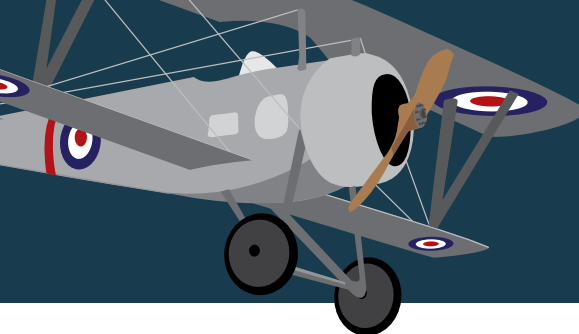


# aloft

THE **MUSEUM OF FLIGHT** MAGAZINE



VOL. 41, ISSUE 5  
SEPTEMBER/OCTOBER 2019



# FREE MEMBER EVENTS

For all events, please RSVP to [membership@museumofflight.org](mailto:membership@museumofflight.org).



© DISNEY STUDIOS

## EXCLUSIVE! MEMBER MOVIE NIGHT *Planes: Fire and Rescue*

When world-famous air racer Dusty learns that his engine is damaged and he may never race again, he is launched into the world of aerial firefighting. Dusty joins forces with veteran fire and rescue helicopter Blade Ranger and his team, a bunch of all-terrain vehicles known as The Smokejumper. Together the fearless team battles a massive wildfire, and Dusty learns what it takes to become a true hero.

WILLIAM M. ALLEN THEATER

**Friday, September 13 | Movie starts at 6 p.m.**  
(Doors at 5:30 p.m.)

RSVP to [membership@museumofflight.org](mailto:membership@museumofflight.org).  
Rated PG. Family-Friendly. Snacks provided.

## STEM starters

STEM Starters is a monthly program series geared to our youngest Members! Children ages 3 to 5 and their co-pilots (one adult per child) are invited to explore the wonders of aerospace during this fun, educational program.

### ON A ROLL! 4 sessions available!

How does a ball move? How can we get it to go further and faster? Enjoy an interactive story about moving and rolling and then get yourself moving by building and testing ramps!

**Mondays, Sept. 30 and Oct. 14**

**Two sessions each day:  
10:30 to 11:30 a.m. OR 3 to 4 p.m.**

**September Sessions  
LEARNING ANNEX  
East Campus Parking Lot**

**October Sessions  
NORTHWEST AEROCLUB ROOM  
Red Barn, 1st Floor**

**RSVP required. Space is limited. To attend, email us at [membership@museumofflight.org](mailto:membership@museumofflight.org).**

*Due to limited space, supplies, and developmentally appropriate curriculum, we are unable to accommodate additional children (such as younger siblings). Thank you for understanding.*

## THE MUSEUM OF FLIGHT Restoration Center and Reserve Collection

### MEMBERS-ONLY OPEN HOUSE

**Saturday, Sept. 21  
11 a.m. to 2 p.m.**

The Museum of Flight's Restoration Center and Reserve Collection at Paine Field is a 23,000-square-foot site where thousands of volunteer hours are devoted to renovating and restoring aircraft to exhibition quality. Join us for our annual Open House and come see what we're up to!

The Museum of Flight  
Restoration Center and Reserve Collection  
2909 100th St. SW, Everett, WA 98204



### See artifacts in the Museum Collection not normally on view!

Coffee and light snacks provided. Featuring Red Barn Blend coffee, available exclusively at the Museum Store.

RSVP to [membership@museumofflight.org](mailto:membership@museumofflight.org).

### FLYING CARS

**Friday, Sept. 20 | Noon to 1 p.m.**  
VIEW LOUNGE (2ND FLOOR)

"Roads? Where we're going, we don't need roads." See how close we've come to this statement becoming reality as we share objects, archival and library materials relating to research and development of the flying car idea.

### 4TH ANNUAL WEIRD AND WONDERFUL

**Friday, Oct. 18 | Noon to 1 p.m.**  
VIEW LOUNGE (2ND FLOOR)

Join us in October for our fourth annual edition of our "Weird and Wonderful" Coffee with the Curator! During this presentation, the Collections department staff will share odd, head-scratching, and strangely wonderful items from our collection.

### EXCLUSIVE!

## Under the Night Sky PLANETARIUM EXPERIENCE

Learn about the Solar System you call home. Presented in our portable digital planetarium, we will explore constellations, planets, moons, and more while learning about the motions and interactions of these amazing celestial objects.

T.A. WILSON GREAT GALLERY

**Sundays, Sept. 22 and Oct. 13 | 2 to 3 p.m.**  
*Limited to 30 participants per session.*

**RSVP required. To attend, email us at [membership@museumofflight.org](mailto:membership@museumofflight.org).**

*This program is suitable for ages 5 and up. Children must be accompanied by an adult. Participants must be able to sit on the floor for the duration of the program. Not recommended for those with mobility issues or motion sensitivities.*

# Contents

THE MUSEUM OF FLIGHT MAGAZINE

SEPTEMBER/OCTOBER 2019

## CONTACT THE MUSEUM

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

24-Hour Info Line: 206.764.5720



## 16 WRONG WAY CORRIGAN



## 22 OUT-OF- THIS-WORLD BLOCK PARTY

### ALOFT STAFF:

**Editor-in-Chief:** Irene Jagla

**Contributing Editors:** Erika Callahan, Louisa Gaylord, Reba Gilman, Amy Heidrick, Ted Huetter, Robin Webster, Sarah Strasner, Megan Ellingwood

**Art Direction & Design:** Julie Wilbert

**Columnists:** Nicole Davis, Steve Dennis, Sandra Dolese, Louisa Gaylord, Ted Huetter, John Little, Sean Mobley, Geoff Nunn

**Web Producer:** Layne Benofsky

**On the cover:** A head-on view of NASA's SR-71B, used for pilot proficiency and training, on the ramp at the Air Force's Plant 42 in Palmdale, California, shortly before delivery to the Ames-Dryden Flight Research Facility (later, Dryden Flight Research Center) at Edwards, California. (NASA)

Be sure to join us on September 14-15, 2019 for our Blackbird Forum. See page 9 for more information.

