing Flight, the Dayton Aviation Heritage Commission, and the Dayton Aviation Heritage National Historic Park. As a Wright family spokesperson, Amanda Wright Lane consults with researchers and academics who are working to preserve the legacy of the Wright Brothers, gives lectures on her family's history, and works with state officials in both North Carolina and Ohio to raise awareness for the two National Parks in the United States dedicated to telling the story of the Wright Brothers

She was awarded the title of one of Dayton Ohio's Top Ten Women in the year 2005 and the Ivonette Wright Miller Award for volunteerism in the field of aviation/aerospace from the National Aviation Heritage Alliance in August 2008. Today, she is actively involved with the National Aviation Hall of Fame, Aviation Trail Incorporated, and currently serves on the boards of the National Aviation Heritage Alliance, Dayton History, Wright-Dunbar, Inc., Wright B, Inc., Engineers' Club of Dayton, First Flight Foundation, and is an honorary chairman of both the Le Mans Sarthe Wright 2008 Centennial Committee and Pau Wright Aviation. The American Institute of Aeronautics and Astronautics has recognized Amanda Wright Lane with their 2008 Public Service Award for "outstanding contributions to the aeronautics industry on national and international levels, and for dedicated efforts to preserve aviation history through education and outreach." In 2008, Amanda Wright Lane received the Ivonette Wright Miller award from the National Aviation Heritage Alliance and more recently received Aviation Trail's Trailblazer award for promoting and preserving the Dayton region's aviation heritage.

She graduated with a B.S. from Miami University, and as a volunteer, founded three children's educational and social programs for her community's schools. She resides in Cincinnati, Ohio, with her husband, Don.

Mr. Richard Young

Rick in front of his family owned-and-operated Restaurant, the historic Half Way House Chesterfield, Virginia.

Wright Brothers historian and pilot, Mr. Rick Young, has spent 40 years researching the work of Wilbur and Orville Wright. He and his wife, Sue, have constructed 16 reproductions of Wright aircraft. Their Wright 1902 Glider is on display in the "Wright Brothers & the Invention of the Aerial Age" exhibit at the National Air & Space Museum in Washington, DC. Another 1902 Wright Glider hangs in the Centrair Airport in Nagoya, Japan, after occupying center stage in the U.S. Pavilion at the 2005 World Exposition in Aichi. Reproductions of all the pioneering Wright aircraft from the 1899 Kite to the 1903 Flyer are on display at the Virginia Aviation Museum in Richmond, Virginia.

Over the past thirty-five years, Rick rediscovered the secrets of the Wright Bothers' invention of the airplane by reverse-engineering and constructing thirteen reproduction Wright gliders and three kites. These incredible flying machines, flown by Rick, his wife Sue, and their children, Jacquelyn, and David, have appeared in the IMAX film "On the Wing" and other documentary programs by NOVA, American Experience, Disney, Discovery and NASA.

Rick has written many articles and studies on the Wrights. The Published Writings of the Wright Brothers, co-edited with Peter Jakab, Senior Curator of Aeronautics at the National Air and Space Museum, was published by The Smithsonian Institution Press in May of 2000.

Both Rick and Sue are involved with local civic organizations. Rick is past President of the Jefferson Davis Association and has served on the Metro Richmond Convention and Visitors Bureau board, including a term as chairman, and is the founding chairman of the Chesterfield County Chamber of Commerce. He has served on the board of the First Flight Society and is currently a board member of The First Flight Centennial Foundation, the Chesterfield County Airport Advisory Board, and is President of Petersburg Area Regional Tourism. He and his wife live in Chesterfield, Virginia where they operate the historic Half Way House Restaurant.

Exemplar Dinner Committee Staff

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Rebecca Jones	Transportation and Parking CIC

Special Thanks

Mrs. Amanda Wright Lane, Distinguished Guest Speaker

Mr. Richard Young, Distinguished Guest Speaker

Mrs. Beth Claude, Mrs. Jeanne Staunton and the **Mitchell Hall Staff**

Mrs. Charlotte Morris and the CW Protocol Staff

Den Mar Services Graphics Department

USAFA Training Devices Division

The Association of Graduates

The USAFA Class of 1975

Class of 2015 Parents Association

The Department of History

USAFA Cadet Honor Guard

In The Stairwell

Class of 2016 Volunteers


14-18.


LIFE

"The desire to fly is an idea handed down to us by our ancestors who, in their grueling travels across trackless lands in prehistoric times, looked enviously on the birds soaring freely through space, at full speed, above all obstacles, on the infinite highway of the air."
- Orville Wright