

# aloft



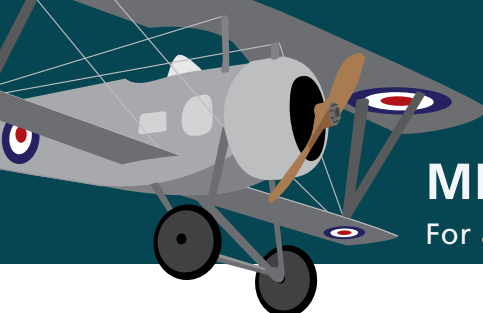
Volume 38, Number 2

March | April 2016

THE MUSEUM OF FLIGHT  
MAGAZINE

## BEYOND THE TERMINAL

Page 18



# MEMBER EVENTS AND ANNOUNCEMENTS

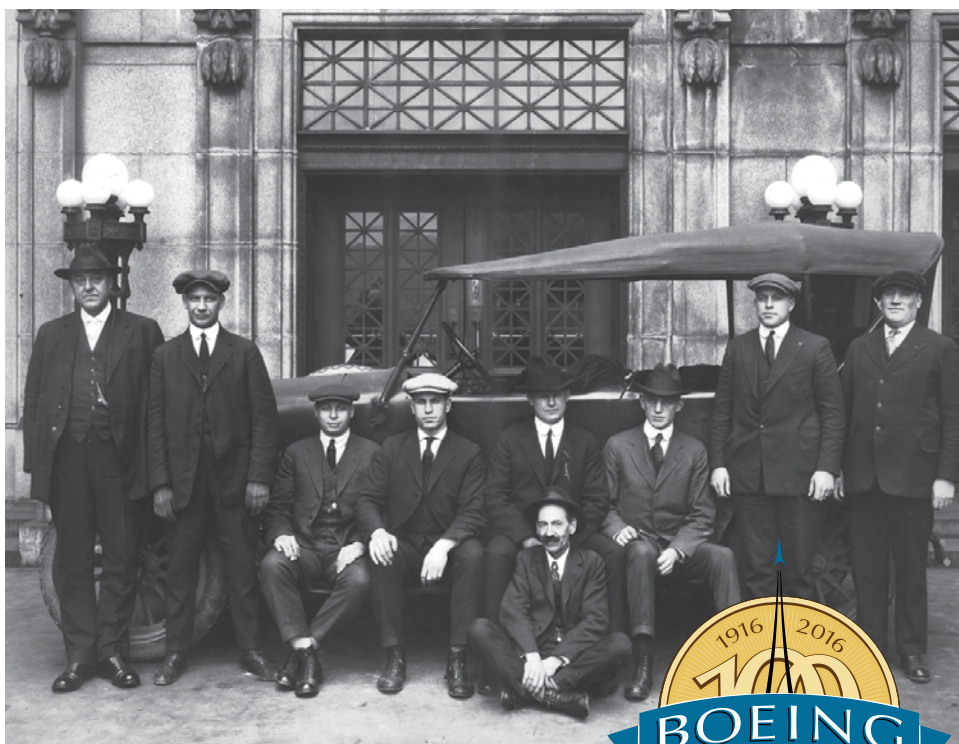
For all events, please R.S.V.P. to [membership@museumofflight.org](mailto:membership@museumofflight.org).

## Member Movie Night: "Unbroken"

Friday, April 1 | Movie starts at 6 p.m. (Doors open at 5:30 p.m.)

William M. Allen Theater

This true-life tale of Louis Zamperini, the Olympic track star who survived a plane crash in World War II, only to fight for his life against nature and as a prisoner of war. Screenplay by Joel and Ethan Coen and directed by Angelina Jolie. Rated PG-13 for language and war violence including intense sequences of brutality.



## Member Exclusive!

Saturday, March 12 | 7 p.m.

J. Elroy McCaw Personal Courage Wing

Calling all bootleggers and beware the Seattle Dry Squad! Celebrate the 1930s with a speakeasy themed 21+ party! Enjoy yummy bites, music, dancing, and a bit of hooch as we travel back in time to the days of "blind pigs" and Bonnie and Clyde. Costumes are encouraged! Be on the lookout for your emailed invitation or check our website for more details as they become available.



## Ways to Save with your Museum Membership!

- 15% off at the Museum Store
- Aerospace Camp Experience Discount
- Discounts on movie tickets, simulator rides, and ticketed events



## A Day in the Life of the Collections Department

Friday, March 18 | Noon to 1 p.m.

NW Aeroclub Room (Red Barn, 1st floor)

Saturday, March 26 | 10:30 to 11:30 a.m.

Drafting Room (Red Barn, 2nd floor)

The Collections Department works tirelessly to care for hundreds of thousands of artifacts, archival materials, and library collections related to the history of aerospace. Join the Team as they discuss what it takes to collect and preserve these relics, assist researchers, and put up the exhibits throughout the Museum.

## Apollo 12: The Second Moon Landing

Friday, April 15 | Noon to 1 p.m.

NW Aeroclub Room (Red Barn, 1st floor)

Join Geoff Nunn, Adjunct Curator for Space History, as he shares the importance of the Apollo 12 moon landing mission, second only to Apollo 11, but the first to achieve a precise landing.

## STEM starters

Explore the wonders of aerospace during this fun, educational program! For ages 3 to 5 years (adult helper required). Space is limited to 12 families (one child/one adult per family) at each program.

To attend, please R.S.V.P. to [membership@museumofflight.org](mailto:membership@museumofflight.org).

Monday, March 14 and Monday, April 11

10:30 to 11:30 a.m.

Drafting Room (Red Barn, 2nd floor)

Monday, March 28 and Monday, April 25

3 to 4 p.m.

NW Aeroclub Room (Red Barn, 1st floor)

In March and April, we will explore forces and motion. Enjoy an interactive story about moving and rolling and then get moving yourself, building, and testing ramps.

## CONTACT THE MUSEUM

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Questions or Comments?  
Email us at [aloft@museumofflight.org](mailto:aloft@museumofflight.org)

On the cover: The tower at Abu Dhabi International Airport on an island just off the Arabian Peninsula. (Carolyn Russo/Smithsonian)



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Volume 38, Number 2

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THE MUSEUM OF FLIGHT  
MAGAZINE



The Museum's Boeing 727 Prototype undergoing restoration in preparation for its final flight. (Ted Huetter)

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Correction: In the January/February 2016 issue, the cover photo was an interior shot of a Boeing 727-100 fuselage, not a Boeing 707.



Smithsonian Institution  
Affiliations Program





Happy New Year! 2016 is off to a truly incredible start.

Our *Inspiration Begins Here!* campaign is gaining momentum as we enter the Community Gifts Phase. We have now surpassed the 82% mark of our \$77 million goal. Two of the campaign's most visible high points were the creation of The Boeing Academy for STEM Learning and the groundbreaking of the Aviation Pavilion. It has been amazing to watch the comprehensive campaign's largest project—the Aviation Pavilion—evolve from a massive construction site to a winter nest for the B-17 Flying Fortress and Boeing 787 Dreamliner. Please read more about all of the exciting campaign projects in a special section of this issue.

The opening weekend of the Boeing Centennial Exhibit on Jan.23 set the tone for an incredible year of public lectures, films, airplane fly-ins, and family activities centered around local culture in the context of Boeing's history. Take a look at the celebration highlights on pg. 5, and continue to check our website for updates on Centennial Weekend presentations and activities.

But that's not all we have to celebrate on the Boeing Centennial front. Coincidentally enough, it gives me great pleasure to announce the upcoming final flight of the first Boeing 727! We are now weeks away from finishing a 25-year effort restoring the historic, first Boeing 727 prototype and flying it to the Museum for permanent exhibition. This unique jet has not been airborne since it was donated to the Museum by United Air Lines in 1991, and has been under restoration ever since by volunteer crews at the Museum's Restoration Center and Reserve Collection at Paine Field, Everett, Wash. First flying in 1963, the sleek, innovative 727 introduced the jet age to millions of new passengers around the globe, and was for many years the most successful airliner of the modern era.

With a special flight permit, and only the pilot, co-pilot and engineer onboard, the 727 will be flown directly to the Museum at Boeing Field. This ferry flight to Boeing Field will be the Trijet's last air trip, as it will join the Museum's prototypes Boeing 737 and Boeing 747 for permanent exhibition in the Museum's new Aviation Pavilion this summer. An exact flight time will be determined after the plane's renovation is completed. To commemorate the final flight and follow the latest 727 updates please visit: [museumofflight.org/727-final-flight](http://museumofflight.org/727-final-flight).

Love is in the air as our beloved bird prepares to take flight, and the Museum partners with Wings of Rescue to host a precious, puppy fly-in: 150 furry friends to be exact! On Feb.13, you won't want to miss this unique opportunity to welcome these rescue dogs. Post disemBARKment, enjoy a public meet and greet with the pilots and the co-founder to learn more about the organization. PAWperazzi welcome!

As the Museum launches into spring, we have a lot to look forward to! Keep your eyes peeled for the amazing spring migrations of our mechanical birds to the Aviation Pavilion. March will be a momentous month!