### Questions or Comments?

Email us at [aloft@museumofflight.org](mailto:aloft@museumofflight.org)

- |  |                                     |
|--|-------------------------------------|
| 2 Membership Events                                    | 17 September Calendar               |
| 4 Through His Lens                                     | 18 October Calendar                 |
| 5 Museum Flashbacks                                    | 19 Junior Aviators                  |
| 6 Curator's Corner                                     | 21 Volunteer Profile: Bob Alexander |
| 7 Education Update                                     | 24 Museum News                      |
| 9 Blackbird Forum                                      | 26 Power of Giving: The Abramsons   |
| 13 Hello, Goodbye, 1969 in Aviation                    | 27 In Memoriam & Tributes           |
| 14 Centerfold: Wingless Lifting Body Research Aircraft |                                     |



## THE MUSEUM OF FLIGHT

**Administration | 206.764.5700**  
info@museumofflight.org

**Development | 206.768.7234**  
development@museumofflight.org

**Membership | 206.764.5711**  
membership@museumofflight.org

**Volunteers | 206.768.7179**  
volunteers@museumofflight.org

**Public Programs | 206.768.7162**  
public\_programs-all@museumofflight.org

**Private Events | 206.764.5706**  
privateevents@museumofflight.org

**Group Sales | 206.768.7104**  
groupsales@museumofflight.org

**Museum Store | 206.764.5704**  
store@museumofflight.org

**Wings Cafe | 206.762.4418**  
groupsales@museumofflight.org

**Collections, Library and Archives**  
206.764.5874, curator@museumofflight.org

**Restoration Center and Reserve Collection**  
425.745.5150, SVanBerg@museumofflight.org

**Boeing Academy for STEM Learning**  
206.768.7239, education@museumofflight.org

### Board of Trustees

**Chairman**  
Robert A. Blackstone

**Vice Chair**  
Charles A. Lyford IV

**Treasurer**  
James T. Farmer

**Secretary**  
Kent A. Ramsey

### Executive Committee

Bill Ayer	Nancy M. Hogan
Thomas A. Baillie	Craig Howard
John W. Brantigan, M.D.	Michael C. Koss
J. Kevin Callaghan	Ned Laird
Harold E. Carr	H. Eugene McBrayer
Robert E. Dannenholt	Bruce R. McCaw
Stephen Elop	James D. Raisbeck
Stephen D. Fulton	Anne F. Simpson
Tom Gibbons	Stephen Taylor
Michael R. Hallman	

### Trustees

George W. S. Abbey	Metcalf-Lindenburger
Mark Armstrong	Robert Meyerson
Nancy L. Auth	Roger M. Myers
Bernt O. Bodal	Karl D. Neiders
Jon G. Bowman	John P. Odom
Tom R. Captain	Tom T. O'Keefe
Scott E. Carson	Katie Pribyl
Joe Clark	Seymour "Si" Robin
Carolyn Corvi	Kevin L. Schemm
Douglas F. DeVries	Joe Silvernale
Shaunta Hyde	Gordon L. K. Smith
Bruce W. Hilyer	Graham Smith
Mary A. Knell	Sri Thornton
Crystal L. Knotek	Danielle Yoakum Tilden
Brad Lawrence	Wilf T. Wainhouse
Antoine Leblond	Erika B. Wagner
Ronald L. Limes	Kevin Wells
G. William McCutcheon	Kevin M. Wyman
Dorothy M.	



## THROUGH HIS LENS

COURTESY MATT HAYES

**YOU'LL NEVER HEAR ME COMPLAIN** about not having an interesting job. Four hours ago, I watched Geoff Nunn, our wonderful Adjunct Curator for Space History, give a tour of *Destination Moon: The Apollo 11 Mission* to a rapt group of visitors. This group included the Mayor of Kent and the King County Historical Landmark Commission. Were they here to bestow landmark status on the Red Barn or the like? No...the area being evaluated for potential status was slightly more "distant."

Initiated and spearheaded by the City of Kent, this was not your average request. The application was to bestow this status to rovers that are currently on the Moon. I have no idea about the jurisdiction arguments that may arise from such a proclamation, but I do know that the Museum enthusiastically supported their endeavor.

A few hours ago (at least as of this writing), landmark status was granted.

This may seem quixotic or amusing, and it certainly is fun to think about, but granting this status is a critical endeavor. As we say goodbye to the Apollo 11 spacecraft and as the 50th anniversary of the Moon landing fades into memory, it is imperative for society to continue to remember historic milestones and locations like the Moon rovers, even if they do not reside in our home county or planet. 400,000 women and men helped make the Moon landings possible, and many of them worked in Kent and throughout the Puget Sound region.

We may think of signposts and zoning protection when envisioning landmark sites. But they are not all about bricks and mortar, or even Moon buggies. Sites also help preserve the stories of the men and women that brought that history to life. There are complex and incredible lives that intertwine with a particular building, plot of land, or far away footprints. In this case, Apollo literally helped define what humankind is all about. So absolutely, the rovers and the sites around them should be protected, as should their related stories.

I don't know if our Museum will be a landmark someday (the Red Barn already is). But it has all the makings of one: stunning architecture, relevance to the region, unique power in stature and meaning, and an educational institution that will shape generations. And it has stories of people that shaped, and will continue to shape, our world. The footprints around the Museum aren't in Moon dust and the vehicles in our parking lot aren't spacecraft or Moon rovers. But the impact of what we do is forever embedded in our community.

Thank you, Kent, for preserving our first foray off the planet. And thank you to the people that help make the Museum a landmark of its own.

