

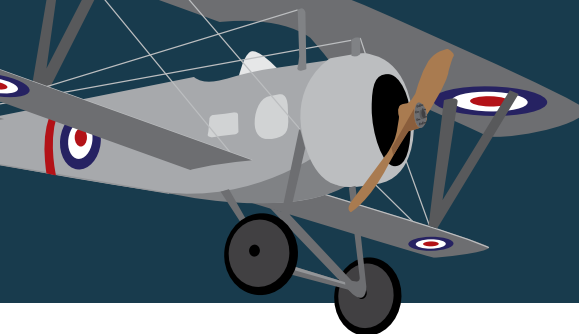
aloft

THE MUSEUM OF FLIGHT MAGAZINE

EARNING HER WINGS

Page 6

VOL. 39, ISSUE 2
MARCH/APRIL 2017



MEMBER EVENTS

For all events except those noted, please R.S.V.P. to membership@museumofflight.org.

STEM starters

STEM Starters is a monthly program series geared specifically for our youngest Members! Children ages 3 to 5 and their co-pilots (adult helpers required) are invited to explore the wonders of aerospace during this fun, educational program. Space is limited to 12 families (one child/one adult per family) at each program. RSVP required due to limited space.

To attend, R.S.V.P to membership@museumofflight.org.

FORCES AND MOTION - Four Sessions!

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.

NORTHWEST AEROCLUB ROOM

(Red Barn, 1st Floor)

Monday, March 13 | 10:30 to 11:30 a.m.

NORTHWEST AEROCLUB ROOM

(Red Barn, 1st Floor)

Monday, March 27 | 3 to 4 p.m.

NORTHWEST AEROCLUB ROOM

(Red Barn, 1st Floor)

Monday, April 10 | 10:30 to 11:30 a.m.

NORTHWEST AEROCLUB ROOM

(Red Barn, 1st Floor)

Monday, April 24 | 3 to 4 p.m.

YOU'RE INVITED

to The Museum of Flight's Annual Meeting!

Tuesday, April 18 | 4 to 5 p.m.

Watch your email inbox for further information.

MEMBER-EXCLUSIVE!

MEMBER MOVIE NIGHT: WALL-E

The year is 2700 and WALL-E is a curious and lonely robot spending every day collecting waste on the abandoned planet Earth. Soon he is visited by a sleek robot named EVE whom he chases across the galaxy with a pet cockroach and a heroic team of malfunctioning misfit machines. This Disney Pixar film won the Oscar for Best Animated Feature Film of the Year in 2008 and is rated G.

WILLIAM M. ALLEN THEATER

Friday, April 21 | 6 p.m. (Doors at 5:30 p.m.)



Want to see artifacts in the Museum collection not normally on view?

Join us for our Coffee with the Curator program. You're welcome to bring your lunch—coffee and dessert is on us!

THE GOLDEN AGE OF AIR RACING

Drawing inspiration from the Museum's collection of air racing artifacts, Curator Emeritus Dennis Parks will highlight some of the stories and resources surrounding the exciting era of air racing in the 1920s and 1930s.

NORTHWEST AEROCLUB ROOM

(Red Barn, 1st Floor)

Friday, March 17 | Noon to 1 p.m.

CELEBRATING APOLLO

To celebrate the upcoming opening of the new Apollo exhibit, Exhibit Developer and Adjunct Curator Geoff Nunn will present some of the weirdest and wackiest knickknacks in the collection that commemorate the historic 1969 moon landing.

NORTHWEST AEROCLUB ROOM

(Red Barn, 1st Floor)

Friday, April 21 | Noon to 1 p.m.

MEMBER-EXCLUSIVE!

TIP TO TAIL TOUR: Pratt-Read Glider

Join Project Manager and Museum docent Pete Graven on a tip-to-tail tour of the newly restored Pratt-Read Glider. Used in a high-altitude research program, the historic glider has recently been renovated at our Restoration Center and Reserve Collection in Everett, Wash. and will be on display in our very own Side Gallery in Seattle! To attend, RSVP to membership@museumofflight.org.

SIDE GALLERY

Saturday, March 11 | 10:30 to 11:15 a.m.



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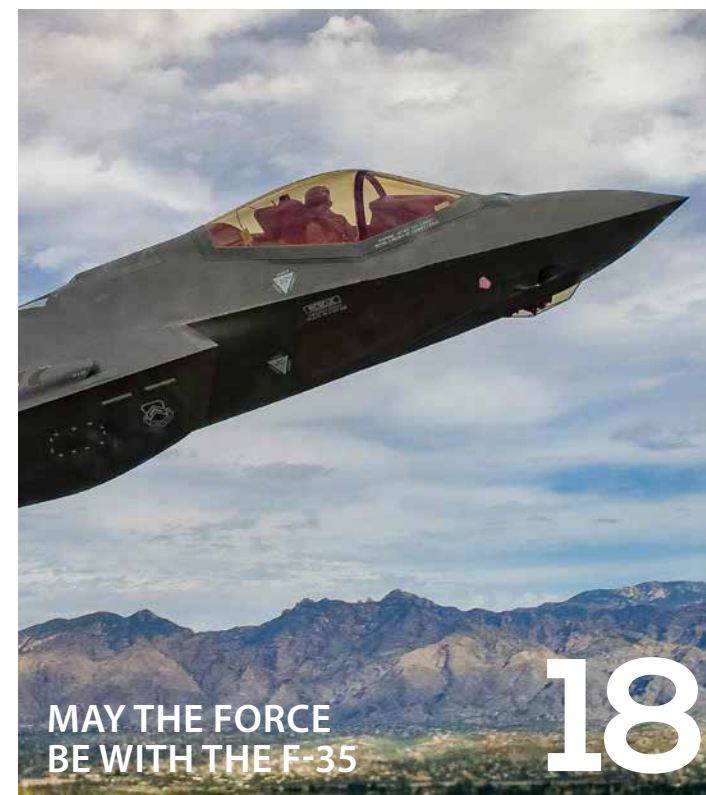
THE MUSEUM OF FLIGHT MAGAZINE

MARCH/APRIL 2017

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MAY THE FORCE BE WITH THE F-35

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WHAT GOES AROUND COMES AROUND



6

CURATOR'S CORNER

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Editor-in-Chief: Rachel Dreeben

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Web Producer: Layne Benofsky

On the cover: Peggy Eckert in 1966. (The Peggy Eckert Verger Collection/The Museum of Flight)

Questions or Comments? Email us at aloft@museumofflight.org

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Letter from the President



I AM PLEASED TO SHARE that we have completed the *Inspiration Begins Here!* Campaign—the largest fundraising milestone in the Museum’s history. Thanks to your generosity and commitment, we have surpassed our goal of \$77 million. The campaign has enabled the Museum to physically double in size and expand and establish long-range educational offerings to serve the community for generations to come. With your support, we have taken bold steps forward to preserve our history, enhance our visitor experience and inspire our children. This was the most comprehensive effort to ensure our sustainability, and I am eager to continue the momentum! Please read all about *Inspiration Begins Here!* on pg. 10.

Inspiration began again in January with an exclusive premiere screening of *Hidden Figures*—an empowering film featuring the gifted, African-American women, who as human “computers” propelled the American Space program. Thanks to our partnership with Twentieth Century Fox Studios, we were able to host this fabulous free event for a diverse audience of young women and families. Museum middle-school student and aviation enthusiast, London Holmes, delivered a remarkable introduction to a packed house, and after the film, the audience was invited to explore a variety of fun educational activities as part of a STEM Sampler. For a full report, please check out the Education Update on pg. 17.