Sincerely,

Douglas R. King  
President and CEO

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## Sensational Centennial

On Jan. 23-24, the Museum premiered the Boeing Centennial Exhibit with a jam packed weekend of exciting activities for the family to enjoy. Visitors gathered at the hub in our main lobby to share their connection with the company on centennial themed post-its, to listen to the oral history videos from some of Boeing's most influential innovators, and to snap photos and selfies in front of the posh 1960s 747-100 "Tiger Lounge." Engaging living history performers dressed as wing weavers, pilots, wood workers, machinists, and 'Rosies' interacted with our Saturday guests as they viewed the highlighted Boeing aircraft and artifacts displayed throughout the Museum. The day's festivities concluded with a historical lecture about the origins of Boeing airplanes from the always-amusing aviation historian Mike Lavelle.

On Sunday, the celebrations shifted to our World War galleries in the J. Elroy McCaw Personal Courage Wing where Museum visitors strolled to the the symphonic sounds of the Boeing Employee Concert Band. At noon Great War angels a.k.a. Salvation Army Lassies waltzed in, doling out donut samples to children of all ages while the Museum's Director of Education, Seth Margolis, told the legendary battle tale of the intrepid Pigeon of Valor, Cher Ami. But that's not all, there was a special screening of the classic film "Dawn Patrol" for movie fans, seaplane make-and-takes for mini pilots, and an epic performance from Seattle's Balkan brass party band, the Bucharest Drinking Team. A special thanks to the wonderful group of GE Aviation volunteers who assisted with the membership event and Bank of America Weekend Family Workshops.

If you missed out on the January events, rest assured Centennial Weekends will be happening monthly with lively celebrations of the culture that shaped great moments in The Boeing Company. Indulge in some time traveling with live music, film, dance, performance, and tastings from each era. There's even lectures, airplane fly-ins, and new exhibits for the aviation enthusiasts.

**Clockwise from top:** Ridely sure knows a thing or two about World War I. (Ted Huetter) A father and son admire an engine in the William E. Boeing Red Barn. (Ted Huetter) Community inspiration from the Boeing Centennial Connection display. (Rachel Dreeben) • Balkan Brass invasion in the PCW! (Ted Huetter) • Twins, Aurelia and Vega take donuts very seriously. (Rachel Dreeben) • Salvation Army Lassies prepare to serve "the troops." (Ted Huetter)



# Recreational Drones

## Changing How We Take to the Skies

By: Geoff Nunn,  
Adjunct Curator for Space History at The Museum of Flight

Recreational drones are swarming into the American skies and opening access to a growing population of tech-savvy hobbyists. Cross-pollination with other technologies is leading to all new activities and sports, and is blurring the lines between recreation and commerce.

The other night, my wife and I were watching a video on YouTube made by Lindsey Stirling, a violinist who often covers popular music and soundtracks from films and videogames. In this particular video, Stirling was playing a tribute to the "Lord of the Rings" movies while strolling across open hillsides. The video included several sweeping aerial "helicopter" shots ubiquitous to both the epic adventure movies she was honoring, and the big budget hair band videos of the 1980s.

It took a second to register, but then my wife and I looked at each other with the same quizzical look. How does a YouTube creator afford a helicopter for a film shoot? Then we quickly realized that she didn't need a helicopter! Stirling got her aerial shots using a small unmanned aerial system (sUAS) commonly called a drone. Some digging in her behind the scenes videos revealed that indeed, her team uses camera toting octocopters to add big budget flourishes to small screen films.

The use of drones for aerial filming is just one example of how they are democratizing the skies— lowering the price point of flight as a hobby. Octocopters like the one Stirling uses in her YouTube videos are expensive as sUAS's go. They cost between \$1,000 and \$10,000 each. By contrast, however, helicopter rentals for film shoots cost about \$1,000 an hour, and that doesn't include the pilot or fuel. As technologies such as autopilot, GPS navigation, and facial recognition software work their way into new, commercially available drone systems, they are quickly becoming documentary platforms for

amateur filmmakers and outdoor sports enthusiasts like skiers and surfers who can deploy their robotic camera platforms to record their every turn.

Recreational drones are also being paired with virtual reality (VR) technology, giving rise to new sports like FPV (first-person view) drone racing. Operators wear VR headsets that put them "in the cockpit" of their racing drones. In 2015, the California State Fairgrounds played host to the first ever U.S. National Drone Racing Championships. The three day event featured 120 pilots competing in team and individual events that emphasized speed and agility. One of the most unique characteristics of FPV racing is that spectators can put themselves in the driver seat by syncing their own VR headsets to their favorite drone's camera.

The emergence of recreational drones has proven to be a much needed boon to hobby stores which now must compete with online retailers and videogames for customers' dollars. I asked Lee Piester, the founder of model rocket manufacturer Centuri Engineering and owner of the Hobby Bench chain of hobby shops about how drones have affected his business. Hobby Bench began selling drones about two years ago, and they quickly became their "biggest selling flying hobby product ever". That is not an insignificant statement from a man who has been in the flying model and toy business for over 50 years.

So, just how popular are these little flyers? In 2014, drone manufacturer 3D Robotics estimated that at least 500,000 recreational drones had been sold in the United States. By comparison, the General Aviation Manufacturers Association (GAMA) listed the United States' total general aviation fleet at 199,000 aircraft in 2014 with worldwide general aviation numbers

standing at 362,000 total aircraft, leaving piloted craft significantly outnumbered by their diminutive counterparts.

The rapidly growing population of drones, combined with a growing list of reported incursions between recreational drones, commercial aircraft, and even firefighting helicopters has been a source of concern. Reports of accidents and near misses helped prompt the Federal Aviation Administration (FAA) to take action to tease apart the differences between model aircraft, sUAS's, and federally regulated aircraft. The FAA had traditionally drawn the line at operating altitude and nature of use. Recreational drones had to stay below 400 feet, and could not be used as part of a commercial business. On December 21st of last year, the agency further clarified its definitions when it issued a new requirement for operators to register any drones weighing between 250 grams and 25 kilograms (0.55 and 55 pounds) Anything below that limit is now considered a model aircraft, and doesn't need registration. Anything above this range is considered an aircraft, and subject to previously existing FAA protocol. Those in between are sUAS's which must be registered, and abide by a set of recently codified safety guidelines. The one exception to these new weight categories applies to drones put to commercial use. Any UAS, regardless of size, needs to be registered if it is used as part of a business.

I asked Piester if these new regulations had any noticeable effect on Hobby Bench's sales during the last holiday season, and he said, "The vast majority of drones sold in hobby stores weigh far less than the eight ounce FAA registration requirements." Though 250 grams does not sound like a lot of weight, you can pack a lot of capability onto a drone under that limit. Hobby Bench's most popular model is a quadcopter that weighs just 120 grams, which can be equipped with FPV camera technology. National statistics suggest that December's regulations did little to ward off pilots. Recall the 2014 statistic that there were 500,000 recreational drones in the United States? Well, according to the Computer Technology Association, another 400,000 were added to this number during the 2015 holiday season alone, and 181,000 new pilots registered their drones in the first three weeks after the regulations went into effect. Americans seem to be sending their robotic proxies into the skies undeterred.

Now that the FAA has clarified its definitions of model aircraft, small UAS's, and "full-size" aircraft, the next term that may need some examination is "commercial activity." The first sentence on the FAA's model aircraft operations page states "Model aircraft are for hobby or recreational purposes only." But the line between business and pleasure is becoming as muddy as the line between aircraft and flying toy.

While some drone uses like real estate photography, livestock monitoring, or (proposed) door-to-door package delivery fall clearly into the definition of commerce. What happens when drones are utilized by less traditional industries as in the creation of YouTube videos? If violinist Lindsey Stirling hired a professional aerial photography service using a drone, what's to question that activity wouldn't become more commercial. Even if she didn't, she is one

of the world's top-earning YouTube stars with a channel that brings in millions annually. Though she technically makes her living as a musician, her channel plays a significant part in her business. But what about lesser known YouTubers who might score an unforeseen viral video with drone footage they shot for fun? Are they now professional filmmakers? What of the growth of FPV racing? Last year's drone nationals featured \$25,000 in cash and prizes to the winners. Are they hobbyists or professional racers?

One thing is clear, the emergence of recreational drones is changing the way we use the skies. The combination of miniaturized aerial vehicles with other tech like cellphones, virtual reality, streaming video, and GPS navigation is opening up a world of exciting new possibilities. We are only beginning to sift through the ways these changes have affected the ways we have fun, do business, and the ways we fly.

### GENERAL AIRCRAFT vs. RECREATIONAL DRONES (in the United States)



DRONE PILOTS REGISTERED  
(within first three weeks of FAA regulations  
put into effect in 2015)

# 181,000

Statistical data taken from the Computer Technology Association and the General Aviation Manufacturers Association.

# CREATING ONLINE ACCESS TO **WORLD WAR I** MATERIALS AT THE MUSEUM OF FLIGHT

On January 4, 2016, the Council on Library and Information Resources (CLIR) announced the 2015 recipients of their **Digitizing Hidden Special Collections and Archives: Enabling New Scholarship through Increasing Access to Unique Materials** grant program and we are proud to say that The Museum of Flight was among the winners! The Museum will receive a \$58,200 grant to support a digitization project developed by the Archives team entitled **“I thought there was nothing so glorious as war...”: Creating Online Access to the World War I Materials at The Museum of Flight**. The 18-month long project will digitize and create an online repository of approximately 2,500 photos, 25 aircraft and engine manuals, 23 pieces of sheet music, 53 stereo cards, and 6 cubic feet of manuscripts and ephemera from our Archives that are related to the history of World War I. | By: Amy Heidrick, Supervisory Archivist at The Museum of Flight

## GRANT PROGRAM

CLIR's Digitizing Hidden Special Collections and Archives grant program is a national competition to fund projects that digitize and make publically available rare and unique materials that are essentially considered “hidden” in the collections of cultural memory institutions such as The Museum of Flight. “Hidden” collections are those that have never been discovered by the public at large, either because they've never been displayed freely, made available digitally online or any other public format, or have never had detailed descriptions or finding aids created for researchers to explore. One of the primary goals of the program is to incite new knowledge by presenting these unseen collections to a world-wide audience through concerted digitization projects and online dissemination.