Matt Hayes, President and CEO

**ABOVE:** The Museum's lunar rover on display in *Destination Moon: The Apollo 11 Mission*. Exhibit closes September 2.



# Museum Flashbacks

**TOP LEFT:** On the morning of July 16, the Museum Astronaut and Museum President Matt Hayes hoisted the American flag on the top of the Space Needle in honor of the launch of Apollo 11 on that day in 1969. (JACQIE CALLAHAN) • New media from near and far have been filing stories from the *Destination Moon* exhibit since it opened, with an even greater presence during the week of the Moon landing anniversary. Here videographer Gilbert Diaz gets a close-up for CBS national news. (TED HUETTER) • The Public Programs team put together a fantastic schedule of lectures, films and book signings for the To the Moon! Program series. Here are scenes from just a few: Michelle Hadlon told us how the organization For All Moonkind is trying to save the Apollo lunar landing sites from future abuse; Smithsonian Apollo Curator Teasel E. Muir-Harmony talked about the Apollo 11 astronauts' global goodwill tour (made using the Museum's Air Force One); international science writer and TV personality Sarah Cruddas lectured about the space race and signed her book about the same subject; and shuttle astronaut/pilot/doctor/artist and philosopher Story Musgrave gave several presentations at the Museum with topics ranging from flying T-38s to the secrets of a happy life.



# SILVERPLATE BOMBERS

QUESTIONS ANSWERED BY: JOHN LITTLE, ASSISTANT CURATOR AND RESEARCH TEAM LEADER AND GEOFF NUNN, ADJUNCT CURATOR FOR SPACE HISTORY



Boeing B-29 Superfortress "Enola Gay" landing after the atomic bombing mission on Hiroshima, Japan. (U.S. Air Force photo)

**Q: WHO ENJOYED THE FIRST NAP ON THE MOON? SINCE THE APOLLO LMS DID NOT HAVE SEATS, DID THAT ASTRONAUT NAP ON THE FLOOR?**

**A:** Apollo 11 astronauts Neil Armstrong and Buzz Aldrin were the first people to walk and sleep on the Moon, though it is not clear who nodded off first. They spent a total of 21 hours on the lunar surface, which included a rest period with seven hours of sleep on the schedule. The astronauts used hammocks strung across the cramped confines of the lunar module to lie down and catch some Z's before lifting off to rendezvous with the command module for their return to Earth. They were originally scheduled to have a four-hour rest period between the lunar landing and preparations for the first spacewalk, but the crew was too excited, and insisted on going outside as soon as possible. Can you blame them?

**Q: DURING WORLD WAR II, MY FATHER PERFORMED HIGH-PRIORITY WORK FOR THE U.S. GOVERNMENT AT A LARGE MACHINE SHOP IN DETROIT, AND I BELIEVE THAT HE MIGHT HAVE BEEN MAKING THE ENGINE MOUNTS FOR THE ENOLA GAY AND THE OTHER B-29S THAT CARRIED ATOMIC BOMBS. WHAT MODIFICATIONS WERE MADE TO THE ENGINES OF THOSE B-29S?**

**A:** Of the 3,965 B-29s that were built, only 65 were capable of dropping atomic bombs, and

only 15 of those were in service when World War II ended. The atomic-bomb carriers were known as "Silverplate B-29s" and underwent extensive modifications. According to Richard H. Campbell, *The Silverplate Bombers: A History and Registry of the Enola Gay and Other B-29s Configured to Carry Atomic Bombs*, "The most significant change in the new Silverplate B-29s was the use of a vastly improved power plant, the Wright R-3350-41. This engine incorporated better cooling features, fuel injection, and a fuel flowmeter/manifold system. In addition, Curtiss Electric propellers with reversible pitch capabilities were installed to improve braking power on landings. These improvements probably contributed more to the success of [the] 509th [Composite Group's] operations on Tinian and the atomic bombing missions than any other features of the new configuration" (14). Of the modifications listed above, the ones most likely to have required new engine mounts were the "better cooling features" and the "fuel flowmeter/manifold system." If your father did, indeed, fabricate the engine mounts for the Silverplate B-29s, he played an important, if necessarily secret, part in bringing World War II to a successful conclusion.

**Q: I'M JUST CURIOUS WHY THE MUSEUM NEVER TRIED TO GET A CONVAIR F-106 DELTA DART? THEY GUARDED THE NORTHWEST FOR MANY YEARS.**

**A:** First, the museum at Joint Base Lewis-McChord, just 50 miles from The Museum

## What's new in the collection?

BY: NICOLE DAVIS, SUPERVISORY ARCHIVIST

The Willard P. Williams Lunar Orbiter Photograph Collection includes three sets of photographic transparency strips mounted between sheets of Plexiglas. A local donor inherited these photographs from his father-in-law Willard P. Williams who had worked for Boeing for 43 years as a flight engineer. Williams was stationed in Australia in the late 1960s when NASA's Lunar Orbiter program was active. The five unmanned lunar orbiters circled the Moon, took photographs of the surface, developed the negatives in space, and then scanned and transmitted the images back to various receiving stations on Earth. One of those receiving stations was in Australia, and Williams was one of the people who received the images. Once received, the images were re-processed, mounted as we see in these panels, and then printed. These photographs allowed for detailed study and mapping of the Moon's surface which would later help determine the landing sites for the Apollo missions.



THE WILLARD P. WILLIAMS LUNAR ORBITER PHOTOGRAPH COLLECTION/THE MUSEUM OF FLIGHT

of Flight, already has an F-106 on display. Second, F-106s guarded the entire country, not just the Pacific Northwest, and nine other F-106s are on display in other states, from California to Florida, and Arizona to New York. Finally, The Museum of Flight just does not have room for any new aircraft. Hence, no F-106.

**HAVE A QUESTION?**

Submit it to aloft@museumofflight.org and it could appear in the next issue of Aloft!