Another point of pride is the release of the Museum’s stunning new book, *For Future Generations*. A special thank you to Museum Trustee Bruce McCaw for envisioning this tour de force! If you haven’t explored it already, you will enjoy a journey into our very own history. Mining a wealth of previously unpublished photos and insider stories, former Museum of Flight Executive Director and author, Howard Lovering cultivates a new, comprehensive history of the Museum. The book is as big and vibrant as the people who have always made the Museum a unique place “For Future Generations.” Copies are available in the Museum store on-site and online, and be sure not to miss a behind-the-scenes glimpse into the making of this incredible book on pg. 20.

Stay tuned for an exciting spring, as we prepare to launch our new Apollo exhibit, 4th Annual SpaceFest, and so much more!

Sincerely,

Douglas R. King,
President and CEO

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Museum Flashbacks

TOP LEFT: Nothing like a surprise visit from an F/A-18 Super Hornet on winter’s day. (Ted Huetter) • The cast of “Home for Christmas: The USO Story” pose with Don Leingang, Executive Director of USO Northwest. (The Museum of Flight) • CW11’s Pulse host Helen Martin tests out the cockpit of the F/A-18. (Ted Huetter) • Santa works the crowd. (Ted Huetter) • Baby asks Mrs. Claus for an airplane. (Ted Huetter) • We bid farewell to the Boeing P-26 “Peashooter.” (Ted Huetter)



ENGENIOUS

QUESTIONS ANSWERED BY: JOHN LITTLE, ASSISTANT CURATOR AND RESEARCH TEAM LEADER



THE MUSEUM OF FLIGHT

Q: WHY DON'T ANY OF THE AIRPLANES IN THE NEW AVIATION PAVILION HAVE ENGINES?

A: *Au contraire!* Almost all of the airplanes in the Aviation Pavilion (and our other galleries, too!) have engines. In the Aviation Pavilion, only four of the nineteen aircraft on display lack engines: the Douglas A-4F Skyhawk, the Grumman F9F-8 Cougar, the Hawker Siddeley/McDonnell Douglas AV-8C Harrier, and the McDonnell Douglas F/A-18A Hornet. All four aircraft are on loan to the Museum from the National Naval Aviation Museum, which removed the engines before lending the airplanes to us. The

other fifteen airplanes in the Aviation Pavilion have engines, though some of the engines are concealed by FOD covers. FOD is an acronym for Foreign Object Damage, and refers to anything that can get sucked into an engine; FOD covers are used to keep debris out of engines when they are not running—including birds! It turns out that birds love to build their nests in aircraft engines and in their air intakes. The engines (and nacelles) are located off the ground and contain wonderful hiding places, where birds (and their offspring) are safe from virtually all predators. Of course, once we add walls to the Pavilion birds will

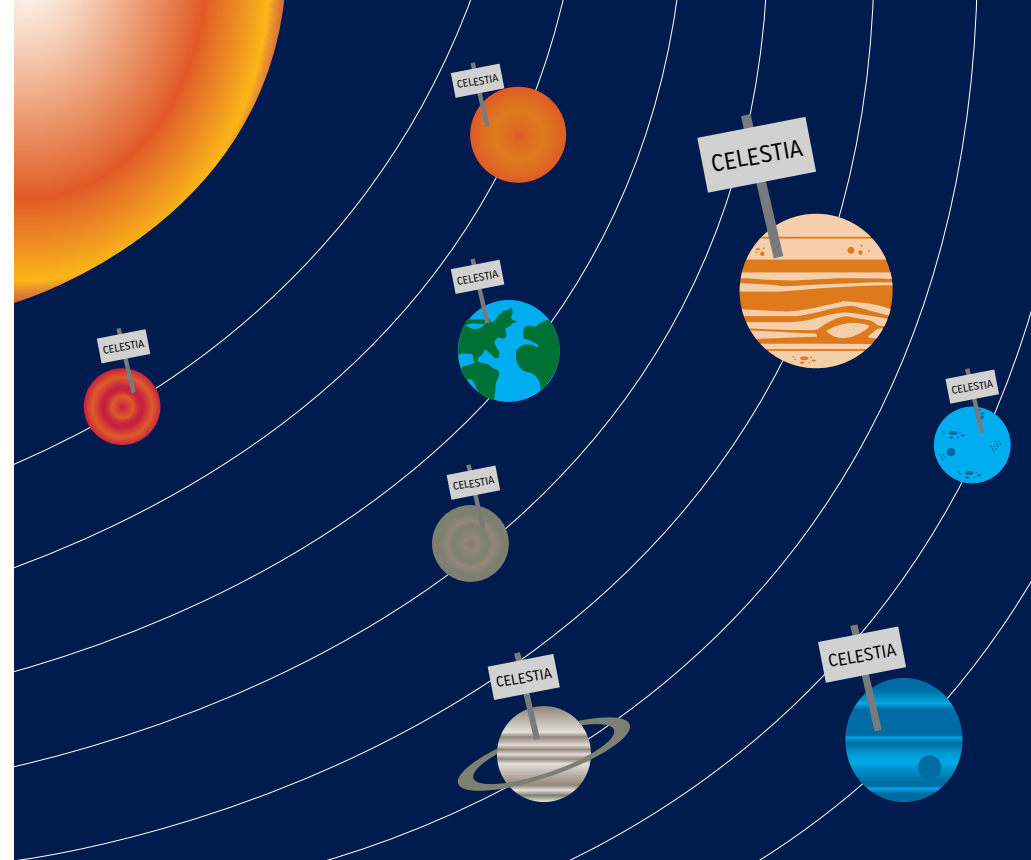
no longer be a problem, we'll be able to remove the FOD covers and all of the engines will become visible!

Q: DURING WORLD WAR II, WAS THERE ANY SINGLE, DOMINANT REASON WHY ALL HIGH-POWERED GERMAN V-12 ENGINES WERE INVERTED V-12S, AS SEEN IN THE MUSEUM'S MESSERSCHMITT BF 109 E-4?

A: This one had us scratching our heads, and we could find no single reason why the Germans preferred inverted V-12s (such as the Daimler-Benz DB 600/601/603/605 series) to "upright" V-12s. Among the experts on our informal Research Team is Dr. Dieter M. Zube, a Museum of Flight docent with a Ph.D. in Aerospace Engineering from Stuttgart University, Germany. Dr. Zube listed the following reasons for using inverted-vee engines, as opposed to upright-vee engines, and ranked the reasons, from most to least important, as follows:

- Enabled the use of a larger propeller without having to lengthen the landing gear (*because the engine's centerline sits higher*)
- Provided easier field maintenance (*because the valve covers and cylinder "heads" are located lower, allowing access without ladders or scaffolding*)
- Facilitated the installation of cowl-mounted machine guns
- Provided a better cowl line (*to improve the pilot's view over the aircraft's nose*)
- Facilitated better lubrication of the valve train
- Provided a lower center of gravity
- Provided a better thrust line
- Facilitated the installation of the 20-mm cannon that fired through the spinners of some Bf 109s and Fw 190s
- Lowered the exhaust stacks, which helped to preserve pilots' night vision

If any readers know of other reasons, please drop me a line, at jlittle@museumofflight.org.



MUSEUM MUSINGS

WHO OWNS OUTER SPACE?

BY: SEAN MOBLEY, DOCENT SERVICES SPECIALIST

THE IDEA OF EXTRATERRESTRIAL real estate has existed since at least the late 1800s, when hucksters roved the country selling pieces of the Moon to unsuspecting victims. Ownership of 'Space' became a matter of national pride as the US and the Soviet Union were locked in the Space Race.