CLIR has an extensive application that took nearly nine months to complete. Our Archives team collaborated to develop every aspect of the digitization project. This comprehensive process went beyond a step-by-step plan outlining both the specific collections to be digitized and the technology components necessary to achieve such a database. In fact, we were asked to justify all prospective content for historical significance and educational value, synthesize a strategy for rights issues, and address the overall sustainability of a project of this scope. Out of the 165 applications that CLIR received in 2015, The Museum of Flight's project to digitize our

archival holdings related to World War I was one of only 18 projects to receive funding.

## THE PROJECT

The centennial of World War I has strengthened and renewed scholarly interest in all aspects of the war and its effects on our world. The war started a mere eleven years after the Wright Brothers took their first flight at Kitty Hawk and in a single decade, aviation technology advanced enough that aircraft and the pilots that flew them became an essential aspect of warfare. Collections related to the technical aspects of World War I-era flying and aircraft, as well as the personal effects and ephemera of World War I pilots, are an invaluable resource. As the United States

*Digitizing approximately 2,500 photos, 25 aircraft and engine manuals, 23 pieces of sheet music, 53 stereo cards, and 6 cubic feet of manuscripts and ephemera.*

approaches the 100 year anniversary of our entry into the war, our Archives team felt that digitizing our holdings that relate to this topic would not only be a timely commemoration of the anniversary, but it would make new scholarly resources on this history widely available, deepening our understanding and appreciation of the people who built and flew aircraft during this time period. The project

will also be a significant first step in developing a formal digitization program for The Museum of Flight Archives.

The World War I-related collections at The Museum of Flight cover both the technical aspects of flight and the personal experiences of the individuals flying the aircraft. A majority of the collections included in this project came to the Museum through family donations or through our acquisition of the Champlin Fighter Museum and American Fighter Aces Association collections. The collections range from scrapbooks and letters from residents of the Pacific Northwest to photographs and documents from nationally

renowned flyers. They are the personal collections of pilots that uniquely illustrate their individual wartime experience and tell stories of their triumphs and hardships, most of which have never been told before. Individual collections include a detailed account of Seattle native Norman Archibald's wartime experience as a pilot for the 95th Aero Squadron in France,

which inspired his book *Heaven High, Hell Deep*, as well as the personal collections of celebrated American Fighter Aces Hamilton Coolidge and Joseph Wehner (who is quoted in our project title for this grant). In addition to these personal collections, we will digitize aircraft and training manuals and other technical documentation. These items are extremely rare and will provide a closer look at the state-of-the-art flying machines of the time period.

Without a digitization plan in place and without an online platform to make these materials widely available in digital format, we have been less effective in sharing these collections, in their entirety, with our remote researchers. This project seeks to remedy this by creating and implementing a digitization program that will successfully fulfill the needs and wants of our researchers, world-wide, who

are interested in aviation during World War I. The centennial of America's entry into the war is a perfect time to open these rare and unique items up to fresh examination by scholars, students, and the general public.

## TIMELINE

On Feb. 1, our Archives Team, led by Supervisory Archivist Amy Heidrick, started creating the documentation related to the actual digitization project: by establishing scanning standards, work flows and processes, creating a cataloging guide for the digitized materials, and becoming familiar with the Omeka (the online platform for the digitized materials). This summer, we will hire a temporary Project Archivist to upload content, assess usability, and promote the site. We anticipate the project to launch in late spring of 2017.

## FUTURE IMPACT

Many museums are moving towards reproducing their collections online in searchable databases, online exhibits, and image galleries. We have received many requests for The Museum of Flight to begin doing the same with our one-of-a-kind, world-class aviation and aerospace collection. This project is in direct response to those requests and is the first vital step in making our collection publically available to a larger audience. The Museum of Flight will use this project to establish the digitization standards and requirements necessary to create a dynamic online presence and to expand the reach of our collection by making it widely available online.



What: Samples of World War I-era sheet music.

Collection: Walter and Flossie Smith Collection

Copyright status: Public Domain



What: Notice addressed to 2nd Lieutenant Eric G. Peter, thanking him for his service in the Royal Air Force during the war, circa 1919.

Collection: Eric G. Peter Collection

Copyright status: Public Domain



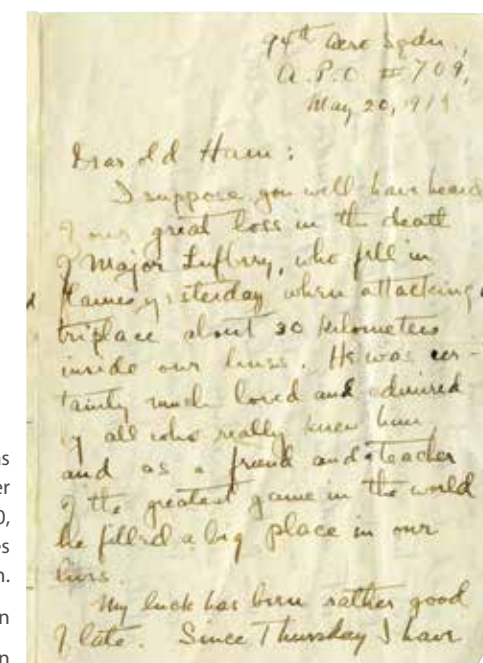
What: The British SSZ (Sea Scout Zero) class patrol airship landing on an aircraft carrier.

Collection:

John Sylvester Wheelwright Collection

Copyright status:

Public Domain



What: A letter from fighter pilot Douglas Campbell to his friend and fellow fighter pilot, Hamilton Coolidge, dated May 20, 1918. The letter describes recent air battles that Campbell was involved in.

Collection: Hamilton Coolidge Collection

Copyright status: Public Domain



## Curator's Corner

Your questions answered  
by the Museum's Chief Curator,  
Dan Hagedorn.

**Q: What is the recommended pathway for a Museum curatorial career? - Bill W.**

A: I can only speak for aviation and aeronautical museum establishments, Bill, and I would love to be able to tell you that there is a clearly delineated, well-established pathway. Certainly there are prerequisites that are, I think, fairly common. These include achievement of broad, established educational gateways – with an emphasis on history, the history of technology, geography, and fundamental research skills. But these preparatory hurdles need to be accompanied by developing communications skills, both verbal and via the written word, since a curator's primary task is to “make connections” for people in an understandable, hopefully engaging, and yet authoritative manner. When a curator tells you something factual, you need to be able to take it to the bank. I've often said that the historian/curator's first duty is attention to detail, because if you can't define the 'small stuff,' how on earth can you be relied upon to get the 'big stuff' right? Several years ago, I had a visit from a father and son, which I enjoyed very much. The son, aged perhaps 11 or 12, had told his father that he wanted to be a curator when he grew up and, being a good Dad, his father wanted to put this young American in touch with someone who might encourage that ambition. It gave me pause, as I contemplated exactly what I was going to tell this young man. As we sat in my office chatting, he noticed the rather large number of books on my shelves – as I had told him that the most important thing that I hoped he would take away and remember from our conversation was the importance of reading and retaining what he read. As he gazed up and down the rows of books, he asked the question that only a youngster would ask: “Which one?” And,

of course, I replied, “No, no, you must read all of them – and more!” I sincerely hope he finds his calling. But when all is said and done, when the ink is long-since dried on the ancient degrees and honors, the single most important qualification to become a curator, I believe, is a genuine, life long passion for your subject – and the realization that, even though folks often use the term ‘expert’ to describe what you do, in reality, you are really only a student of the subject – who has read a lot.

**Q: What attracted you and your son to write your excellent book on the Douglas B-18? - Gary G.**

First of all, thank you for the compliment; it really means a great deal to us. To answer your question, I fear that I have to tell you a story to prepare. Years ago, while I was stationed in the (former) Panama Canal Zone, I became interested in the history of aviation in defense of the vital Canal. I researched and published a rather lengthy “brief history” on the subject in the Journal of the American Aviation Historical Society in 1974 and, about 20 years later, a major book on the subject entitled ALAE SUPRA CANALEM (Wings Over the Canal). In the course of research, I interviewed 31 former U.S. Army airmen who had served aboard B-18s in the Caribbean region (amongst many others) and, to my surprise, not a single one of them had a negative thing to say about the lowly B-18. In fact, to a man, they extolled her virtues. Throughout my reading of the popular literature published post-war in the 1950s and 1960s, the B-18 was the subject of no end of ridicule and so, after talking with so many men who had actually crewed aboard the aircraft, I asked myself, “How could so

many people be so wrong?” What followed was a process of discovery, we realized that not one of the chroniclers of the B-18 that had published accounts of the aircraft prior to our book had ever set foot in the Douglas (now Boeing) Archives, the National Archives, or the USAF Historical Research Agency. In other words, it appears that they merely repeated the same generalized myths over-and-over, adding a new photo or two now and then, without ever having actually performed ‘grunt work’ research on the aircraft, its evolution, wartime service, or performance. Mind you this is not in any way meant to deprecate the ‘first wave’ of aviation historians that contributed to the periodicals of the 1950-1970 period; I believe that most of them were doing the best they could with what they had. Dan Jr. and I began to wonder exactly how often this same process has been repeated. At the risk of being labeled ‘revisionist historians,’ we set out to document the actual design, evolution, fielding, and wartime contributions of the aircraft series and her lineal descendant, the B-23. After the book was released, I went to the Archives of the National Air and Space Museum to conduct research on yet another obscure aircraft that was built in considerable numbers, the Curtiss-Wright AT-9 Jeep advanced trainer of WWII. When I signed in and announced my subject to the staff, they groaned “Oh great, here's Hagedorn researching yet another unloved aircraft.” You betcha. By now you'll have caught the trend here: even though we've collectively done a pretty good job of documenting the first 113 years of practical manned flight, we still have a lot to learn.