EDUCATION UPDATE

Private Pilot Ground School class of 2019. (THE MUSEUM OF FLIGHT)

# Class of 2019

**PRIVATE PILOT GROUND SCHOOL**, sponsored by Delta Air Lines in partnership with Puget Sound Skills Center, Green River College and Raisbeck Aviation High School, served 104 high school students from the Puget Sound region and beyond this summer. A celebration of learning was held on the final day of class to honor students for their accomplishments, which included 94% of them earning 5 college credits for outstanding achievement and every student earning a semester of high school credit. Tony Gonchar, Vice President of Delta Air Lines in Seattle was present to congratulate the students and

encourage them to consider a future in the aviation industry where demand is especially high for pilots. "Delta will be hiring 8,000 pilots in the next ten years, and you could be one of them," he stated.

Approximately 30% of the students indicated that they plan to take the FAA Private Pilot written exam while still in high school. As a result of participation in the summer program, students are now eligible to apply for one of the Museum's \$10,000 flight training scholarships. Applications will be available on January 1, 2020.

Highlights of the summer Private Pilot



**STAY UP-TO-DATE** by liking and following our new **Boeing Academy for STEM Learning Facebook, Instagram and Twitter** pages to keep up with news, updates, and videos about our hands-on education programs.



Ground School students piloting the simulators in our Aviation Learning Center. (THE MUSEUM OF FLIGHT)

Ground School program included a field trip to SeaTac Airport in which students learned about airport operations and management, hearing from guest speakers who were military, commercial, and seaplane pilots about what it takes to enjoy a similar career path; and, having the entire Museum as their learning laboratory. Students cited learning how to fly the simulators in the Museum's Aviation Learning Center as the most enjoyable aspect of the program.

Further information about Private Pilot Ground School is available on the Museum's website at [museumofflight.org/PPGS](http://museumofflight.org/PPGS). Registration for Summer 2020 will begin in March 2020. Rising 9th through 12th grade students are eligible for participation.

## Celebrating Our 13th Year!

**WASHINGTON AEROSPACE SCHOLARS** celebrated its 13th year in a big way with junior summer residency programs in Washington, Oregon and Montana! This was the inaugural year for the WAS Junior Oregon program hosted by the Garmin company at their research and manufacturing site in Salem, Oregon. In addition to visiting the Boeing factory in Portland, our WAS scholars were able to utilize the NASA-funded drop tower at Portland State University for their engineering challenges and also slept under a rocket at The Evergreen Aviation and Space Museum in McMinnville.

Our WAS Junior Montana scholars toured the engineering labs at Montana State University: Bozeman, took a general aviation flight and looked at Jupiter and Saturn through Montana's largest public access

telescope at the Montana Learning Center in Helena.

WAS also celebrated 13 years of programming with an Alumni Reunion under the SR-71 Blackbird. WAS founders, Bonnie J. Dunbar and Governor Chris Gregoire shared their special messages with the reunion attendees and our WAS graduates got to mix and mingle with former NASA and current Museum Board member Astronaut Dottie Metcalf-Lindenburger, WAS Foundation Board members and other special guests.

Applications for the WAS 2019-2020 junior program are available now at [museumofflight.org/WAS](http://museumofflight.org/WAS). WAS is made possible by the generous support of Wells Fargo, The Boeing Company, The Museum of Flight, NASA, and individual donors.