Enter James T. Mangan, a public relations professional from Illinois. In 1949, Mangan claimed all space as his country—the Nation of Celestial Space— in response to the increasingly tense and polarized political climate of the Cold War. Diplomatic missives from Mangan whisked their way through the mail to 74 real governments, informing them of the new entity. He even successfully filed legal paperwork to formalize his claim.

A self-proclaimed "obnoxious opportunist," Mangan knew how to generate buzz. He issued coins, stamps, even passports for Celestia, and sent them to strategically selected public figures. He traveled to New York City and, to

the delight of news cameras and TV audiences, raised the Celestian flag before the United Nations building alongside those of the U.N.'s member states. John Glenn even sent him a letter of thanks for issuing the NASA astronauts licenses for liftoff.

Mangan's intergalactic push served as both a source of comic relief and a reminder that "we are all in it together." Space belongs to no country, no specific human, and acts instead as a common goal and inspiration. Mangan commented, "My nation might even give people enough bigness of thinking...to make them feel international squabbles are petty." Though he never received the recognition he wanted from the U.N., their Outer Space Treaty of 1967, which stated astral exploration "shall be carried out for the benefit and in the interest of all countries...and shall be the province of all mankind," codified the spirit of the Nation of Celestial Space.

Not to drone on...

BY: SETH MARGOLIS, DIRECTOR OF EDUCATION

WHEN I FIRST STARTED in the Museum business, I worked at an agricultural museum. It was great. We grew crops and tended to them with vintage farm machinery. But, since I did not have a 'steam ticket' nor any harvesting experience, I was relegated to more 'indoor' activities and presentations (some things would never change). My niche became sisal twine rope making. I was a pro at using a hand cranked, multi-pronged rope making machine and the visitors were amazed at my skills—I could turn out freshly braided twine cord like it was going out of style (keeping in mind that this type of activity was quite antiquated).

Now fast forward 20+ years and I found myself on the other end of the amazement relationship. There I was at the International Drone Expo (IDE) staring slack jawed at a multi-rotored drone designed specifically for agricultural work. It is hard to believe that I would be able to interact with such a spectrum of farming tools over my career. Isn't museum work great?

The IDE is billed as one of the world's largest conferences exploring the world of unmanned aerial systems, and it certainly lives up to its reputation. Imagine a room the size of our Aviation Pavilion full of all things drone. The front section was an array of businesses showcasing their products—from crop dusting UAVs to on demand 'gig economy' drone services to training, insurance and venture capital firms. I was like a kid in a candy store! This is an industry with big goals and the plans and drive to accomplish them. There was a sense of excitement and collaboration amongst the exhibitors and visitors.

The back half of the hall was truly sensory overload. Two giant drone cages were set up and literally buzzed with activity. One was a race course full of obstacles where pilots could test their flying skills against friend and competitor alike. Next door was the 'pit', where acres of tables were set for last minute repairs. The other cage was more of a free fly zone where finesse and function, rather than speed, were highlighted. Everywhere you looked, there was a machine in flight. Additionally, speakers were discussing the different jobs that their drones perform—from filming TV shows to checking hazardous chemical pipelines. It was inspiring and exhausting, but I brought back many new program and event ideas. Watch the 2017 calendar for more details.

What's New In The Collection?

BY: CHRISTINE RUNTE, REGISTRAR

KELLY FOX DONATED his mother Margery Watson's collection of P-51 drafting artifacts. The collection spans acquired from 1943 to 1945 when she worked as a draftsman for North American Aviation plant in Inglewood, CA. Despite being only sixteen, Watson was invaluable to the design team led by Edgar Schmued. Her specialty was capturing the Mustang's iconic air scoop.



Earning Her Wings

BY: RACHEL DREEBEN, MARKETING AND COMMUNICATIONS ASSOCIATE MANAGER

// PHOTOS: THE PEGGY ECKERT VERGER COLLECTION/THE MUSEUM OF FLIGHT



PEGGY VERGER WILL NEVER FORGET her debut as a United Airlines Stewardess. “I certainly wasn’t expecting to prepare for an emergency on my first trip, but the pilot couldn’t get the gear down on the DC-6.” While the co-pilot hand-cranked the gear, Verger and the other stewardess handled the safety procedures in the cabin. Crisis was averted, and finally the plane made a successful landing. Verger remembers thinking “I guess this happens all the time.” Despite being the crew rookie, her emergency training from only a few weeks prior kicked into high gear. Undoubtedly, Verger’s responsive yet relaxed attitude was well-suited for the air— she landed a 37-year career with United Airlines.

Options were rather limited for a poor, small town girl in 1960s rural New York; most of Verger’s friends married straight out of high school. In no rush to marry and unenthused about a secretarial, teaching or nursing career, she yearned for a more adventurous path. Verger credits her audacious and independent spirit to her grandmother who once confessed that if given a choice she would have been a merchant seaman.

A stewardess job was in many ways her ticket to freedom. Ironically, at the time, stewardesses were prohibited from marriage and couldn’t fly once they turned 33. Despite the fierce competition, a 23-year old Verger waltzed into her United interview in Rochester and wowed them with her aisle walk (yep, it was 1966), gregarious nature, poise and her pitch-perfect announcer voice. She was the only one selected to attend the six-week training program in Chicago out of a group of 39 young women.

Verger’s friends from training convinced her to move west, and San Francisco became her home base for the following five years. She reflects fondly on this time; she adored her colleagues and loved the fun team

atmosphere, the pilots “were like big brothers, and took us under their wings.” Flying was sophisticated, passengers were well dressed, kind and polite. Verger quickly developed a reputation for being loyal and reliable. On one of her days on reserve, she received a desperate call from Mario at the crew desk... “we had a situation with one of our crew members before take-off, kidney stones...look outside, do you see that taxi? It’s for you, how soon can you suit up?” And off she went, the taxi took her straight to the tarmac.

Verger was hooked. She especially enjoyed working as the First Flight Attendant. “Leading the pre-flight briefing meant that you set the tone for the whole flight. Teamwork and friendly atmosphere were key to smooth travel. And of course we had FUN”

As Verger gained more seniority, she was able to bid on better schedules and began traveling to to Hawaii and Alaska. In 1981 she was selected as Flight Attendant of the Year, and by the mid 80s she was making her way overseas, first to Tokyo and eventually to Hong Kong, London, Paris and Berlin.

The flight environment and the role of the stewardess was impacted by union changes, airline deregulation, a morphing business climate (acquisitions and mergers), evolution of aircraft (the shift from props to jets), terrorism and technological advancements to the ticketing process.

Verger recalls, “the 747 was an entirely new beast.” With 350 passengers, and an upper deck with galleys down below, the aircraft required a separate training program.

When United purchased Pam Am’s routes, Verger picked up several tips from the acquired Pan Am stewardesses, “they were experts at flying international, routes” she expressed. Bomb scares also

greatly influenced safety procedures; she experienced everything from emergency landings to FBI visits as a result of the threats.

Of course the uniforms changed—fashionable frocks were exchanged for more utilitarian suits. And when the airlines started hiring men in the early 70s, the title of flight attendant was adopted.