Have a question for the curator? Send an email to [aloft@museumofflight.org](mailto:aloft@museumofflight.org) with your name and question. It may be featured in the next Curator's Corner!

## What's New in the Collection?

By: *Chrisine Runte, Registrar at The Museum of Flight*

This donation made by John and Donna Fabian is a set of silver, encased, Space Shuttle medallions made by the Robbins Company. Each medallion is designed by the Robbins Company from the official Space Shuttle mission patch. This donation is a full set of medallions from STS-1 through STS-135. The medallions can only be purchased by current or retired astronauts through the NASA astronaut office. The dyes used in production are exclusive to each medallion. They are truly unique collectables. John Fabian, the donor, is a retired astronaut. His first mission was STS-7, 1983, which included Sally Ride, the first American woman in space.



[museumofflight.org](http://museumofflight.org)

# March

## FLIGHT PLANS

WELLS FARGO

**Thursday, March 3 | 5 to 9 p.m.**

*Museum-wide*

### Wells Fargo Free First Thursday

On the first Thursday of each month, the Museum stays open late – and admission is free. Enjoy the Museum's Great Gallery, Personal Courage Wing and more from 5 to 9 p.m., courtesy of Wells Fargo. The Museum store and Wings Café will also remain open for extended the hours. Airpark will be open from 5 to 7 p.m.

**Saturday and Sunday, March 12 and 13 11 a.m. to 4 p.m.**

*T. A. Wilson Great Gallery*

### Centennial Weekends: The Troubled Thirties

Experience aviation during Seattle's Great Depression through the crooners of the era, 1930s eats, and a tour of the visiting P-26 Peashooter. Prohibition is over, so lighten up for Fred Astaire's "Flying Down to Rio" film screening and a special talk with Night Witch author SJ McCormack about historic character research. Visit living history characters Amelia Earhart and Ellen Church, then fly in style with a tip-to-tail tour of the Model 80-A.

**Saturday and Sunday, March 12 and 13 10 a.m. to 5 p.m.**

*Side Gallery*

### Soaring Expo

The member clubs of the Seattle Glider Council once again present a glimpse into the fascinating world of silent flight at Soaring Expo 2016 during the weekend of March 12-13. Full-size gliders and radio-controlled gliders will be on display. Lectures, movies and glider flight simulators are offered all weekend. Representatives of local soaring and RC glider clubs will be on hand to answer questions for anyone interested in pursuing the sport of soaring or becoming a glider pilot. Clubs include Evergreen Soaring and Puget Sound Soaring.



**Friday, March 18 | 1 p.m.**

*Charles Simonyi Space Gallery*

### NASA's OSIRIS-REx Update #4

NASA's OSIRIS-REx spaceflight mission to an asteroid is set to launch in Sept. 2016. Its destination is Benu, a carbonaceous asteroid as old as our solar system. OSIRIS-REx could give us our closest look yet at the formation and history of the Sun and planets. Join us every month until launch for a video chat with OSIRIS-REx experts!

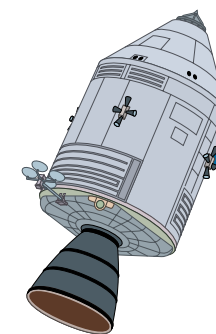
**Saturday, March 26 | 2 to 3:30 p.m.**

*William M. Allen Theater*

### Women Fly! featuring Astronaut Soyeon Yi

Dr. Soyeon Yi, South Korea's first (and only) astronaut shares her extraordinary story, her space mission, and her harrowing reentry to planet Earth as recently documented on The Science Channel. Dr. Yi joins us for an encore presentation that will amaze and inspire us as part of the Women Fly! Program. Women Fly is an annual event hosted by the Museum for young women interested in aviation and aerospace careers. Students from across the state participate in a series of inspirational and career-oriented workshops led by exceptional women working in aerospace-related fields.

Calendar subject to change. Visit [museumofflight.org](http://museumofflight.org) for updates.



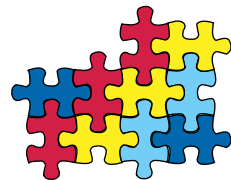
## Weekly Aerospace Update

**Every Saturday in March and April**  
*Charles Simonyi Space Gallery | 1 p.m.*

Get the latest news in astronomy, aviation and spaceflight from our own experts. Every Saturday at 1 p.m., a Museum Docent or NASA Solar System Ambassador leads a 15-minute chat about the week's events and discoveries. Q&A to follow.

# April

## FLIGHT PLANS



**Saturday, April 2 | 8 to 10 a.m.**  
*Museum-wide*

### Autism Awareness Day at The Museum of Flight

In recognition of Autism Awareness Month, the Museum offers a special day for Ben's Friends. Children with autism and their families are invited to join us for an early Museum opening to visit exhibits in a sensory-friendly environment, a special hands-on family activity, and 10% off purchases in the Museum Store. The J. Elroy McCaw Personal Courage Wing will have adjusted lighting and sound to provide the best possible experience. *Mention "Ben's Friends" at the Admission Desk to receive free admission.*

**Saturday, April 2 | 10 a.m. to 5 p.m.**  
*William M. Allen Theater and the East Parking Lot*

### Centennial of Coast Guard Aviation

The Museum joins the United States Coast Guard in celebrating the centennial of Coast Guard aviation. USCG aviators have been going "into the storm" for a hundred years. Learn more about the rich history of Coast Guard Aviation at this public lecture featuring author Tom Beard, recipient of the 2016 Adm. Arthur Radford Award for Excellence in Naval Aviation History and Literature. Don't miss the Coast Guard aircraft on display in the East Parking Lot!

**Thursday, April 7 | 5 to 9 p.m.**  
*Charles Simonyi Space Gallery*

### Wells Fargo Free First Thursday: NASA Climate Night

NASA & NOAA data have revealed that 2015 was hottest year in historical record. Our evening features "Monitoring Earth's Climate from Space" with posters and presentations from NOAA and NASA Sea Grant and Space Grant researchers about the latest in climate monitoring and modeling. Welcome Stand-Up Economist and climate change cartoon book author, Dr. Yoram Bauman, and teens from Seattle Youth CAN. A very cool evening about a hot topic!

Calendar subject to change. Visit [museumofflight.org](http://museumofflight.org) for updates.



**Saturday, April 9 | 10 a.m. to 3 p.m.**  
*Side Gallery*

### Lindbergh Electric Airplane Flight (LEAF) STEM Challenge

Check out the latest engineering design challenge for grades 6-12! Students are tasked with designing, building, and flying an electric-powered aircraft with the goal of carrying the most amount of cargo. Watch the student teams demonstrate how much cargo their airplanes can carry in this fun, fly-off challenge!



**Saturday and Sunday, April 9 and 10**  
**11 a.m. to 4 p.m.**  
*Museum-wide*

### Centennial Weekend: The Formidable Forties

View Seattle through the lens of World War II strategic airpower and Boeing production with featured aircraft such as the B-29, Stearman Kaydet, and 377 Stratocruiser. Seattle is the epicenter of Boeing factory workers, fashion on the ration, victory gardens, Ivar's and Big Band Swing! Enjoy living history characters of Women at Work & War with a WASP presentation and make time for an exclusive showing of "Casablanca." We proudly feature guest speakers from the new Holocaust Center for Humanity, the Distinguished Flying Cross Society, and the American Fighter Aces Association.



**Friday, April 15 | 1 p.m.**  
*Charles Simonyi Space Gallery*

### NASA's OSIRIS-REx Update #5

Set to launch in Sept. 2016, NASA's OSIRIS-REx spaceflight mission's destination is Bennu, a carbonaceous asteroid as old as our solar system. OSIRIS-REx could give us our closest look yet at the formation and history of the Sun and planets. Join us every month until launch for a video chat with OSIRIS-REx experts!



**Saturday, April 16 | 2 to 5 p.m.**  
*William M. Allen Theater, Charles Simonyi Space Gallery*

### Yuri's Night: 2016 Meets "The Martian"

Yuri's Night celebrates the making of "The Martian!" We welcome one of the film's producer Aditya Sood, who will discuss making Martian movie magic from Andy Weir's bestselling book, and share some of his favorite moments from the film. Yuri's Night is a global celebration of humanity's past, present, and future in space with events worldwide in commemoration of April 12, 1961, the day of cosmonaut Yuri Gagarin's first manned spaceflight. A special meet and greet reception will follow in the Charles Simonyi Space Gallery.

THE MUSEUM IS LAUNCHING SOMETHING BIG THIS YEAR...

*Inspiration begins here* ✨

THE MUSEUM OF FLIGHT  
C A M P A I G N



## INSPIRING OUR YOUNGEST VISITORS

The *Inspiration Begins Here!* Campaign will completely upgrade the Flight Zone exhibit for Museum visitors. With child-sized interactive cockpits, working engine models, hang gliding simulators, and a wind tunnel for high-speed aerodynamic experiments, the Flight Zone is designed to appeal to eager young flyers.

