FLIGHT LINES

ON THIS SITE IN 1910
STOOD THE HANGAR
OF THE
FLYING SCHOOL OF THE
FIRST MEN TO FLY:
THE WRIGHT BROTHERS

Happy Holidays!
MESSAGE FROM THE DIRECTOR

As we gear-up for another exciting year, I want to take this opportunity to reflect on a particular educational highlight that will continue to drive the mission of our organization well into the future. With the help of our staff, volunteers, board members, and extended museum family, we accomplished so much in 2019, and I look forward to working with the entire museum team as we continue to solidify our foundation as a premiere educational institution and community resource in Birmingham.

The Southern Museum of Flight’s identity is rooted in education, and we have successfully developed an array of educational programming that is second-to-none! Over the last several months, we were proud to, once again, take our education-oriented mission to the next level by laying the groundwork for the Southern Museum of Flight’s AWI, or “Aviation Workforce Initiative.” Through the early phases of our AWI, the Southern Museum of Flight will aim to increase public awareness and appreciation for aviation and opportunities within the aviation industry by enhancing our exhibitions, extending our educational outreach capabilities, and incorporating state-of-the-art technology such as flight simulation and virtual reality to engage students of all ages and across all spectra.

A key component of this initiative is the establishment of tangible career pathways into the Aerospace, Aviation, and Drone Industries, as well as the improvement of accessibility to such rewarding careers. The AWI is multi-faceted, as several Flight Clubs have already been established in our local schools, and a new Aviation Technology Center on the museum campus is currently under development. The possibilities are limitless and soon, through collaborations with education and industry partners, the Southern Museum of Flight endeavors to offer even more STEM (Science, Technology, Engineering, & Math) programming to include advanced secondary and post-secondary opportunities.

I invite all to play an active role in one of the museum’s many activities, volunteer opportunities, events, and programs. Together, we will continue our journey as one of the finest aviation museums in the country as we continue to provide a broad spectrum of services and educational opportunities for our community.

We wish you a Happy Holiday!

Brian J. Barsanti, Ph.D
Executive Director

Flight Lines is published monthly by the Southern Museum of Flight as an information source for its members, patrons, volunteers and friends. Articles that appear in this publication may be reprinted indicating the Southern Museum Of Flight as the source.

Comments are welcome and should be addressed to: Flight Lines 4343 73rd Street, North Birmingham, AL 35206
By early 1910, the monopoly the Wright Brothers held on the flying market was being seriously challenged by other inventors of flying machines. To deal with this issue, the brothers formed a touring company to conduct flying exhibitions to promote the sale of their airplane. But they needed pilots to fly the exhibition flights. However, at a time when there were fewer than ten fully qualified aviators in the world, the only way to obtain pilots was to train them. With the weather in their hometown of Dayton, Ohio, too cold and windy for aviation training, Wilbur began touring the South in February 1910 in search of an area conducive to flight training during early spring.

His journey took him to several southern cities before deciding that Montgomery, Alabama, had the climate and suitable grounds they needed. After visiting several locations in the area, he selected a site just west of the city for their school. Frank Kohn, owner of the property, offered him free use of the land for three months. The Montgomery Commercial Club then agreed to build a hangar on the property, furnish transportation to the field, and clear trees and undergrowth within three square miles of the area. Wilbur accepted the offers and sent a telegram to his brother telling him to “pack up a machine and send it to Montgomery.”

Packed in seven large crates, the Wright biplane arrived by train in Montgomery on March 14. Four days later, the Wright’s mechanic arrived and with him were two students: Walter Brookins from Dayton and James Davis of Colorado Springs, Colorado. Orville Wright arrived in Montgomery on the morning of March 24 with Spencer Crane, a third student and also a family friend. Wilbur, who had come to Montgomery to locate the sight, remained in Ohio.

Orville’s first order of business was to build a 200-foot monorail to assist the biplane during takeoffs. Since the plane normally took off into the wind, the rail consisted of sixteen-foot sections that could be assembled easily and dismantled for shifting, as necessary. Under the wings was “a platform that had skate wheels” that “rolled along the ramp” until the airplane got up enough speed for the wind to lift it gently into the air.

The next day, Orville made a major change to the airplane’s tail assembly. For the first time, he hoped the change would “simplify the handling of the aeroplane” and improve aircraft stability. This was the first significant modification since its first successful flight nearly seven years earlier.