On September 11th, Verger was in Denver preparing for her annual, mandatory emergency training exam. After learning of the overwhelming tragedy, and the fate of United Flight 93, the instructor suggested that they reschedule the test. Acknowledging their roles as safety professionals, Verger and her colleagues voted unanimously to proceed with the lesson and exam. She remembers adamantly thinking “this is why we are here.” Dedicated to her job, Verger was only late once in her entire career. “I misread the check-in time, raced through terminal and arrived only a few minutes before takeoff.” Verger climbed aboard panting with a runners high and announced to the passengers, “My name is Peggy. I sincerely apologize for being late, you’re welcome to write a letter to the airlines, but we are going to have a blast today. Let’s start with free headsets and alcohol!”

In June 2003, on the exact anniversary of when she was hired, Verger retired. She continues to stay connected with her network of colleagues, “we take care of one another, just like old times.” Not to mention reliving her days in the friendly skies at United and Pan Am social events, which includes the celebrated, annual luncheon at the Museum.

With her wealth of stories, Verger provides an invaluable cultural lens into the world of air travel. But it’s not just oral history; she has donated an entire collection of uniforms, log books, menus and other flight memorabilia to the Museum. Many of her United outfits appeared in the Style in the Aisle exhibit back in 2008. Talk about earning her wings!



TRUE STORY

HIGH-FLYING COUPLE

BY: STEVE DENNIS, MUSEUM VOLUNTEER

TOM AND ANITA DELEO both were United Airlines flight attendants for 30 and 40 years respectively. They married in 1969 shortly after United relaxed its marriage ban.

A recent tour of the Museum’s Boeing 727 brought back memories of their early years of jet travel. Tom remembers taking advantage of the 727’s aft airstair when he flew as a “commuter.” “Sitting in the rear I could slip out while the passengers were queued to depart through the front door!” he said with a smile.

The jump seat in the cockpit evoked memories for Anita. “The flight crew could not smoke in the cabin so, on break, they would slip into the unlocked cockpit, get off their feet in the jump seat and grab a quick smoke.”


Based in LA, in their early years, they frequently served Hollywood celebrities on flights to Hawaii and New York. Over time, however, security delays, a desire for

privacy and the availability of comfortable private jets lured the “rich and famous” away from the commercial lines. Both noted that customer interactions declined from their “727” flight days. “Our meal service was the only entertainment available,” observed Tom. “Passengers would be watching as we progressed down the aisle. Now a real hot meal service in coach is a thing of the past.”


“And it’s hard to converse with someone wearing earphones and watching a flat screen device while immersed in their own little digital world,” added Anita. The flying experience changed over the years but both Tom and Anita have pleasant memories of their time flying the friendly skies of United. According to Tom, “There were times I couldn’t believe they were paying me to have so much fun!”

STYLE IN THE AISLE


THANK YOU FOR THE MANY suggestions to Aloft’s first travel survey! They were very thoughtful, with a common thread of dressing comfortably, casual “but not sloppy,” and definitely “not sweats/pjs.” Bring reading material, noise-cancelling headphones and a tablet. And don’t be selfish, bring treats or gift cards for the cabin crew to show your appreciation.


41%  **BUSINESS CASUAL**

59%  **CASUAL ATTIRE**


77%  **ENTERTAINMENT**

31%  **SLEEP ACCESSORIES**

23%  **SEAT ASSIGNMENT**

46%  **NOISE CANCELLING**

31%  **OUTSIDE FOOD/DRINK**

8%  **IN-FLIGHT FOOD/DRINK SERVICE**

WE FLEW PAST OUR GOAL!

BY: LOUISA GAYLORD, DEVELOPMENT COMMUNICATIONS COORD.
// PHOTOS: THE MUSEUM OF FLIGHT

THE MUSEUM HAS A MISSION to its visitors, students and volunteers to be the best museum it can possibly be. Since 2013, the *Inspiration Begins Here!* Campaign has been raising funds to improve all aspects of your Museum experience, including remodeled exhibits, more events and dynamic programs to inspire learners of all ages.

We are thrilled to announce that the Museum exceeded its \$77 million fundraising goal in the last few days of 2016. We are humbled by the generosity and passion of so many in our community and around the world—**thank you!** With your support, we are encouraging the next generation of astronauts, pilots and engineers to dream bigger than ever before. If you've visited the Museum recently, you've already experienced the impact of the community's generosity. The majestic new Aviation Pavilion, the renovated Flight Zone exhibit, the Boeing Academy for STEM Learning, the 727 prototype's Final Flight, the Connections program and so much more—you made this possible. Come see what a single spark of inspiration can do!

Visit InspirationBeginsHere.org to learn more about how far the campaign has come, and what exciting things the future holds.



THANK YOU TO OUR GENEROUS TOP LEVEL DONORS!

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Pratt & Whitney
Kevin and Linda Schemm
Robert L. Smith, M.D.
US Bank Foundation
Gregory Walker

As of January 15, 2017.
*Deceased





BRITISH AIRWAYS

54

8913R-31L



POWER OF GIVING

FEDEX: CURATING COMPELLING CONNECTIONS THROUGH AIR CARGO

BY: LOUISA GAYLORD, DEVELOPMENT COMMUNICATIONS COORD.
// PHOTOS: THE MUSEUM OF FLIGHT

YOU'RE GUARANTEED to walk away from the Aviation Pavilion—the 140,000-square-foot gallery that opened to the public in June of 2016—with a new perspective. Visitors are often instantly impressed by the sheer size of the building which covers 19 iconic aircraft, including the first Boeing 727 and the third 787 Dreamliner. The Aviation Pavilion is also the home of the new Air Cargo Story exhibit—a highly interactive, behind-the-scenes exploration into the world of air deliveries—which was made possible through generous support from FedEx.

On an average day, approximately 2,700 air cargo flights travel across the United States. Air freight has revolutionized express shipping, has transformed the world's economic landscape, and accounts for more than half of FedEx's operations. Since the first shipment of silk from Dayton to Columbus, Ohio in 1910, the story of air cargo's full impact has not been told—until now. The Museum of Flight is delighted to host these powerful stories in a special FedEx display in the north section of the Aviation

Pavilion. “The exhibit complements historic commercial aircraft in the Museum and presents a major facet of the aviation industry that most airline passengers never get to see,” says Phil Blum, FedEx Express Vice President of Fleet Development and Strategic Projects.

In 1931, less than 1% of airline revenue was generated by carrying air cargo because freighter aircraft were difficult to make reliable and cost effective. But in 1941, the four largest US domestic passenger airlines—United, American, TWA and Eastern—recognized the potential for carrying freight and mail in addition to passengers, and formed Air Cargo, Inc. for shipment pick-up and delivery. The introduction of jet aircraft in the 1960s brought down operating costs and increased payload, making air cargo a more profitable option for the first time. Fred Smith (pictured lower right, center with hat) started Federal Express to address America's growing need for overnight small package and document delivery. He believed that an air express company could operate differently than a passenger airline by utilizing