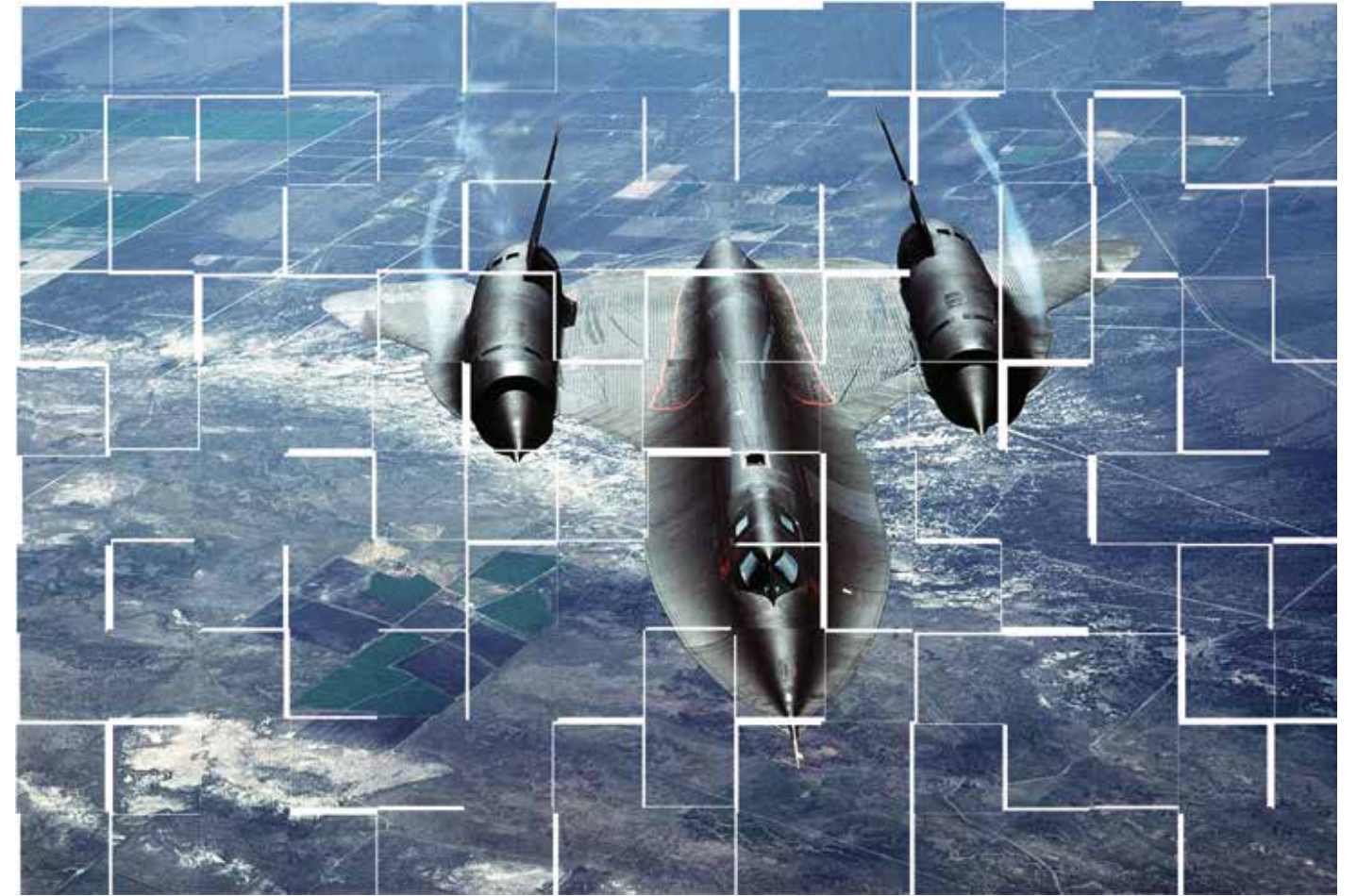
Now Open

# THIS WAY UP

## AVIATION ENGINE DESIGN

The evolution and impact of aviation engine design over the past 120 years!

in the T.A. Wilson Great Gallery



# BLACKBIRD FORUM

SEPTEMBER 14-15, 2019

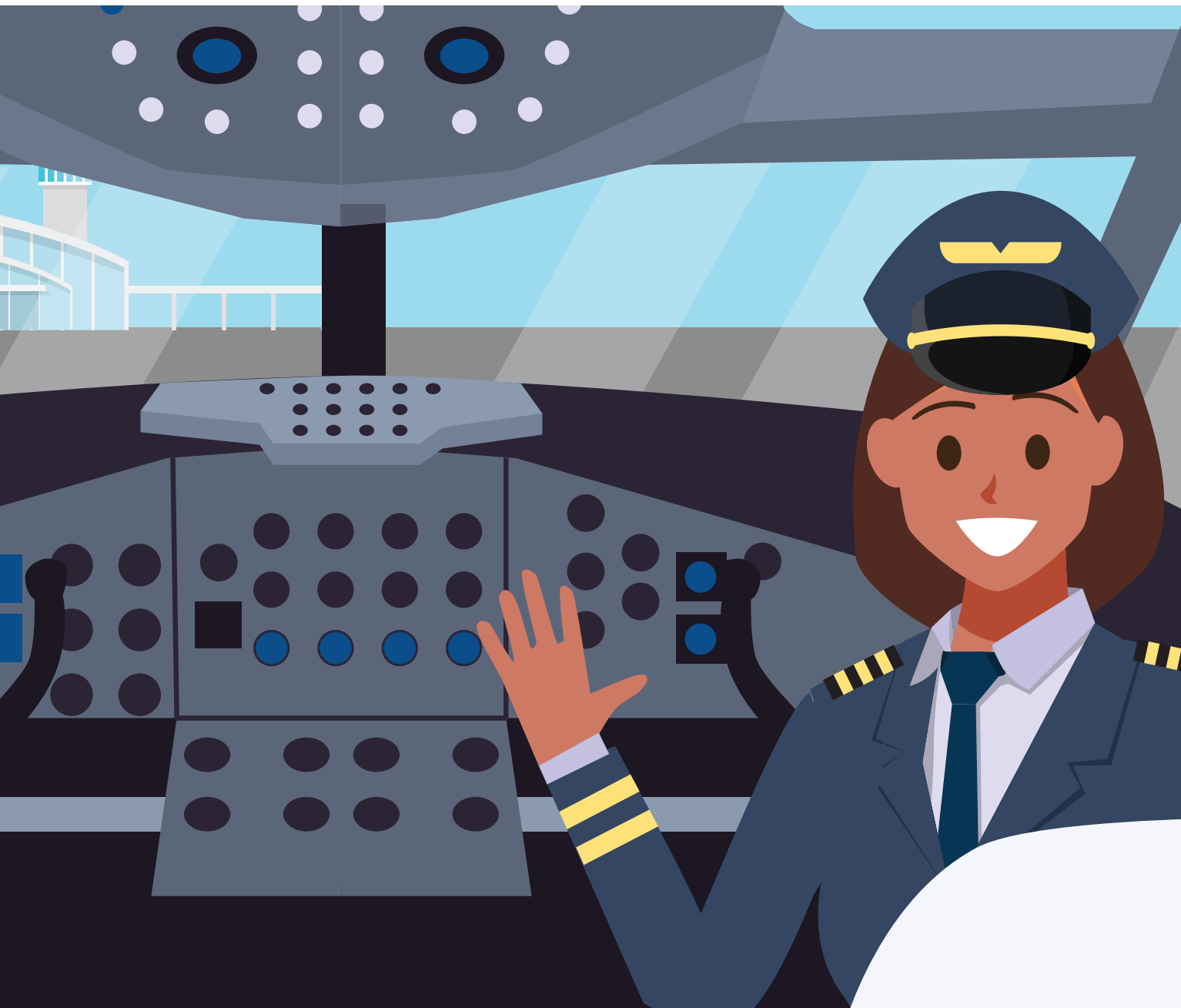
**THERE'S NO DENYING** that our M/D-21 Blackbird brings flocks of visitors to the Museum each year to admire its sleek design, powerful engines, and to contemplate its impact on the history of aviation. This September, these visitors will get an additional treat in the form of a Blackbird Symposium, a weekend-long event consisting of presentations and activities to honor the storied Blackbird Cold War spy plane. During the forum, pilots, reconnaissance rear seat officers, and maintenance crew members who worked on the Blackbirds will assemble to explain the legacy of Lockheed magic

that started with designers Kelly Johnson and Ben Rich. Visitors will get a chance to meet, talk with and hear from these Blackbird team members who travel to participate in other forums at museums across the country. These Blackbird veterans answer your questions and share stories of their own experiences working on the Blackbird, a rare aviation artifact that we here at the Museum are proud to display. There were only 50 Blackbirds ever produced, and the best way to learn about their stories is at the Blackbird Forum! **Check the Museum's website for details and a schedule of events.**

# There's More to Life Than Being a Passenger.

How do you become a pilot? The best way to find out is to ask one—or better yet, talk with the four pilots who are part of the first all-women, exclusively African American crews working at Alaska Airlines and Delta Air Lines. The path to becoming a pilot is not always linear; there will be setbacks and obstacles, and the aviation industry still has a ways to go to reach true gender and racial equity. You'll need to build a support network to lean on when things are difficult, and those relationships will last a lifetime. It's an incredibly rewarding career to take off and explore the skies, and there are many exciting changes on the horizon.