The Museum encourages experiential learning wherever possible, and the renovated Flight Zone will include visual, kinesthetic and auditory components to encourage learning, exploration, and curiosity among our youngest visitors. Using high quality, interactive, fun exhibits, the new Flight Zone is scheduled to open in May 2016 and will be an ideal environment for adults to play and learn alongside children.

## NEW APOLLO EXHIBIT

The Museum's existing exhibit, *Space: Exploring The New Frontier* will be completely reimaged to feature the restored remains of the F-1 rocket engines used to launch NASA's historic Apollo 12 and Apollo 16 missions to the Moon. The historic engines were recovered from the sea by Seattle-based Bezos Expeditions in 2013 and donated by NASA to the Museum's permanent collection in November 2015. "These artifacts not only launched humanity's first expeditions to the Moon, they fired the imagination of young people who are now today's leaders in the second great era of space exploration," said Doug King, President and CEO of The Museum of Flight. "We trust that the legacy of these engines will continue to inspire a new generation of explorers who will set foot on Mars and other new worlds." The new exhibit is scheduled to open in 2017 and will also showcase lunar rocks, space race memorabilia, and an homage to Apollo 12 Commander Pete Conrad.



# PROTECTING HISTORY



The new Aviation Pavilion – the largest single part of the Museum's *Inspiration Begins Here!* campaign – will be just a short walk across the T. Evans Wyckoff Memorial Bridge from the main Museum of Flight campus, situated next to the Charles Simonyi Space Gallery. Construction broke ground on the 3.2-acre structure in early April 2015, and opens to the public in late June of 2016.



The Aviation Pavilion will house 19 iconic commercial and military airplanes, including the Boeing 747 Jumbo Jet, a 787 Dreamliner, the first jet Air Force One, British Airways Concorde airliner, and the B-17, B-29 and B-47 bombers. "Building a permanent cover will help us protect these treasures of aviation history for generations to come," said Doug King, President and CEO of The Museum of Flight. "The cover will give Museum members and visitors rain-or-shine, four-season access to these amazing airplanes."







## A NEW RESOURCE FOR YOU

The Alaska Airlines Aerospace Education Center's design, construction and launch was made possible entirely through a generous campaign gift from Alaska Airlines. The versatile facility acts as a learning lab, education hub, and career center all rolled into one. It will serve as a resource for students, educators, parents, and volunteers as they explore their passions for flight within the Pacific Northwest – and beyond!



## IMPACTFUL PROGRAMMING AND OUTREACH

The Museum is committed to increasing opportunities for underserved youth—particularly young women and students of color—by connecting them with immersive STEM education programs. Through the creation of The Boeing Academy for STEM Learning, the Museum is dedicated to growing our on-site and outreach resources exponentially, and doubling our educational capacity. The *Inspiration Begins Here!* Campaign has established Connections, a program granting free Museum membership for youth (ages 5-18). Connections guides students through the Museum's exciting learning opportunities, granting early registration to Museum programs and access to fun events. The campaign is also providing additional assistance for outreach education that will bring interactive programs such as our portable planetarium directly to school campuses.

# HANDS-ON LEARNING

The Aviation Learning Center, and the John Fluke, Jr. Challenger Learning Center offer students unique opportunities to experience the worlds of aviation and spaceflight. Participants practice critical thinking, scientific inquiry, hands-on problem solving and teamwork. Students develop the life skills that will help them succeed in STEM (science, technology, engineering and math) careers. The *Inspiration Begins Here!* Campaign will expand and improve our learning centers.



The Museum of Flight recognizes that it's never too early to help young people dream. Even the littlest visitors feel the spark of inspiration as they gaze up at the hugeness of the Space Shuttle Trainer or find themselves mesmerized by the thought of racing through the clouds aboard the Blackbird. Will they be pilots? Engineers? Astronauts? *Inspiration truly does begin here!*

**Rowan Stein**  
Airplane Enthusiast



The Aerospace Camp Experience (ACE) is where many children first discover a love of learning. While the youngest campers explore the worlds of robots, planets, and Leonardo da Vinci's flying machines, older kids delve into nanotechnology and launch their own rockets. It's a whole summer of discovery and fun for students of all ages.

**Esta Margolis**  
ACE Camper



In middle school, young people are introduced to the John Fluke, Jr. Challenger and Aviation Learning Centers. Through hands-on activities, aspiring aviators pre-flight check a real aircraft, chart a course, and pilot a simulated flight, or are part of a space shuttle crew on a mission beyond Earth's bounds. Problem-solving skills are tested, teamwork rules the day, and dreams become reality.

**Clare Weigman**  
ALC Student



Distance Learning and Outreach programs allow even those who can't make the trip to Seattle an opportunity to learn. From small Alaska fishing villages to the Petronas Towers of Kuala Lumpur, youngsters of all ages, across the country, and around the world, are introduced to the wonder of robotics, the principles of flight, and the thrill of scientific discovery.

**Jose Lopez**  
Outreach Participant



Students prepare for college and careers at The Museum of Flight. With Amelia's Aero Club and the Michael P. Anderson Memorial Aerospace Program, students are mentored by experts in aerospace fields. With the Washington Aerospace Scholars, students plan a mission to Mars. And at Raisbeck Aviation High School, more than 400 students participate in an engineering-based curriculum each year.

**Xhelan Sylve**  
RAHS Student and  
Michael P. Anderson  
Scholar



Thanks to Museum of Flight educational programs, thousands of young men and women have gone on to STEM-driven companies that are determining the future even as you read this – including NASA, Boeing, Microsoft, Aerojet Rocketdyne, Planetary Resources, Blue Origin, Google, and more. Inspiration begins at The Museum of Flight, and its impact is felt throughout the solar system.

**Dr. Lauren Edgar**  
Research Geologist,  
Astrogeology Center,  
U.S. Geological Survey

# WHAT IS A COMPREHENSIVE CAMPAIGN?

*Inspiration Begins Here!* is a comprehensive campaign. Unlike a capital campaign, which raises money solely for an organization's facilities, The Museum of Flight Campaign encompasses everything from new structures, new exhibits, scholarships, educational programs, endowment, facility upgrades, and our annual operating costs. A comprehensive campaign means more improvements across the Museum, and a more engaging visitor experience for you!

## CAMPAIGN LEADERSHIP

**Bill Ayer, Chair**  
Jon Bowman  
Kevin Callaghan  
Bob Genise  
Michael Hallman  
Nancy Hogan  
Craig Howard  
Jim Johnson

Mike Koss  
Ned Laird  
Marilyn Metz  
John Purvis  
James Raisbeck  
Anne Simpson  
Steve Taylor



## SHARING THEIR KNOWLEDGE

Volunteers and docents are a vital part of The Museum of Flight, and often the first faces our visitors see when walking through the doors. They are very knowledgeable about everything happening at the Museum, including every thrilling upgrade and renovation that the *Inspiration Begins Here!* Campaign makes possible. Whether it's a new exhibit, family activity or where to find additional restrooms, our volunteers and docents can give you all the information you need and can make your experience even better!

## ARE YOU READY TO BE

*a Spark of Inspiration?*



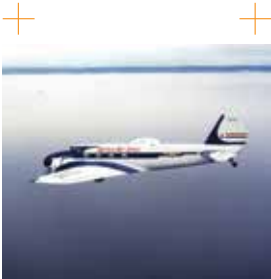
**CONTACT:**  
**Lindsay von Marbod** | Campaign Manager  
LvonMarbod@museumofflight.org • 206.764.5865  
inspirationbeginshere.org

# WEEKEND FAMILY WORKSHOPS

Programs made possible by **Bank of America**

Every Saturday and Sunday from 11 to 11:45 a.m. and 1 to 1:45 p.m., unless otherwise posted.

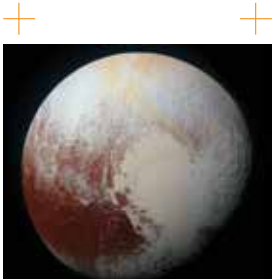
Explore the exciting world of flight in fun hands-on workshops offered every Saturday and Sunday! Family workshops are free with Museum admission and open to all ages (kids six and younger should come with an adult helper). Groups with ten or more children, please call ahead to find out whether we will be able to accommodate your group. Contact our Interpretive Programs Coordinator at 206.768.7187 with any questions.



### Flying in Style

March 5, 6, 12, and 13

Join us as we take a look at the first all-metal modern passenger airliner, the Boeing 247. Then make your own model to fly in style.



### Party with Pluto

March 19, 20, 26, and 27

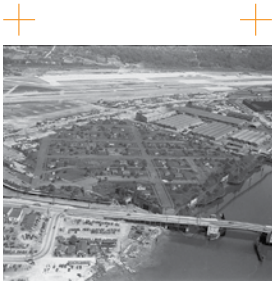
Come hear the story of how a tiny, icy body orbiting the sun became a planet, and then was demoted to a dwarf planet. We'll pay homage to poor Pluto with our activities these days.



### Fifinella on the Fly: WASP Recognition Day

April 2, 3, 9, and 10

During World War II, the Women's Air Service Pilots or WASP did the demanding work of ferrying military aircraft across the United States, as well as towing targets in the sky for anti-aircraft gunnery weapons practice. Learn more about these brave women, and then make an aviation themed button to honor their service to our country.