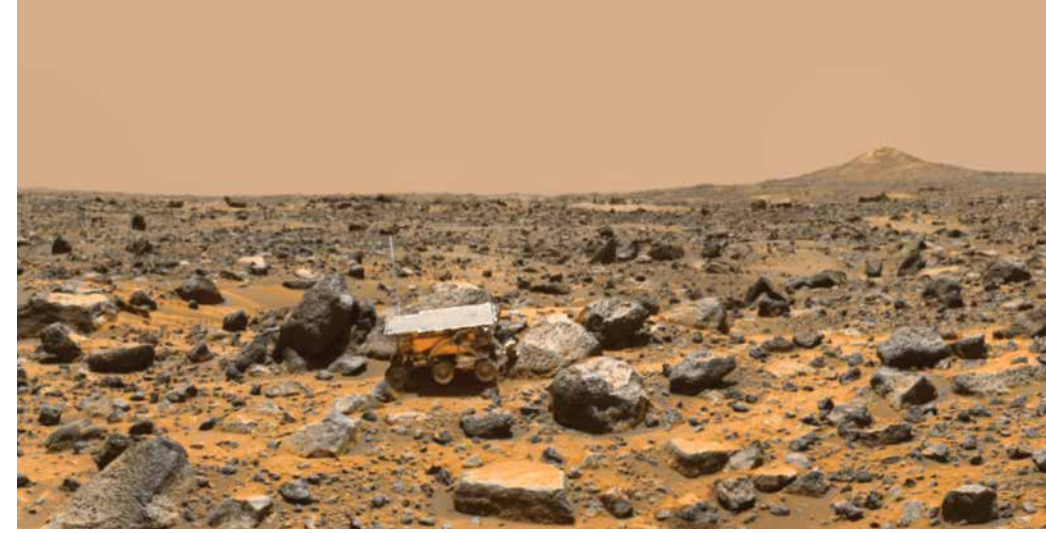
a hub-and-spoke system. By 1982, the company had grown to a fleet of 76 aircraft, including 39 Boeing 727-100F freighters. FedEx pioneered the system of tracking shipments in real time, a concept that has since been adopted by all other air cargo companies. Online shopping has also heightened demand for delivering individual products to residential addresses all over the world. Today, FedEx handles over 3 million shipments a day, and air cargo and express traffic is expected to double over the next 25 years. Just take a look around your kitchen—how many everyday items have been shipped from somewhere else in the world?

The concept for the Air Cargo Story was first envisioned by longtime Museum trustee and founder of Air Cargo Management Group Ned Laird, (pictured lower right, left of Fred Smith) who has been involved in the air cargo industry for more than 50 years. “The story of air cargo needed to be shared because it impacts our everyday lives, yet so few people realize how extensively.” In addition to a generous \$1.5 million grant to the Museum's *Inspiration Begins Here!* Campaign, FedEx also donated a cross-section of a 727 fuselage as the centerpiece of the exhibit, and spent thousands of volunteer hours collaborating with the Museum's exhibit team to create the displays to illustrate the Air Cargo story. Visitors can go inside the fuselage to see how FedEx transports cargo in the most efficient way possible.

The Museum is honored to be the first to share the untold story of air cargo, which represents 25% of the overall air transport industry. Visit the new Aviation Pavilion and the Air Cargo Story exhibit to learn more!

CALENDAR OF EVENTS

March



MARS MADNESS!

Get ready for EDL terror, regolith, robots and rovers as Mars lovers showcase Red Planet missions past, present and future. Speakers include Aerojet Rocketdyne's Roger Myers, Dr. Sanlyn Buxner from the Planetary Science Institute, Museum Public Engagement Manager, Carla Bitter and University of Washington SPACE Ambassadors Angela Kimber and Tyler Valentine. *All lectures will be held in our Charles Simonyi Space Gallery.*

- | | |
|--|--|
| Saturday, March 4 2 to 3:30 p.m.
Angela Kimber and Tyler Valentine, UW SPACE Ambassadors | Saturday, March 18 2 to 3:30 p.m.
Carla Bitter, The Museum of Flight Public Engagement Manager |
| Saturday, March 11 2 to 3:30 p.m.
Roger Myers, Aerojet Rocketdyne CEO | Saturday, March 25 2 to 3:30 p.m.
Dr. Sanlyn Buxner, Planetary Science Institute |



Weekly Aerospace Update

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 follows.

CHARLES SIMONYI SPACE GALLERY
Saturdays in March and April | 1 p.m.

Wells Fargo Free First Thursday

This month we are pleased to welcome the University of Washington Museology program. These graduate students will present a series of innovative and interactive educational projects, which address a range of aerospace topics. Visitors of all ages are welcome and participation and feedback are encouraged!

MUSEUM-WIDE
Thursday, March 2 | 5 to 9 p.m.
Presentations are from 5:30 to 7:30 p.m.



For, by and about Women in Engineering and Technology.

Join us for two days of live stream speakers from this year's Global Marathon-Dream Big event, featuring **The Engineering of Cirque du Soleil: An Intersection of Circus Arts & Technology.**

Known for its awe-inspiring feats and larger-than-life spectacles, Cirque du Soleil produces some of the world's most technologically-advanced productions. See this exciting panel session broadcast from one of Cirque's magnificent Las Vegas theaters here at the Museum.

CHARLES SIMONYI SPACE GALLERY
Saturday and Sunday, March 8 and 9

Please check the Museum's website for a detailed list of times and sessions.

Weekend Family Workshops

Explore the exciting world of flight in free hands-on workshops offered every Saturday and Sunday!

Mars Rovers

Spirit and *Opportunity* are two of the most famous and successful robotic rovers in the history of the United States space program. Learn about their missions to Mars. Then design your own Martian explorer!

T.A. WILSON GREAT GALLERY
March 4-5, 11-12, 18-19, and 25-26
11 a.m. and 1 p.m.

THANK YOU TO OUR COMMUNITY PARTNERS:



April



2017 KidWind Challenge

Renewable energy powers the day at the 2017 KidWind Challenge. Watch teams of middle and high-school students explore the power of wind by building and testing their own wind turbines in this STEM-centric design competition! Participation in the challenge is free and requires pre-registration through the KidWind organization. Please visit kidwindchallenge.org/events for more info.

SIDE GALLERY
Saturday, April 1 | 9 to 3 p.m.

Sensory Day

Early Opening

In recognition of World Autism Awareness Day, the Museum invites children with autism and their families to join us for an early 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 and T. A. Wilson Great Gallery will have adjusted lighting and sound to provide the best possible experience. Free admission offered to children with autism and their families from 8 to 10 a.m. on this day only.

J. ELROY McCAW PERSONAL COURAGE WING
Sunday, April 2 | 8 to 10 a.m.

WELLS FARGO FREE FIRST THURSDAY NASA Climate Night: Earth Monitoring from Space

Climate data has revealed that record heat is the new norm. Learn the latest from NASA & NOAA UW Space & Sea Grant students, the region's zoos and several other Museum partners. At 6 p.m. welcome our guest lecturer, David Reyes, MD, from the University of Texas Medical Branch at Galveston's Department of Preventive Medicine in a discussion on the impacts of climate change on human health.

CHARLES SIMONYI SPACE GALLERY
Thursday, April 6 | 5 to 9 p.m.

InFlight InSight: Red Planet Insider

NASA JPL's Terry W. Himes is a Mars Mission veteran with major roles in the successful development of deep space missions such as the Mars InSight Lander, Mars Phoenix Lander, Deep Impact/Epoxi as well as development, launch, flight operations and surface operations of many other flight projects. Come hear what it takes to get from here to there, and home again!

WILLIAM M. ALLEN THEATER
Saturday, April 29 | 2 to 3:30 p.m.

Space Medicine Past, Present and Future

Please join NASA Flight surgeon David Reyes, MD to learn how space medical capabilities have evolved from *Apollo* to Shuttle to the International Space Station, and how NASA and commercial spaceflight companies might address future medical needs on a human mission to Mars.

CHARLES SIMONYI SPACE GALLERY
Saturday, April 8 | 2 to 3:30 p.m.

Weekend Family Workshops

Explore the exciting world of flight in free hands-on workshops offered every Saturday and Sunday!

Kites on the Fly!