After making final adjustments, Orville was satisfied the plane was ready to fly. Late on the evening of March 26, he and his assistants moved the biplane from the hangar and placed it on the monorail. Conditions for the pending flight were ideal with "the wind blowing about eight miles per hour." Orville took his seat at the controls as two of his assistants held opposite sides of the wings to help balance the aircraft. Then the throbbing drone of the engine's pistons was heard and soon the plane began moving down the track with the two men running alongside.

The flying school was short-lived, however, as mechanical and weather-related problems forced the brothers to close the facility. With the onset of milder weather that May, the school relocated to Huffman Prairie Flying Field near Dayton, Ohio, where the Wrights developed practical aviation in 1904 and 1905, and where the Wright Company tested its airplanes.

The Montgomery site, on a flat land a few miles northwest of hilly downtown Montgomery, became the first instance of a civilian flight school in the US and now is home to Maxwell Air Force Base. The Wright Flying School closed on May 26, 1910 and some of the earliest graduates became members of the Wright Exhibition Team.
The Southern Museum of Flight Foundation selected a replica of the Wright Flyer to be the featured attraction of the SMF’s 2003 Aviation Centennial Celebration. In anticipation of the 100th anniversary of the Wright Brothers’ flight in 1903, John Reynolds from Atlanta, GA decided to build a replica Wright Flyer. After first building a model, he then decided to order a detailed drawing from the Smithsonian Museum in Washington, DC. Initially projecting the project to take six months, the build took a better part of four years, from 1991-1994. Asked what it cost, John replied, “more than I care to admit.” It was a laborious undertaking but very fulfilling to both John and his wife, Carol.

During November-December 2003, the Reynolds presented their Wright Flyer to the Birmingham area community. Subsequently, through his generosity, his Wright Flyer replica returned to the Museum and is now prominently displayed in the Museum’s Early Aviation Hanger.

John Reynolds and his co-workers came away from the building of the Flyer with great appreciation of the Wright’s achievement. Recreating the Wright experience and “thinking through problems of construction which the Wrights had solved” gave the replica builders insight into the way the Wrights thought about the original project. A California replica builder told Reynolds he had accomplished in four years what he and a committee had been working on for ten years.

After some trial runs in the Flyer, Reynolds had some second thoughts about piloting his creation; “I think too much of myself and the aircraft.” He decided his Wright Flyer should be shared with the many aviation enthusiasts who visit the Southern Museum of Flight. The Wright Flyer is the perfect complement to the excellent displays available for viewing in this “hangar” of aviation history.

Relive the early history of flight and come see a unique acquisition!

The Wright Flyer, often referred to as Flyer I or 1903 Flyer, was the first powered aircraft designed and built by the Wright brothers. The flight of the Wright Flyer is recognized by the Fédération Aéronautique Internationale, the standard setting and record-keeping body for aeronautics and astronautics, as “the first sustained and controlled heavier-than-air powered flight”.

The Wrights built the aircraft in 1903. Since they could not find a suitable automobile engine for the task, they commissioned their employee, Charlie Taylor, to build a new design from scratch. A sprocket chain drive, borrowed from bicycle technology, powered the twin propellers, which were also made by hand.

The Flyer was a canard biplane configuration. As with the gliders, the pilot flew lying on his stomach on the lower wing with his head toward the front of the craft in an effort to reduce drag. He steered by moving a cradle attached to his hips. The cradle pulled wires which warped the wings and turned the rudder simultaneously. The Flyer’s “runway” was a track of 2x4s stood on their narrow edge, which the brothers nicknamed the “Junction Railroad”.

The Wrights pioneered many of the basic tenets and techniques of modern aeronautical engineering, such as the use of a wind tunnel and flight testing as design tools. Their accomplishment encompassed not only the breakthrough first flight of an airplane, but also establishing the foundation of aeronautical engineering.

The Wright brothers’ first flight lasted only 12 seconds, but their fourth flight lasted 59 seconds and demonstrated that the brothers had created a true airplane.
A REFOCUSED MISSION

“We identify within this industry, a need to bridge the gap between the K-12 world and the aviation industry in and of itself.”

-Dr. Brian Barsanti
SMF Executive Director

To bridge that gap, the museum has a plan to help serve the industry. Airbus broke ground on a new manufacturing facility in Mobile last month. Huntsville has Boeing. With other jet engine manufacturers in the state, Alabama is ripe for more aviation-related jobs.