BY: LOUISA GAYLORD, DEVELOPMENT COMMUNICATIONS COORDINATOR



## "I knew I couldn't do it on my own; there was no time to be shy or reserved."

- MALLORY CAVE

**M**allory Cave, a First Officer with Alaska Airlines, always wanted a job that could be fun and different. "I did always dream of having a job that I enjoyed doing every single day," she says. "I loved flying as a passenger and one day in high school I thought, 'I wonder what it's like up front, to actually fly the airplane?'" The process of becoming a pilot is not always straight forward, and it's certainly not easy.

Although the aviation industry is making a conscious effort to be more diverse and inclusive, there is still a long way to go before race, class and gender parity is reached. "One of the toughest times was initially, when I was going through pilot training," says Mallory Cave. "The flight instructors weren't enthused to fly any extra days with me, although they would fly extra days with the guys. I kept trying to get someone to fly [with me] so that I could get ahead. I got nowhere." She finally had to bring a complaint all the way to the president of the Ohio University's Engineering Department. Mallory was the first African American woman to earn a degree in Aviation Flight from the school, and she continued to see similar inequalities in the workforce. "In all of my pilot new hire classes, I was the only female as well as the only African American," says Mallory. "The guys in my class would all gather and study together. They would never extend the invitation to me. I had to invite myself to those study groups. I knew I couldn't do it on my own; there was no time to be shy or reserved."

Tara Wright, a Captain with Alaska Airlines, has been flying since 1993. While

growing up, she considered many career possibilities before deciding to become a pilot. Tara remembers visiting the airport with her family: "My dad would ask me what kind of airplane it was, and we'd make up stories about where in the world it was headed," she says. "The best part was getting to see the reunions people had with friends and loved ones." Flying connects us with the rest of the world, and to become a good pilot, you need to find common ground with strangers and build a support network of friends, family and teachers who encourage you.

Tara Wright acknowledges that being a part of the first all-female African American flight crew for Alaska is a big milestone, and it would have been impossible without role models and support: "We've achieved this only because of the women that have come before us: Bessie Coleman, Patrice Clark-Washington and other aviatrixes who have paved the way," says Tara. "Our grandmothers and mothers instilled a sense of confidence that we can do whatever we want with our lives." Tara did not set out to become a pioneer, but she invariably became one: "As one of only an estimated 150 African American female pilots in the United States, I have racked up a few 'firsts,'" says Tara. "I view each one as a major accomplishment in a world where it often seems most everything has been done."

Dawn Cook, a First Officer with Delta Air Lines knew that she wanted to fly from a young age. "My mother was a flight attendant; I would travel with her and simply loved the idea of seeing new places, meeting new people and controlling a 500-mph jet!" says

Dawn. "I love that no day is the same. No take off, no landing, no customer, no trip. It's always a chance for me to strive to be my best." Everyone we interviewed had someone to inspire them on their way to earning their wings, and they are passionate about helping others who follow in their footsteps.

Several organizations focus on bringing diversity to the future of aerospace, including the Organization of Black Aerospace Professionals, Sisters of the Skies and Women in Aviation. "It's one thing to know you are doing something that has never been done before; it's another to see people's reaction of support, encouragement and pride," says Dawn Cook. "I love what I do, and it's been wonderful to share this joy with others."

**D**ana Nelson, a First Officer with Delta Air Lines, always wanted to be a pilot. "For my fifth birthday I got to ride in an airplane. One of my favorite things to do was go to the airport and watch planes take off and land for hours," Dana says. Although she loved flying, she had a hard time choosing how to spend her time. "While I was taking flying lessons in high school, I was also on the track team, cross-country team, softball team, and playing violin in the orchestra and singing in the church choir," Dana says.

When Dana Nelson first started studying aviation, she was always the only African American woman in her class. But a lot has

## "As one of only an estimated 150 African American female pilots in the U.S., I have racked up a few firsts."

- TARA WRIGHT



CREDIT: TED HUETTER

## Mallory Cave

FIRST OFFICER, ALASKA AIRLINES



COURTESY ALASKA AIRLINES

## Tara Wright

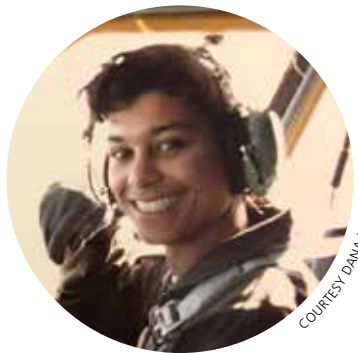
CAPTAIN, ALASKA AIRLINES



COURTESY DAWN COOK

## Dawn Cook

FIRST OFFICER, DELTA AIR LINES



COURTESY DANA NELSON

## Dana Nelson

FIRST OFFICER, DELTA AIR LINES

changed since then: “It was rare to see another woman or hear them on the radio,” Dana says. “Now I smile every time I see another female in uniform walking through the terminal. I’m excited to see what the aviation field will look like in 20 years.” And you don’t have to be the “first” at anything to start making a difference. “I am always serving as a mentor,” Dana says. “Whenever a female pilot is in uniform, they are mentoring. We have an opportunity to inspire.” Earlier this year, Alaska Airlines committed to quadrupling the number of African American female pilots at the company by 2025. This is an incredible step, and will certainly inspire more changes for the entire industry in the future.