### Now You See It, Now You Don't: Camouflaging Boeing Field

April 16, 17, 23, 24, and 30

During World War II, Boeing Field and Plant 2 were camouflaged by a Hollywood scene designer. Learn about how he did it. Then make your own model of Boeing Plant 2 disappear!

*Learn how you can be a spark of inspiration!*  
inspirationbeginshere.org



\$20/participant

\$15/Members

Ages 10+

(15 and under must be accompanied by an adult)

### Test out your pilot skills in Flight Club!

Join us for weekends in March for a one-hour experience in the Aviation Learning Center and see if you have what it takes to become a pilot. Inspect a real Cirrus SR20 for safety, plot your course, and take off into the sky in our professional-grade simulators.

Register in the Alaska Airlines Aerospace Education Center. Questions? Send an email to [ssnyder@museumofflight.org](mailto:ssnyder@museumofflight.org).

[museumofflight.org](http://museumofflight.org)

## TAKE A TRIP TO MARS!

\$20/participant | \$15/Members

Ages 10+

Every weekend in March, experience a one hour simulated space mission to Mars in our Challenger Learning Center. Get a taste of real astronaut training as you experience the final phases of a nine-month journey to the Red Planet. You'll work as a team as you fly the final approach and ride the hair raising 7 minutes of terror to the surface.

Register in the Alaska Airlines Aviation Education Center. Questions? Send an email to [tgondola@museumofflight.org](mailto:tgondola@museumofflight.org).

Aloft March | April 2016 13

DIVISION

**BOEING**

THE MUSEUM OF FLIGHT

Boeing 727-22



The Museum's Boeing 727 prototype at its rollout in 1963. (The Boeing Company/The Museum of Flight)

# Vietnam Air War Memorial Park

By: Ted Huetter, PR Manager at The Museum of Flight



One of The Museum of Flight's largest and most iconic aircraft, a Boeing B-52 Stratofortress, has been lost in plain sight for the past 24 years. Like many other American veterans of the Vietnam War, the B-52 has suffered from neglect. This patriarch of all large jets has been parked on the grass in the middle of Paine Field for decades, a silent witness to the emergence of its newest Boeing descendants manufactured and flown at the same airport. Plans are underway for this veteran warbird to be restored to its glory and given a new home in a place of honor. The Vietnam Air War Memorial Park on The Museum of Flight's Boeing Field campus will be that place. The B-52 will be the centerpiece of a park remembering all of the aircraft flown in Vietnam War, and honoring the crews that supported them.

The Museum's B-52G was built in 1959. Nicknamed "Midnight Express," the plane was one of 193 G-models. The plane was always in-service with the Strategic Air Command until placed on long-term loan with the Museum.

The Stratofortress was designed as a nuclear-armed platform during the 1950s Cold War, and was used extensively in the Vietnam War. The Museum's B-52 is a Vietnam veteran. It flew in the first wave of operation LINEBACKER II, which resulted in the release of 590 U.S. POWs. Although this project, "Welcome Home," was proposed and is led by veterans, The Museum of Flight feels duty bound to develop the park and restore its B-52.

The restored aircraft will stand in a park setting west of the Aviation Pavilion, next to the Duwamish River. Not isolated, but reserved as a quiet place to reflect upon the 10,000 U.S. military aircraft and associated crew members lost during Vietnam. The park would include an exhibit about the dozens of types of planes and helicopters flown during the war. Holding the ground will be a statue of a returning aviator honoring veterans of the War. This will become the nation's only memorial dedicated to the Vietnam air war. The site will be free of charge, and open to all who wish to learn, honor, contemplate and remember.

Restoring the B-52 to Museum standards will be huge effort. The plane will also have to be partially disassembled, moved the Memorial Park, and reassembled. The memorial will need landscaping, exhibitory support and a statue. We will also need to be extra vigilant to maintain the aircraft, as it will be exposed to the elements.

For information on how get involved, please contact:

**Jim Farmer, Museum Trustee**  
P: 206.719.4170 | E: jtfarmer33@gmail.com.



## SOUTH SHORE Skynward

By: Paz Clearwater, Education Specialist for Digital Learning at The Museum of Flight

An aircraft design team huddles around a desk, eyes fixed intently upon a wind tunnel modeling app as they set up a test for a potential wing design. They are oblivious to the sound of power drills and electric motors filling the room around them. The team begins the test and the simulation spits out values for lift and drag. The group sighs in relief as the test is successful and an acceptable lift-to-drag ratio has been achieved. Each team member dons a dust mask and protective eyewear and prepares for construction.

While this scene appears to be an account of the design process at an aerospace company or university, it's actually a description of the work being done by middle school students at South Shore K-8 School in Rainier Beach through the Museum's Amelia's Aero Club program. Amelia's Aero Club is part of The Boeing Academy for STEM Learning, a continuum of inspirational, exploratory, and preparatory learning experiences at The Museum of Flight that lead to high-demand careers in the STEM workforce. Throughout the last semester, members of The Museum of Flight's education team have been co-teaching a class of young women at South Shore. The project-based class focuses on the Lindbergh Electric Airplane Flight (LEAF) Challenge, an initiative that challenges young people to design, build, and test tethered electric cargo airplanes.

Beginning with the basic principles of flight, the course progressed to more advanced topics students might miss in a traditional middle school setting. South Shore science teacher and facilitator of the project class, Laura Tyler, emphasized the need for this type of programming by saying, "Even though we are one of the closest schools to the Museum, we are actually light years away as far as my girls experiencing these programs, so having it brought to my school has been just such a fortunate event."

In addition to the knowledge gained, students have learned practical design and fabrication skills. This was the first time most of the young women had ever used power tools, and they relished the opportunity. Learning new skills has inspired several students to consider careers they may not have otherwise. D'asia Grain, an 8th grader at South Shore, said the class has inspired her to consider air-traffic control as a possible career after college. Designing, building, and flying the airplanes has also built confidence within the students. "If I can make planes, I can make anything," remarked student Ayantu Shube. A major takeaway for these young women has been that engineering is relevant to their community, and that it is an achievable career goal. Most importantly, South Shore students learned that engineering is fun!

Teams that complete their airplane and written report will be invited to participate in the LEAF Challenge on April 9, 2016. The team with the airplane model that withholds the most cargo takes home the grand prize! Regardless if they win in April, the young women of South Shore have already succeeded. Through teamwork, perseverance and problem-solving, these students know what it takes to tackle an engineering challenge, inspiring growth inside and outside of the classroom.

The LEAF Challenge is presented in conjunction with the Pacific Northwest chapter of the American Institute of Aeronautics and Astronautics, Powering Imagination, and Starfish Education.

To find out more visit [leafchallenge.com](http://leafchallenge.com).

For more information about The Boeing Academy of STEM Learning contact:  
Reba Gilman, Vice President of Education at The Museum of Flight  
206.764.0277 | [rgilman@museumofflight.org](mailto:rgilman@museumofflight.org)  
Emily Thatcher, Project Manager, The Boeing Academy of STEM Learning  
206.764.0276 | [ethatcher@museumofflight.org](mailto:ethatcher@museumofflight.org)

# BEYOND THE TERMINAL

By: Rachel Dreeben,  
Marketing and Promotions Coordinator  
at The Museum of Flight



Dubai International Airport, United Arab Emirates, Carolyn Russo/National Air and Space Museum, Smithsonian Institution

Back in 2006, while landing at LaGuardia airport, Smithsonian Museum Specialist and Photographer Carolyn J. Russo was particularly drawn to the view of the air traffic control tower. “It looked like a creamy swiss cheese,” she recalled. This compelling image served as both inspiration and an opportunity to explore a subject of aviation history and culture that is often overlooked—the airport tower. She decided to develop the idea into a book, “Art of Airport Tower”. The result is a feast for the eyes, an aesthetic journey across 23 countries, showcasing 85 distinct towers. Russo was kind enough to share with the Museum her connection to the project, artistic process, and some of the incredible highlights of her adventures photographing these amazing pieces of art. She discussed towers as cultural ambassadors, sky guards, historic relics, and artistic icons, carving a place for them in the museum sphere.

When Russo was a college art student, she was asked to pick a few objects and create a photography still life. She chose a map of the world, a silver airplane, and a pearl necklace. She exclaimed “It was so strange because because in a weird way it foretold my future.” After art school, Russo accepted a photography position at the Smithsonian National Air and Space Museum; she has been there ever since.

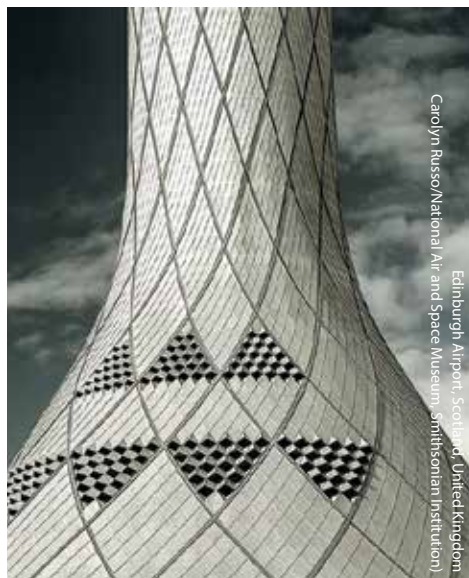
Russo’s interest in the subject of airport towers was fueled first and foremost by the idea of abstraction. She had begun tackling this theme in her book, “In Plane View: Abstractions of Flight.” Through exploratory photography Russo pulled out different forms, lines, and textures from the aircraft in the Smithsonian collection, giving them entirely new meaning. Russo investigated this even deeper with “Airport Towers,” letting her instinctual perception of the structures inform their character and ultimately dictate the features she chose to capture in the photo. It often was an anthropomorphic process—the Oslo tower appeared as a human spine, London Heathrow a gentleman in a top hat, Abu Dhabi a man in traditional dress floating across the dessert, and in true ‘Frenchie’ fashion the Charles de Gaulle tower was adorned in a beret. Several of the towers Russo observed took on animal characteristics, the TAG Farnborough tower represented a bird in flight, Dubai International resembled a spider, and Dallas Fort Worth’s conical structure paralleled the body of a stork or a crow. And these are merely a few examples. Russo’s examination of abstraction coupled with the picturesque skies, dramatic lighting, and atmosphere/environment around the towers, achieves a magnetic effect. Many of the towers look like they could fly off the page.