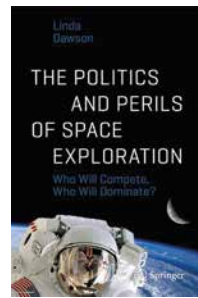
Did you know that people have been flying kites for over 2,000 years? From delicate kites made out of leaves to unique kites used for fishing to large kites that can actually lift people into the air, the kite has played an important role in aviation history. Come get the story of these incredible yet simple flying objects, then make and decorate your own kite to fly at home!

T.A. WILSON GREAT GALLERY
April 1-2, 8-9 and 15-16
11 a.m. and 1 p.m.

Gliderama!

What kind of aircraft can soar high in the sky yet hardly make any noise?a glider! Come to the Museum and get the scoop on these amazing aircraft and find out why this type of flying is called the 'Silent Sport', and then make your own high-flying paper glider. A different glider will be featured each weekend.

T.A. WILSON GREAT GALLERY
April 22-23 and 29-30
11 a.m. and 1 p.m.



Celebrate Yuri's Night!

Professor Linda Dawson, author of the newly released *The Politics & Perils of Space Exploration*, discusses her book, the "New Space" race and pays tribute to Yuri's Night—the global celebration of humanity's part, present and future in space honoring the legacy of cosmonaut Yuri Gagarin's first manned spaceflight on April 12, 1961.

A book signing and meet and greet with the author will follow the presentation.

CHARLES SIMONYI SPACE GALLERY
Saturday, April 15 | 2 to 3:30 p.m.

EDUCATION UPDATE

BY: KELSEY CROSS, EDUCATION SERVICES SPECIALIST

THE MUSEUM OF FLIGHT strives to be the foremost educational air and space museum in the world. Many of our programs and events involve hands-on opportunities for our visitors. With over 30 educational programs, events and activities throughout the year, we reach audiences of all ages and backgrounds.

The Museum's Education department hosted a STEM Sampler during the Wells Fargo Free First Thursday on January 5 to give students the opportunity to explore several of the Museum's education programs. A variety of interactive STEM activities were made available for all ages, including paper airplane design, whirlygig tests, comet launching, robot building and the chance to talk to a pilot from Alaska Airlines. Students who participated in at least one activity became eligible to join Connections, the Museum's free education membership for students ages 5-18. More than 160 students joined the program, giving them access to exclusive education programs, activities, events and complimentary admission to the Museum for themselves and one adult.

One of the STEM activities featured was an advance screening of the box office hit *Hidden Figures*, which follows the story of a team of African-American women at NASA who computed the challenging data needed to send America into orbit. In attendance were young women from the Museum's Aeronautical Science Pathway program, Private Pilot Ground School, Washington Aerospace Scholars, Michael P. Anderson program, Amelia's Aero Club and local community organizations who are interested in STEM programs. Introducing our students to female role models in STEM fields shows them that their ideas are valued and imperative to technological progress of our society—an empowering message given the lack of female representation in STEM careers.

London Holmes (pictured right), a local high school student who has been highly involved in the Museum's education programs, gave a brief speech before the movie screening to inspire the young women in the audience. "What's so special about aviation and aerospace? The late Charles Lindbergh summed it up best by stating, 'Science, beauty, freedom, adventure. What more could you ask of life?' My career goal is to become a commercial pilot, and I am confident that I can achieve my dream with hard work, determination and a supportive environment. I am thankful for women like Blanche Scott, the first woman pilot; Harriet Quimby, the



first woman to receive her pilot's license; and then Bessie Coleman, the first African-American woman pilot. These women paved the way for many of us who have a passion for aviation and aerospace careers."

"Thank you for hosting this event," said one parent, "My daughter and her friend (and I) were all extremely touched by the movie. Being able to watch it at the Museum was a huge bonus." Over 300 guests engaged in one or more education activities that night and left the Museum eager to pursue their own dreams, passions and interests.

TRAINING MUSES

BY: SETH MARGOLIS,
DIRECTOR OF EDUCATION

AS DIRECTOR OF THE MUSEUM'S William A. Hessel Education Department, it is my job to educate on behalf of the Museum. While I am normally concerned with aerospace topics, today's lesson concerns an obscure aspect of our institution and the heritage industry—the term museology. It is not mispronunciation of musicology or even has anything to do with music. Museology is the science and study of museum work, and one of the premier museum training schools is the University of Washington in Seattle.

The UW has two museum training programs—the Museology Graduate Program and the Certificate in Museum Studies program (UW Tacoma also offers a minor in Museum Studies)—and The Museum of Flight is fortunate to have strong links to both programs. Virtually all the Museum's departments have at least one graduate from a museology program on their staff and a number of volunteers and interns from both programs have been involved in our operations. Museum staff also serve as lecturers, instructors, thesis and project advisors and have even been commencement speakers. Our galleries have served as classrooms and evaluation project test sites; and Museum programs have been featured in course work, research assignments and theses. The Museum has been able to use the programs as resources in partnered grant applications, professional and institutional development opportunities

and as a means to engage our visitors in new and exciting ways. It is a powerful partnership that has resulted in some amazing outcomes for all of the stakeholders and for our visitors.

If you are interested in seeing the partnership in action, join us on March 2 when students from the Museology Graduate Program's education course implement their final projects as part of our Free First Thursday activities (page 15) or just find one of the programs' alumni who work at the Museum. Staff members Linda De Jesus, Clare Tally-Foos, Julie Bowman, Yann Defarbus, Sondra Synder, Jema Hayes, Paul Martinez, Megan Ellingwood, Sara Strasner, Lauren Messenger, Amy Heidrick, Geoff Nunn, Peder Nelson, Anne Melton, Gracie Loesser, Christine Runte and Tori Dennis are all UW Museology superstars.

May the Force be with the F-35

BY: DEVON SMITH, VISITOR SERVICES ASSISTANT



U.S. AIR FORCE

THE F-35 IS THE UNITED STATES' newest operational fighter plane. Designed to replace and improve upon most of the United States' current fleet, it is the longest and most expensive defense project ever undertaken, and possibly the most controversial.

The F-35 was proposed as a cheap, single-seat, single-engine fighter that would fit the ground attack and air defense needs of all three American services (the Air force, the Navy and Marine Corps) and several foreign countries. Using one airframe for all three services was expected to simplify logistics and be more cost effective than designing three entirely new aircraft. It was an ambitious project and in the mid 1990s, designers believed that technology had reached the point where such goals were attainable. Combining ground attack and air defense roles was not a challenge. Many military aircraft, from the P-47 Thunderbolt to the F-15E Strike Eagle, have performed well against tanks and aircraft. However, the Air Force, Navy and Marine Corps all had specific, disparate requirements for the plane.

To meet these requirements, the F-35 is available in three different

models: A, B, and C. The Air Force's F-35A is the lightest and most conventional of the three. Designed to operate from standard runways, it is notable for being the only one to carry an internal cannon. It is also expected to be manufactured in the greatest quantities. The Marine Corps' B model is more complex. They required a plane capable of short takeoffs and vertical landings to operate from their assault ships. To accomplish this, the B model trades 1/3 of its fuel capacity for a three-bearing swivel jet nozzle. Finally, there is the Navy's C model. Destined for carrier use, the F-35C is distinguished by its larger wings, strengthened landing gear, arrestor hook and folding wingtips.

Many of the program delays and subsequent cost overruns have resulted from the expectation that one basic airframe could meet the diverse needs of all three services. The B model was particularly troublesome. In 2004 weight issues in the B model necessitated an 18 month, \$6.2 billion redesign to the basic F-35 airframe. The tail hook on the C model forced a similar, though less drastic, redesign. Lockheed's concurrent development policy compounded these problems. Because

production and development were running simultaneously, any redesign would force them to retrofit existing airframes.