A 2016 report from the Boeing Company predicts that 42 percent of the pilots flying with major airlines in the U.S. will retire in the next 10 years. The Museum of Flight is making it easier than ever for students to learn about the world of air traffic control chatter and aeronautical charts. Students ages 5-18 receive free Museum access with the Connections program, and courses like Amelia’s Aero Club and the Michael P. Anderson Memorial Aerospace Program are specifically targeted towards demographics that are underrepresented in STEM industries. The Museum’s Private Pilot Ground School program, sponsored by Delta Air Lines, introduces high school students to the fundamentals of flight, prepares them to take the FAA private pilot written test, and allows them to earn high school and college credit. Aspiring pilots also have the opportunity to meet aerospace professionals at a variety of Museum events.

And thanks to the generous supporters of several educational endowments and scholarships, students participating in the Museum’s educational programs have the opportunity to apply for scholarships that assist with the cost of flight training and post-secondary studies. The future of aerospace is being written today, and if you’re interested in being a part of it, The Museum of Flight can help you build a strong foundation and give you the tools needed to succeed.

# "Whenever a female pilot is in uniform, they are mentoring. We have an opportunity to inspire."

- DANA NELSON

# "I love what I do, and it's been wonderful to share this joy with others."

- DAWN COOK

**S**o what does it take to become a pilot? “Insert yourself! Don’t try and do it all on your own. Surround yourself with people and mentors in the aviation industry you feel comfortable confiding in,” says Mallory Cave. “If you are passionate about aviation, that passion will drive you to become successful!”

There isn’t a template for what makes a good pilot, and skills can be taught: the capacity to face new challenges, perseverance, confidence and the ability to multitask. “Be able to connect with your crew, your team, the customers,” says Dawn Cook. “You must be able to push yourself and seek greatness in all you do to perfect your craft.”

With the high demand for pilots and aviation professionals in the coming years, it’s the perfect time to learn what it takes to earn your wings. “Today, kids excited about being airline pilots have the wind at their backs,” says Tara Wright. “The worldwide market is expanding rapidly. What took me 30 years to accomplish, it might take someone just starting out just half the time.”

Any final advice for aspiring pilots? “Do it. Don’t wait,” says Dana Nelson. “And definitely don’t let anyone tell you can’t do it.”

## MUSEUM MUSINGS

# HELLO Goodbye

1969 IN AVIATION  
BY: TED HUETTER,  
SENIOR PR MANAGER

When Concorde made its maiden flight in 1969, most thought that supersonic airline travel was here to stay. It only lasted until 2003, when the Museum’s Concorde made the last commercial flight. (TED HUETTER)

**WITH THE 50TH ANNIVERSARY** of the Apollo 11 mission now behind us, let’s look at flight a little closer to planet Earth during 1969. There were some long-lasting hits, a few misses, and some of it thankfully a thing of the past.

The Boeing 747 took off in February, a couple weeks after the company submitted its designs to the FAA for a delta-wing supersonic transport. Concorde took to the air in March, while the Tupolev Tu-144 SST led the pack as a Mach-busting airliner. On a smaller scale, the Fairchild Swearingen Metroliner and the Lockheed YO-3 made their maiden flights. Beechcraft introduced the Baron 58, the company’s King Air 100 entered service, and the last Beech 18 was delivered in November, ending a run that began in 1937.

NASA was doing more than putting people on the Moon. At its Dryden Flight Research Center in California the agency’s Martin Marietta X-24A wingless “lifting body” rocket plane made its first flights, continuing NASA research into wingless flight that began there in 1963. Six different lifting body designs were meant to someday evolve into full-fledged spacecraft that would be flown from orbit like an airplane. While they contributed to the success of the shuttle, the dream of the futuristic lifting bodies has yet to be realized.

NASA’s epic X-15 space plane was formally retired in 1969, although the last of its 199 flights was made in October 1968. And in February 1969 the gigantic Mach 3 NASA XB-70A made its final flight.

In January the U.S. Navy hailed the Grumman F-14 as its new long-range fighter; a couple months later the Navy established TOPGUN, the legendary fighter pilot school.

The end of an era in aerial combat came when a Honduran Air Force pilot flying a F4U Corsair shot down two FG-1 Corsairs and an F-51 in the last fatal dogfights between piston-engined aircraft. And settling an old score, Darryl Greenamyer wiped the 30-year-old NAZI piston-engine speed record off the books with a run of 478 mph in his modified World War II F8F Bearcat.

Then there’s commercial aviation. Say what you may about crowded planes and mediocre meals, flying today is far safer and more predictable than it was 50 years ago. The last year’s commercial tragedies are more of an anomaly than the rule. According to the Aviation Safety Network, 2017 was the safest year ever, with no jet passenger deaths and only 10 fatal airliner accidents, and that includes cargo planes and commercial passenger turboprops. In 1969 there were 98 accidents resulting in

431 deaths. Looking at the overall stats during the past 50 years we see that while the number of accidents wavered, significantly more of the accidents resulted in fewer deaths and injuries.