To fill this need, more focus needs to be on civilians. The military has a good tradition of already setting people up for success and entering this industry. But for civilians it can be a difficult road to navigate. What is lacking on the civilian side is to provide 12th graders who want to get into this industry, into aviation – whether it be maintenance, as a mechanic, as an engineer, as a pilot – how do you get them to that point? And how do you navigate the educational road to get there?

In addition to big plans to expand its educational outreach in its new location, the museum faces challenges in its current location, including being in a flood plain and surrounded by homes which make expansion difficult. A quarter of the museum’s collection is located in an airpark down the road from the main museum building.

“We are relocating because we’ve simply run out of space,” Barsanti said. “Our museum’s collection has grown over the last several decades and I think that our founders back in the 1960s probably had no idea that we would grow to the size that we’ve become to include 100 aircraft.”

Barsanti envisions a future for the museum as a career-tech, teaching facility that partners with the community college system and local schools to provide educational routes into the industry. In addition to traditional programming, certification might be offered.

While the aviation industry is booming, many aviation skills transfer to other industries, such as the automotive industry. “So not only are you getting well equipped to serve the aviation industry, but you’re also equipping yourself to serve multiple industries within the state,” Barsanti said.

A synergy will exist between the museum, Barber Motorsports Park, Barber Vintage Motorsports Museum, and other organizations that are going to eventually build and provide jobs in this area.

THE FIRST AIR FORCE ONE?

Though Eisenhower was the first president to fly on Air Force One, he certainly was not the first president to fly. That honor goes to Theodore Roosevelt, who flew in a Wright Type AB on October 11, 1910 during a campaign event for the Missouri State Republican Party. The pilot was Arch Hoxsey and the flight was made at Kinloch Field in St. Louis, Missouri. Arch Hoxsey was an instructor at the Wright Flying School in Montgomery, Alabama and was also the first pilot to fly at night.

The first president to use a plane for official business was Franklin D. Roosevelt, who made a four-day, cross-Atlantic journey in 1943 to hold a strategy meeting with Winston Churchill in North Africa.

The flight was very risky, but advisors believed the proliferation of German U-boats made travel by sea even riskier.

Today, Air Force One is a bit different aircraft, and a whole lot more expensive!
Displayed at the museum’s Memorial Airpark is one of business aviation’s most enigmatic aircraft. The Beech Starship, which was intended as a replacement for the King Air, was the first aircraft with an all-composite fuselage. The twin-turboprop pusher with radical canard forward design underwent a lengthy development and certification process before finally entering service. However despite the airplane’s futuristic name, design and advanced engineering, the program was a bust for a variety of reasons including a debut coinciding with an economic downturn and a high purchase price on a par with that of entry-level jets.

Of the 53 Starships built before production ceased, only 11 were purchased by private owners; the remainder were offered on lease by then-parent company, Raytheon Aircraft. Faced with the formidable cost of supporting such a small fleet, the manufacturer decided to pull the plug on the program and moved to decommission and destroy the aircraft under its control. As leases ended, the aircraft were parted out and incinerated. Several were donated to museums, which promised never to allow the aircraft to fly again.

The Southern Museum of Flight received a Starship from Raytheon Aircraft identified as NC-14, registered as N214JB on 5/12/1995. Beech serial numbers began with two seemingly random letters, but some think NC signified “New Concept”; others think it was a play on the United Federation of Planets’ starship registration from “Star Trek”. Today, there are only 5 Starships currently registered with the FAA (NC-29,-35,-45,-50,-51) and 8 Starships displayed at aviation museums, including one with an Australian museum (NC-28).

In 2011, a testament to the Beech Starship was made by a former Board member of the museum and member of the Alabama Aviation Hall of Fame, Randall Whitehouse (1948-2018).

Randall was a former combat helicopter pilot and later served as a Vice President of Hanger One/Beechcraft/Raytheon. He said of the Starship, “This aircraft was an absolute pleasure to fly. The aircraft’s exterior design was attractive and functional in all phases of flight. Each location we would land at produced an array of curious aviators and non-pilots. Everyone wanted to have their picture taken with the Starship in the background. For quite some time it was the rock star of aviation. I sincerely wish that Beech would have continued with the design improvements as it could have been the springboard of an entirely new aviation concept. I believe that one major detriment to its sales demise was the premature performance numbers which proved to be slightly ambitious although initially touted as conservative.