Russo was also impressed by the history of several of the older towers; referring to them as “time capsules from the glory days of flying.” She had the opportunity to photograph the Newark Administration building, which was actually dedicated by the iconic Amelia Earheart back in 1935. Interestingly enough, the inside of the building was once covered with ten Depression-era murals painted by Arshile Gorky; the murals mysteriously vanished during World War II. Then in the 1970s a researcher discovered two of the murals underneath 14 layers of paint: unfortunately the other eight have yet to be found. Russo expressed that it’s historical tidbits such as these that “illustrate the importance of preserving the towers as artifacts within the present airport landscape.”

Some situations in her role as a photographer and researcher gave her unexpected access to the socio-cultural fabric surrounding these towers. Russo fondly shared her experience photographing the Torshanda tower in Sweden, a 1960’s space capsule-shaped, non-operational tower atop a hill. With the help of her research volunteer she was able to connect with a former employee of the tower who could give her a ride to the site. The news of her visit traveled fast, and her photography session turned into a reunion party with many of the old air traffic controllers and the local media. Stories and photo albums were shared amongst the group, enlightening Russo to the tower’s vibrant history.

Russo also had the opportunity to photograph the demolition of the Wittman tower in Wisconsin. The four-panel time-lapse series illustrate the symbolic fall of the tower from a local landmark to a pile of rubble. The Tower’s fall also brought down the emotional walls for a subject that she inherently builds as an artist. Russo described picking up on the deeply human and bittersweet nature of this event, and its impact on the community. Her choice to include this in the book is especially powerful, given the unknown fate of towers in general. Remotely-operated towers already exist, and who knows what’s in store for the Air Traffic Control industry in the next two hundred years.

Russo’s beautiful book offers us a fresh perspective on a topic that we often take for granted. Her photography from this project is currently on display at the Smithsonian Air and Space Museum. For more information about both the book and the exhibit, please visit: [airandspace.si.edu/exhibitions/airport-towers/](http://airandspace.si.edu/exhibitions/airport-towers/).



Edinburgh Airport, Scotland, United Kingdom  
Carolyn Russo/National Air and Space Museum, Smithsonian Institution



LaGuardia Airport, New York, United States  
Carolyn Russo/National Air and Space Museum, Smithsonian Institution



Fort Worth Alliance Airport, Texas, United States  
Carolyn Russo/National Air and Space Museum, Smithsonian Institution



Birmingham Airport, United Kingdom  
Carolyn Russo/National Air and Space Museum, Smithsonian Institution



Edwards Air Force Base, California, United States  
Carolyn Russo/National Air and Space Museum, Smithsonian Institution



Oslo Airport, Norway  
Carolyn Russo/National Air and Space Museum, Smithsonian Institution

## AMELIA'S AERO CLUB IN ACTION

Amelia's Aero Club (AAC) competed in the First Lego League Competition last December. The event consisted of a robotics challenge, a research presentation, and a team building activity. The ten members of the team represented 10 different schools across the Puget Sound and have traveled to the Museum from as far north as La Conner and as far south as University Place every week since the end of August. The theme of the challenge was "Trash Trek," and the AAC "Rawffles" chose to focus on disposing medical bio-waste. Although the "Rawffles" did not qualify to move on to the First Lego League semi-finals they demonstrated amazing tenacity, perseverance, and comradery throughout the day. The Museum was especially proud to host one of only two all-female teams (out of 29). A special thanks to Melissa Edwards and her team of coaches and mentors for providing this unique learning opportunity for our Museum students!



(The Museum of Flight)



(The Museum of Flight)

## GET CONNECTED THROUGH AEROSPACE AND AVIATION

The Museum officially launched Connections, a free student membership program for youth ages 5-18. Connections is part of a larger educational initiative designed to inspire and prepare students for STEM (science, technology, engineering, and math) education and career paths. Connections members and one adult will each receive unlimited free admission to the Museum plus the opportunity to participate in exclusive events, classes, and behind the scenes tours. To join, please visit the Alaska Airlines Education Center or sign-up online at [museumofflight.org/education/connections](http://museumofflight.org/education/connections).



## FAREWELL TO THE AIRPARK! LAST DAY TO VISIT IS SUNDAY, MARCH 6

In preparation of the "great airplane exodus"—the moving of 17 planes to the new Aviation Pavilion—the airpark will close to the public beginning March 7. Be sure to check our website for exciting, late breaking programs and fly-ins this spring, as the Museum gets ready to house 19 aircraft under one roof! And you won't want to miss the Aviation Pavilion grand opening festivities on June 25!

## CALL FOR VOLUNTEERS

If you enjoy aviation and aerospace and want to work with an inviting group of people who share your interests, become a volunteer at The Museum of Flight! As a non-profit organization, The Museum of Flight relies on the hard work and dedication of volunteers. From office duties to docent tours, we rely on volunteer support to assist the Museum's plethora of programs. With the opening of the Aviation Pavilion in June 2016 along with the celebration of Boeing's Centennial, and the "Above and Beyond" exhibit, also premiering this summer, the Museum is looking for more volunteers, especially customer service ambassadors.

For further information about volunteering, please contact:

Carol Thomson, Volunteer Coordinator  
at [volunteers@museumofflight.org](mailto:volunteers@museumofflight.org).



## VOLUNTEER PROFILE

# UPSTAIRS DOWNSTAIRS

By: Nancy Wright,  
volunteer at The Museum of Flight



One day, Bruce Lawrenson kissed his wife goodbye and headed out to The Museum of Flight for his Tuesday volunteer shift. "You know," he said, "if you came with me, we could ride in the car pool lane." That subtle suggestion caused Neoma to think about how she might contribute her talents to The Museum of Flight, where her husband was already a highly regarded leader in the docent corps. "I'd rather not talk about airplanes," she said. "My career was in accounting."

But the suggestion gathered some momentum when she visited the Museum and posed the question. The accounting department had never considered using volunteer help. They took a chance on her, she says. Thus began a volunteer career that has earned her accolades of love and appreciation spanning 15 years and more than 3,000 hours, at latest count. "Neoma is a valuable member of our accounting team," says Matt Hayes, the Museum's Chief Financial Officer. She is part of our Museum family, not just a weekly volunteer. Accounting practices may have evolved, but her background has been a valuable asset in many instances. She's not just a 'file clerk,' no matter what she says. She's a great friend to all of us." The Lawrensons' shifts are on Tuesdays, and indeed, the 50-mile Eastside commute got easier and more pleasant in the carpool lane. There's lots to talk about—upstairs and downstairs at The Museum of Flight.

Bruce grew up in Greely, Colorado, and his plan had always been to do something with aviation. He graduated from the University of Colorado with an engineering degree in 1956. After an on-campus interview with Boeing, he received a job offer. Despite the fact that he had a two-year obligation to the Army, he was able to accept the position. Soon, in a Queen Anne bowling alley, he met a beautiful young stewardess. He and Neoma were married three months later. Due to the rules of the game, she had to tell United Airlines about her marriage and turn in her uniform. Her 6-month career was over. "I had no intentions of marrying as soon as I did. I had hoped to be a pilot, but didn't quite get there. So the next best thing was being a stewardess." This year they will celebrate their 60th wedding anniversary.

The newlyweds spent two years mostly at Ft. Leonard Wood, Missouri while Bruce did his ROTC stint in the Army. His new wife, a native of Spokane, who received her flight instruction at Stephens College, decided that her business college degree would be the path she would

follow. Moving back to Seattle for Bruce's career with Boeing, Neoma took an accounting job at Bellevue College where she worked for 21 years. They raised 3 children. Bruce's 37 years with Boeing exposed him to dramatic experiences, first with the Bomarc missile program, and later work in the Everett factory helping bring the first two dozen 747s to market. He spent the last five years recruiting at colleges in the Rocky Mountain states, handing out job applications. "It was a great job, lots of travel," he said, "giving college seniors a taste of what Boeing was all about. I was also able to suggest changes to the Engineering curriculum, many of which were incorporated."

As soon as he retired he signed on with The Museum of Flight, and immediately enrolled in docent training. These were the early, exciting days for the Museum: the Red Barn was finally at its new home, and the Great Gallery was just completed. The Museum's Board of Trustees has a docent representative on its Board, which was designed to keep an important communications link open. Bruce was tapped to fill in the vacancy and held the post for 12 years. The job was in addition to his regular shift on the floor, and included many board meetings, galas, and social engagements.