Though these big issues have been addressed, the F-35 still has plenty of issues. A leaked 2016 Pentagon report suggested that the F-35 has 276 deficiencies with new issues added to the list at an average of 20 per month. For example, the size of the advanced new helmet has led to visibility problems and concern for the safety of pilots under 136 pounds while ejecting. Other issues include nagging structural weaknesses, concern over the cybersecurity of the networked plane, and some questionable flight characteristics at the transonic barrier. Most concerning are the statements that the jet is not outperforming its predecessors. In a widely circulated 2015 report, an F-35 pilot involved in a mock dogfight against an F-16 bluntly stated that his early model F-35 was at a distinct disadvantage against the older fighter.

Fortunately, things now seem to be looking up for the F-35. Recent pilot reports have come back glowing. A Norwegian test pilot flying a new F-35 against another F-16 reported virtually the opposite of the American

test pilot. While noting that the F-35 had a higher learning curve, he felt the plane's potential was far higher and was pleased it could pull off maneuvers impossible in an F-16. The F-35's stealth capabilities have also lived up to their promises, giving the F-35 the ability to end a dog fight with a conventional fighter long before it even starts. Manufacturing costs are dropping as well. The Pentagon is expected to sign a \$9 billion deal with Lockheed that will finally bring the per-unit cost under \$100 million.

The previous and ongoing difficulties of the F-35 program are undeniable. But many aircraft overcame difficult gestation periods to find success. The F/A-18 Hornet program went overtime, over budget and was widely criticized for its low acceleration, short range, small payload and airframe issues. Today it forms the backbone of the US Navy. The F-35 is a far more complex project, but appears to be following a similar arc. With continued effort, it will be a force to be reckoned with well into the future.

NEW GUEST CURATOR

BY: ERIKA CALLAHAN, V.P. OF MARKETING

THE MUSEUM PROUDLY WELCOMES Mike Lombardi, a Senior Manager with Boeing and The Boeing Company Historian as its new Guest Curator. In this part-time role, Mike will lend his considerable knowledge and expertise to a variety of endeavors. In the near term, Mike will work with Director of Aircraft Collections, Tom Cathcart and the rest of the Collections Team to address recommendations that were part of the Museum Collections Stewardship Assessment completed last summer, and to guide the department forward

as part of the Museum's long term strategic planning process.

Mike has worked for Boeing since 1979 and has held his post as the chief company historian since 1994. Passionate and knowledgeable about all aspects of aviation, Mike authored and published the definitive *Strategic Airpower: The History of Bombers*, in 2014.

The Museum greatly appreciates Mike's friendship and support throughout the years as well as The Boeing Company's generosity in providing Mike as a loaned executive.

THE FORGING OF FUTURE GENERATIONS

A Glimpse into the Museum's New Book

BY: LOUISA GAYLORD, DEVELOPMENT COMMUNICATIONS COORD.

ON SEPTEMBER 14, 1965, The Museum of Flight was formed as the Pacific Northwest Aviation Historical Foundation, Inc. to restore and preserve iconic aircraft that were being decommissioned and scrapped. It was not difficult to find supporters to join the cause; the history of Seattle is so closely entwined with the history of aviation. Since that day more than 50 years ago, the Museum has grown into an organization whose influence reaches across the world—but it wasn't always easy.

Former Museum Executive Director Howard Lovering has captured the organization's history of bold proposals, risky deals, imaginative concepts, valuable acquisitions and characters worthy of fiction in his new book, *For Future Generations: A History of The Museum of Flight*. Over five decades, the Museum has grown from a few dreamers hoping to restore a dilapidated commercial biplane to a world leader in aerospace education. Fifty years ago no one could have foreseen what The Museum of Flight would become any more than we can predict the exciting developments that the future decades will bring. And who better to tell this story than someone who helped make it happen? "This is just the beginning of an outline for a continuing conversation with history," says Lovering, "As one who was there, I can assure you it is a privilege to participate in telling this story."

For Future Generations is filled with personal anecdotes and stunning photos, many of which have never been shared with the public. Museum Trustee Bruce McCaw wanted to begin work on the book before too much information from the early days was lost forever. He knew Lovering's involvement with the Museum would make him the ideal author, but he couldn't do it alone. The team also included aviation writer Jay Spenser, research assistant Peggy Nuetzel and Museum representative and history enthusiast Alison Bailey. "Clearly this story was one that required both depth and accuracy," says McCaw, "It had to convey the sense of courage, fear, panic, blind optimism, humor and success that were interwoven in all that has transpired in this remarkable journey."

The Museum of Flight was not built by one person. "What started small grew to be a large team, recruiting thousands of supporters, building from the bottom up an institution that not only shares with but also belongs to the visitor," says Lovering. The Museum's history is one of aviation, passion and inspiration—a history that you can be proud to be a part of.

For Future Generations is available now in the Museum Store and online at museumofflightstore.org.

THE FINAL DESTINY

BY: DON ULMER, MUSEUM DOCENT

THE FINAL DESTINY MODULE docent shift occurred in the late afternoon on Monday, Jan. 2 with an unusual twist. A typical closing docent story features Indian Astronaut, Sunita Williams and her four hour and twenty-four-minute marathon run on Destiny's treadmill. Sunita began concurrently with a sister who started her run in Boston. The talk concludes, "We don't know the sister's time, but we do know traveling 17,500 miles per hour through space made Sunita's total distance considerably longer."

As fate would have it, the final Destiny visitor was an Indian family of four touring the United States. As I told the story and showed them a picture of Sunita Williams, the daughter was elated and hung onto every word about her national heroine. Given that it was Destiny's last hurrah (in our gallery), I gave Sunita's photo to the young girl. She was overjoyed with the gift, and was especially thrilled to receive it in the very replica of where Sunita made history!

Destiny is currently being dismantled and will soon be on display at the Boeing Future of Flight in Everett.



IF YOU'VE VISITED THE MUSEUM since the beginning of 2017, chances are you have heard quite a racket echoing through the Great Gallery. Construction began in early January on the new and improved Apollo space exhibit. The exhibit, which is scheduled to open on May 20, will feature all new artifacts and stories, including the Apollo F-1 engines that Bezos Expeditions recovered from the bottom of the Atlantic Ocean. Keep an eye on the calendar as we will announce dates for special opening activities.

COMMITMENT TO THE COMET

BY: STEVE DENNIS, MUSEUM VOLUNTEER



MANY OF THE AIRCRAFT on display at The Museum of Flight began their museum careers at the Restoration Center and Reserve Collection on Paine Field. Some of the aircraft at the Restoration Center included the Grumman Wildcat and Boeing 727. Volunteers with varied skill sets put in hundreds of hours restoring them to museum-quality artifacts. Phil Sacks is one of the esteemed Restoration Center volunteers. Phil has spent over 20 years working on many projects, specifically focusing on the de Havilland Comet.

Phil entered the U. S. Army and served in the 9th Infantry Regiment/2nd Infantry Division. He fought in the Korean War, was wounded at the Battle of Heartbreak Ridge and earned the Purple Heart. Phil is a member of "The Military Order of the Purple Heart" organization and proudly wears his member's jacket. In 2015, Phil was asked to throw the 'first pitch' at a Seattle Mariners game. It was a pleasure and an honor to represent all recipients of the Purple Heart.

Phil's path into the Aviation field began after he served in Korea. With his GI Bill benefits, he obtained a B. S. Degree in Mechanical Engineering and majored in Thermodynamics. He worked for several Southern California aerospace companies and retired from Lockheed in 1995.