Starship was a Cinderella that was never found by Prince Charming.”
A NEW MISSION FOR THE SMF

AVIATION WORKFORCE INITIATIVE

Did you know that there are companies right now scrambling to figure out how they are going to fill over 480,000 job vacancies in the United States and over 800,000 vacancies globally? Did you know that there are three Aviation schools in Alabama that are working to train students to help do just that, but that none of them are in the Birmingham area?

The Southern Museum of Flight has planned and organized a multi-faceted Aviation Workforce Initiative. This project will initiate several Flight Clubs in Birmingham and Jefferson County schools, establish a permanent multi-media historical Alabama aviation exhibition, create an Aviation Technology Center and develop a high-tech educational outreach program that will be free for the Birmingham City Schools.

**Flight Club Outreach:** The SMF Pre-K-12th grade School Flight clubs will follow the FAA’s Aerospace Curriculum Model and be adapted to specific grade levels.

**Exhibition and Outreach Program:** This project is an extension of SMF’s Aviation Workforce Development Initiative and Flight Club curriculum that creates a multi-faceted permanent exhibition and custom educational videos to enhance our patrons’ educational, cultural, societal and historical experiences. The Alabama’s Aviation: Past, Present and Future exhibition will include creating and producing a multi-purpose video, historical and current aviation related photographs, 3-D aviation models as well as a teacher resource guide.

**Aviation Technology Center:** We are repurposing & redesigning our EAA Hangar to become our innovative Aviation Technology Center (ATC) and in our Heritage Gallery, we will organize and develop Alabama’s Aviation: Past, Present and Future, a permanent multi-media exhibition. Our ATC is based on our partnership with the Alabama Community College System’s Aviation Pathway Plus Program. SMF will be able to help students complete career training and earn college credits, earn nationally recognized workforce certificates from the American Society of Testing Materials International’s National Center for Aerospace & Transportation Technologies (NCATT). High school students can participate in the Aviation Pathway Plus Dual Enrollment Program. In this program, high school students will learn the skills needed to earn a workforce certificate, as well as credits toward an associate’s degree in aviation.

The Southern Museum of Flight, since our inception, has been successful in providing a unique cultural and educational experience to the Birmingham area. Our new Aviation Workforce Initiative will merge not only our cultural world but use our museum and our exhibit experiences as tools for the promotion of aviation’s future and its relationship to our society’s past, present, and future.

AIRCRAFT MECHANIC SHORTAGE MEANS BOOM TIMES FOR AVIATION PROGRAMS

It takes a lot of people on the ground to keep airplanes in the sky, and a shortage of aircraft mechanics around the country is causing employers to get creative and some school programs to swell.

As aviation booms in the Duluth area, led by plane maker Cirrus Aircraft and aviation services company AAR Corp., Lake Superior College (LSC) has likewise seen enrollment growth for its aircraft maintenance technology program hit another record this year. “We’re seeing workforce shortages across the board in manufacturing, health care, but aviation is stepping up and putting some skin in the game,” Minneapolis Community and Technical College has likewise seen enrollment growth for its aircraft maintenance program, located inside the Delta Air Lines hangar at Minneapolis-St. Paul International Airport. The airline has also partnered with LSC and dozens of other schools around the country to “mentor and source the next generation of aircraft maintenance technicians” as it faces more than 2,000 retirements in the next decade. Across North America, Boeing estimates there will be a demand for 193,000 aircraft mechanics alone over the next 20 years.

“Everybody is begging for mechanics,” said Lynn McGlynn, aerospace case manager and academic adviser at Northland.. “These companies are going to have to start giving incentives because there’s so much competition out there.”

If you don’t get a job in aviation right now, it’s because you’re not trying,” said LSC instructor William Beecroft.
MEMBERSHIP

When It Comes to Southern Aviation History …
Just Ace It!

With a Southern Museum of Flight Membership!

Yes, I would like to become a member of the Southern Museum of Flight
Your membership will help the museum continue its work in preserving southern aviation history, restoring historic aircraft and inspiring students to excel in science and technology

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A Museum Membership
Makes A Great Holiday Gift!

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The Southern Museum of Flight acknowledges the support provided by the Jefferson County Commission through the Jefferson County Community Arts Fund administered by the Cultural Alliance of Greater Birmingham.