"Honestly," his wife says, "I told him several times he should bring a futon down there and just stay." Currently, evening activities don't make it on their calendar much, because they don't like to drive at night. Their calendar still includes working with their church, (Bruce sings with the choir, and Neoma assists with church financial matters) a weekly bible study group, and a volunteer philanthropy organization. "We're not so over-committed anymore," she says. This year's January calendar held a "big event." One of their six grandchildren (finally!) got married.

Bruce has chalked up 6,500 docent hours so far at the Museum over the past 23 years. His skills, shaped at Boeing, have been a blessing to the Museum where he is well known for recruiting new docents and skillfully engaging visitors. The Lawrensons think The Museum of Flight is an incredible place where visitors of all ages come to absorb, remember, and dream. Bruce can actually see its impact on the faces of the young ones while he's talking. "I love to watch some bored and listless child get a spark, a thrill of insight that lights up their eyes," says Bruce. "That's the payoff for me."

# Celebrating Lifetime Achievements



By: Robin Webster, Director of Development at The Museum of Flight

"Comradery, integrity, honesty and good old-fashion fun!" These are the words that Sandy Morton uses to describe the team of docents he works with every Monday. Last month, this same team of docents honored Sandy with a special tribute – a seat named in his honor in the Museum's William M. Allen Theater.

This tradition of honoring one of their own is nothing new to the Museum docent corps. Several years ago, Paul Harvey wanted to do something special for his friend and fellow docent Bill Kirkland, who had passed away, and the idea of naming a theater seat came up. The docents pooled their contributions together and purchased a seat in his memory. Since then, Paul has rallied the troops and raised funds to purchase five additional seats in tribute to fellow docents.

"It is a fitting gift to recognize one's dedication and it helps the Museum at the same time," Paul says. "In the end, that's really what it's all about."

For others, a tribute in someone's name is the perfect gift for that hard-to-shop-for person. Maureen Gibbons purchased theater seats in honor of her son, who is a Museum board trustee, and her husband. She turned the gift into a special family moment. "I made the presentation of a picture of the plaques to my 'boys' with champagne and great fanfare! They both were VERY surprised and moved," she

says. "They immediately made plans to have lunch at the Museum and find their chairs. It was lots of fun!"

Consider making a tribute to the special friend, loved one or colleague, while supporting The Museum of Flight.

Several opportunities are available:

- Naming a seat in the William M. Allen Theater
- The Military Honor Wall that recognizes the service of military veterans from all branches
- The Vietnam Bronze Map Project that honors individuals who served in Vietnam
- The Boeing Centennial Honor Wall that honors Boeing employees past and present (*names are due by April 30, 2016*)

For more information on how you can make a special tribute, please visit our website or contact Robin Webster, Director of Development at 206.768.7234.

Above: Paul Harvey (center) and the Monday docent corps present Sandy Morton (front) his theater seat. (Andrea Arenas)

## ALL BOEING EMPLOYEES AND RETIREES!

We invite you to celebrate the Boeing Centennial and support the long-term preservation of the Boeing legacy at the Museum by making a gift or pledge of \$5,000. In recognition of your commitment, we will list you (or the important person in your life) on the Boeing Centennial Honor Wall in the William E. Boeing Red Barn.

This permanent installation will commemorate the men and women like you who have contributed their talents to Boeing's lasting heritage.

The Boeing Centennial Honor Wall is available only for retired and current Boeing employees, and only for a short time.



## IN MEMORIAM

The Museum of Flight offers its sincere condolences to the families and friends of departed Museum volunteers, members, and supporters.

|                        |                     |                      |                    |                   |
|------------------------|---------------------|----------------------|--------------------|-------------------|
| Barbara M. Antonelli   | Donald D. Goehler   | Donnavon N. Hallgren | Maurice J. Munch   | David F. Thwaites |
| Nellie Applestone      | Robert L. Goff      | Burton Jay           | Peter G. Newing    | Cornelis Wagemans |
| Guy L. Birrenkott      | Clayton K. Gross    | Douglas E. Johnson   | James T. Pitts     | Douglas W. Walker |
| Patricia A. Burkhalter | Jack R. Grundy      | John L. Laden        | Richard F. Poppe   | David P. Whipkey  |
| Donald C. Douglas      | James A. Gunstone   | Helen M. Lee         | Marianne Reynolds  | Resin W. Wyman    |
| Mildred Dunn           | Donald Haberman     | Jeanne Q. Lyon       | James H. Snider    | James P. Zettas   |
| Emilio Gambacorta      | Bernard C. Hainline | Howard A. Mills      | Thomas F. Sullivan |                   |

## TRIBUTE GIFTS

### IN MEMORY

|   |   |   |
|---|---|---|
| In memory of James R. Anderson<br><i>Barbara Osborne</i>                          | In memory of Ronald D. Livingston<br><i>Arthur Germond</i>  | In memory of David L. Warrick<br><i>George and Karolyn Ghosn</i>                    |
| In memory of Phyllis M. Baer<br><i>The Phyllis Morrison Baer Family</i>           | In memory of Philip G. Mack, Jr.<br><i>Bruce R. McCaw</i>   | In memory of Stephen J. Welton<br><i>Debra Welton</i>                               |
| In memory of Guy L. Birrenkott<br><i>Jody Byrne</i>                               | In memory of Arthur Kuulei McColgan<br><i>Lehua McColgan</i>  | In memory of Glenn W. Woods<br><i>Virgy Woods</i>                                   |
| In memory of John S. Bomengen<br><i>Jan Bomengen</i>                              | In memory of John A. Meyer<br><i>Norman and Carol Sollie</i>  | <b>IN HONOR</b>   |
| In memory of Harl V. Brackin, Jr.<br><i>Herbert L. Bone, Jr.</i>                  | In memory of Donald W. Oja<br><i>Laura Oja</i>  | In honor of Bridget and Dick Cooley<br><i>Ray and Edith Aspiri</i>                  |
| In memory of Frederick E. "Ted" Bullock<br><i>Charles Fowler</i>                  | In memory of James T. Pitts<br><i>Mark Pitts</i><br><i>Raymond Solie</i>  | In honor of Wayne C. Erickson<br><i>Dianne and Patrick Schultheis</i>               |
| In memory of John F. Curulla<br><i>Virginia and Joseph Curulla</i>                | In memory of Earl Rodger<br><i>Bob and Joni Rodger</i>  | In honor of J. Arnold Gaillard<br><i>Melissa and Thomas Peterson</i>                |
| In memory of Gregory L. Draper<br><i>Paul and Donna Turner</i>                    | In memory of William "Bill" T. Ross<br><i>Alan Frazier</i>  | In honor of Babs Harrison<br><i>Barbara and Wray Featherstone</i>                   |
| In memory of Ed Drumheller<br><i>Barbara Drumheller</i>                           | In memory of George S. Schuchart, Sr.<br><i>Bruce R. McCaw</i><br><i>Fred and Julie Northup</i><br><i>Peggy Wilton</i>  | In honor of David E. Jones<br><i>Ryan Jones</i>                                     |
| In memory of Robert W. Ellis<br><i>Marjorie Bach Mota</i>                         | In memory of William F. Gilbert<br><i>Joan Gilbert</i>  | In honor of Jackson W. Kiendl<br><i>William R. Kiendl</i>                           |
| In memory of William F. Gilbert<br><i>Joan Gilbert</i>                            | In memory of Yoshio J. Shiota<br><i>Anonymous</i>   | In honor of Donald A. Rothfuss<br><i>Suzanne Langham</i>                            |
| In memory of John and Esther Goranson<br><i>Ulf and Inger Goranson</i>            | In memory of Bruce P. Sutherland<br><i>Lori O'Brien</i>   | In honor of Bill M. Staab<br><i>Ross and Julie Case</i>                             |
| In memory of Clayton "Kelly" Gross<br><i>Paula Clark</i><br><i>Gloria Clinton</i> | In memory of Paul A. Taipale<br><i>Peter and Ann Bowen</i><br><i>James and Janet Roberts</i>  | In honor of Kristine and Steve Taylor<br><i>James Stephens</i>                      |
| In memory of Bernard C. Hainline<br><i>Elizabeth Thompson</i>                     | In memory of Richard W. Taylor<br><i>Raymond and Caroline Craig</i><br><i>Frank and Margaret Fickeisen</i><br><i>H. Clark Hoffman</i><br><i>Dave and Linda Jones</i><br><i>Bruce R. McCaw</i><br><i>Robert S. Muckelstone and Megan Kruse</i><br><i>Robert and Kathryn Whitford</i> | In honor of T-Square past and present volunteers<br><i>Marlene Taylor Houtchens</i> |
| In memory of William A. Hellsell<br><i>Ed and Cheryl Waale</i>                    | In memory of Clyde L. Lackey<br><i>Leslie Lackey and Stephen Whyte</i>  |   |
| In memory of Helen Marie Lee<br><i>Joseph Kiley</i>                               | In memory of John M. Tipping<br><i>Jack and Sharon Tipping</i>  |   |





## Registration is Open NOW!

We are currently registering for day camp programs in:

Aviation, Astronomy, Engineering,  
Rocketry, Robotics...and many other  
thrilling scientific subjects!



**NEW for 2016!**

***ACE Camp will explore  
the relationship  
between art and STEM!***

*For our second and third graders we've  
partnered with the Seattle Children's Theatre  
to explore the world of flying animals.*

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**June 20 to Sept. 2, 2016.**

**Full Day Camps for grades K-9**

Monday to Friday | 9 a.m. to 4 p.m.

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For information on specific sessions, visit [museumofflight.org/ace](http://museumofflight.org/ace)  
or call the ACE office at 206.764.5867.

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