Upon retirement, Phil and his wife, Dorothy, moved to Seattle. He credits Dorothy with his Museum introduction. He joined her for a trip to the Museum as she explored volunteer opportunities. Dorothy became a

docent and was active for seven years. Phil doesn't consider himself a "public guy" so docent work had little appeal. However, the Volunteer Coordinator introduced Phil to the Restoration Center and he was hooked.

Phil enjoys working with his hands and welcomes the challenges presented by the Comet Restoration effort. Dating from the 1950's, the Comet was the first significant jet-powered commercial passenger plane. Unfortunately, few Comets survive and plans and parts are in short supply. Adding to the challenge, the Museum's Comet suffered years of neglect and water damage before its Restoration Center rescue.

Walking through the Comet, Phil points with pride at the work he and his associates have completed over the years. When parts were unavailable, they manufactured their own. At the date of this article, the cockpit appears ready for the flight crew to arrive. The galleys are coming together and look ready for food service. The main cabin seems ready for boarding. The interior is virtually done, but the structures surrounding them need extensive work. It seems Phil and the other volunteers are never short of projects.

In his early years at the center, Phil volunteered several days of the week. Now, at nearly 87 years of age (86 ¾ per Phil) he is down to one day a week. "As a kid I loved working with my hands; rebuilding cars and such. The Comet has given me another chance to work with my tools," said Phil. "Every one of our volunteers is a unique gem and Phil,

Honor the heroes in your life.

Celebrate the friends and loved ones who have devoted their time and energy to a cause they believed in.

Reserve your tribute today with a gift of \$1,000 or more.



THE MUSEUM OF FLIGHT Military Honor Wall

For more information, please visit museumofflight.org/recognition or call 206.768.7234.

with 20 years of service, is certainly one of our irreplaceable gems." said Sheree Van Berg, Aircraft Restoration Technician staff member at the Restoration Center.

The Museum is fortunate to have such a skilled and dedicated volunteer. Future generations who want to see a truly authentic restoration will benefit from his commitment and hard work for decades to come.



WHAT GOES AROUND COMES AROUND

BY: TED HUETTER, SENIOR PR MANAGER

JOHN GLENN WAS ONE OF THE FIRST seven NASA astronauts in the group commonly known as the Mercury 7. He was the oldest of the team. Glenn outlived them all and died on Jan. 8 at age 95. The group represented the best of the best American military aviators (a requirement at the time), each willing to risk their life in the first bold, dangerous battles of the Cold War “space race” with the Soviet Union.

Naturally competitive, the Mercury 7 vied for the maiden voyage, which traditionally goes to the top dog in a flying team. Alan Shepard won, but his suborbital mission came on the heels of Soviet Yuri Gagarin’s global spaceflight. The best NASA could do next was another suborbital hop, this time with Gus Grissom. Months passed and Gherman Titov orbited a Soviet capsule for a day. America was losing face. So the pressure was on Glenn, number three, to save the day with NASA’s first orbital spaceflight. He succeeded 55 years ago.

That week Time magazine wrote, “Not since Lindy (Charles Lindbergh, after his 1927 solo trans-Atlantic flight) has the U.S. had such a hero.” America loved him. Maybe too much.

“Well, after my flight I wanted to get back in rotation and go up again,” Glenn explained in a 1997 NASA interview. He never got the chance, and nobody had the heart to tell him why. After a couple of years turning down management jobs, hoping his turn would come, he left NASA.

“I didn’t know until some years later that apparently President Kennedy had said that he would just as soon I wasn’t used again for a while, and I wasn’t aware of that at the time. I guess after my flight there had been such an outpouring of national attention, that if you weren’t there and went through it, it’s sort of hard to comprehend the attention we had and the—I guess “adulation” is the only word that comes to mind. But that’s what it was. That’s not very humble of me to say that, but that’s exactly what it was.”

What is striking about what he said is that at age 76 he apologized for using the word “adulation.” This from a person who as a Marine flew combat missions in World War II and Korea, became a record-setting test pilot, proved himself on NASA’s first orbital mission and as an Ohio Democrat served four terms in the senate. Thirty-six years after his Mercury flight he finally returned to space—on the shuttle.

Some heroes are burdened with celebrity, and their halo gets tarnished by changing times, relentless scrutiny and personal folly. Why not Glenn’s? The big clue has been hiding in plain sight.

Glenn let his son and daughter choose the name for his Mercury spaceship, telling them “there’s only one ground rule. The world is going to be watching, so the name should represent our country and the way we feel about the rest of the world.” They chose Friendship.

Tribute Gifts

In Memory

In memory of Harlow G. Ahlstrom
John and Sharen LaVillette

In memory of Alaska Airlines Flight 261
Robert W. and Myrtle L. Pensworth

In memory of Ernest Anderson
Barbara Beach

In memory of James R. Anderson
Barbara Osborne

In memory of Richard (Dick) A. Anderson
Lauretta Anderson

In memory of Andrew Asmussen
E Amy Bentz

In memory of Paul Bennett
Annette Wallick

In memory of Robert (Bob) J. Beringer
Mark Beringer

In memory of Donald V. Birdsall
Dave and Carla Birdsall

In memory of Inga L. Bolang
Fred and Karin Harder

In memory of Peter M. Bowers
Anonymous

In memory of Stan Brewer
Mariale Brewer

In memory of George T. Chandler
Cliff and Betty Neve

In memory of Robert G. Comstock
Madeleine Grandy

In memory of William H. Cook
F. Wyatt Cook

In memory of Paul R. Cressman, Sr.
Bruce R. McCaw

In memory of Tom Dawson
William W. Johnson

In memory of George Warthen Downs
Jennifer Draper and Markus Kunz

In memory of Ernest Anderson
C. M. Dunn, Jr.
Melbern and Rose Dunn

In memory of Richard L. Durham
Betty Lou Durham

In memory of Stuart W. Ewing
Richard and Dianne Arensberg

In memory of Gerald C. Fitzsimmons
Patricia Fitzsimmons
Leon and Rosemary Freischmidt

In memory of Kathleen Heyvaert
Donald and Elisabeth Knuth
Carlos and Ruth Prochnov
James and Bonnie Salm

In memory of Tom Gaffney
Ken and Pat Perry

In memory of Susan T. Gardner
Becky Beasley

In memory of Thomas R. Green
Tommy and Jill Green

In memory of Russell D. Holly
Dean and Trudy Holly

In memory of Lowell Houtchens
Marlene Taylor Houtchens

In memory of Robert P. Hryn
Patrick and Tara Fitzpatrick

In memory of Sidney L. Hutchison
Judith Hutchison

In memory of Dennis J. Isaacs
Donald Isaacs

In memory of James H. Jackson
Fred and Janice Naslund

In memory of Harold D. Jolly
Catheren Jolly

In memory of Richard B. Kimball, Sr.
Robert Kimball

In memory of Bill Kirkland
Linda F. Kirkland

In memory of Clyde L. Lackey
Leslie Lackey and Stephen Whyte

In memory of Wayne W. and Mildred J. Woodruff

In memory of Harold C. Lee
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In memory of Lindley T. Locke
Betty Locke

In memory of Ted L. Lomax
Gloria Lomax

In memory of Wallace (Wally) G. McPherson, Jr.
Laura Engbrecht

In memory of C. Diane Neiders
Karl and Tina Neiders

In memory of George A. Nutter
Pamela Nutter

In memory of our parents
Michael Martinez

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In memory of Harold G. Schwanke
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The Museum of Flight offers its sincere condolences to the families and friends of departed Museum volunteers, members, and supporters.

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