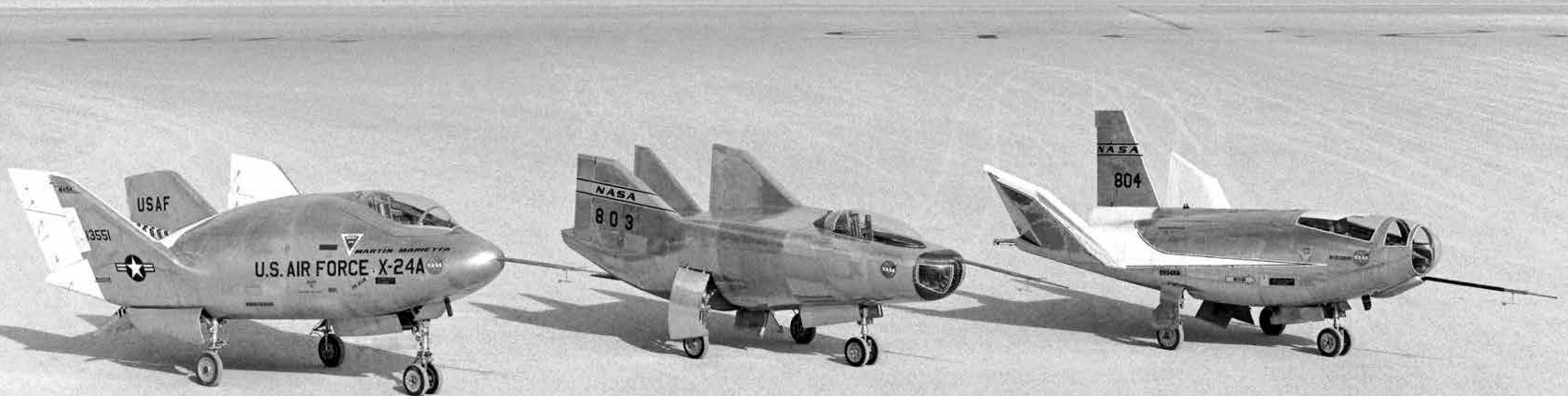
The airline fleets in 1969 were still a mix of piston-engined planes, turboprops and early jet age aircraft. Today’s mature fleet of look-alike jetliners and propjets may not be as colorful, but with their significantly more advanced navigational aids, and incredibly reliable technologies coupled with a more vigilant air traffic control system, they can ensure a safe flight.

Mid-air collisions were always rare, but they happened. In September of ’69, an Allegheny Airlines DC-9 and a little Piper Cherokee crossed paths near the airport. Everyone died. The National Transportation Safety Board (NTSB) put most of the blame on Air Traffic Control.

After Sept. 11, 2001 commercial aviation entered a new world of security to prevent hijackings. Yet 1969 was at the beginning of period of about five years when hijackings were almost common. In the U.S., hijackers usually just wanted to get somewhere. The FAA reported that Cuba was the most popular destination for hijackers in 1969, commandeering 31 U.S. and 25 foreign carriers that year. Eight U.S. airliners were hijacked to Cuba in January! Most of time the passengers were disembarked in the U.S before the flight winged across the water, or they might go for ride to Cuba before continuing to their destination in the U.S.

The longest-ever hijacked flight happened in October, when a troubled, 19-year-old U.S. Marine named Raffaele Minichiello sneaked his rifle and ammo onboard a jet from L.A. to San Francisco. Threatening a flight attendant at gun point he demanded to be flown to New York. The plane was diverted to Denver, where the passengers disembarked and Minichiello said he really wanted to go to Rome, Italy. The plane continued to the Big Apple to refuel, where it was met by a team of FBI agents. They backed off when he shot a hole in the cabin, and after stops in Bangor, Maine and Shannon, Ireland they arrived in the Eternal City, where Minichiello was arrested and served 18 months in jail.

That month the U.S. Marshall Service finally opened a Sky Marshal office in Miami, but it couldn’t stop 14-year-old David Booth from becoming America’s youngest hijacker when he took over a Delta flight from Cincinnati and diverted it from Chicago to Lexington, Kentucky. He escaped prosecution because the Feds didn’t have a juvenile facility there.



While spacecraft of the 1960s made parachute landings in a capsule (never liked by pilot-astronauts), NASA and the Air Force believed the future of spaceflight was with craft that can endure the heat of reentry and be flown to a runway like an airplane. Wingless "lifting body" research aircraft developed the concept with atmospheric flights using a variety lifting bodies from 1963-1975. Here are three of these remarkable aircraft in the late 1960s at NASA Dryden Flight Research Center: Martin Marietta X-24A, Northrop M2-F2 and Northrop HL-10. (NASA)



# Wrong Way Corrigan

BY: SEAN MOBLEY,  
DOCENT SERVICES MANAGER



Douglas "Wrong Way" Corrigan, visiting the Museum July 13-15, 1984.(THE MUSEUM OF FLIGHT)

## DOUGLAS "WRONG WAY" CORRIGAN

earned his nickname by simply getting lost. As a young mechanic in 1927, Corrigan worked for the Ryan Aeronautical Company when another young aviator made a special order for an aircraft to carry him across the Atlantic. Corrigan later claimed that when this aviator, Charles Lindbergh, picked up his plane Corrigan was the one to pull the chocks off the wheels of the aircraft, the Spirit of St. Louis, so Lindbergh could take off. Lindbergh ultimately flew the plane into the history books by successfully piloting it solo across the Atlantic Ocean.

Only a few years younger than Lindbergh and a proficient pilot in his own right, Corrigan hoped to replicate Lindbergh's flight. He finally took his shot in 1938. Though trans-Atlantic flights are common today, in the 1920s and 30s they were extremely dangerous propositions. Six men were killed competing with Lindbergh to be the first to non-stop cross the Atlantic from New York in 1927. Even in the intervening 11 years between Lindbergh's and Corrigan's attempts, only a handful of people made the trip successfully.

After repeated attempts in the mid-1930s to gain clearance for a trans-Atlantic flight from U.S. aviation authorities, Corrigan apparently decided to take his fate into his own hands. In July 1938 he filed a flight plan from New York to California. Corrigan took off from New York City in his Curtiss Robin and subsequently got "a little lost." 28 hours later, his plane landed in the countryside outside Dublin. When asked how he ended up in Ireland instead of California, he claimed to have simply turned the wrong way.

In 1984, The Museum of Flight asked if Corrigan might come up and visit our Curtiss Robin to generate some buzz for the Museum. Corrigan agreed, so long as he could sell copies of his book. The aviator arrived in July 1984, and his name and story, while faded from the limelight, was still very well known in the minds of the average American. Seattle even held a parade for Corrigan that went the wrong way down one-way 5th Avenue downtown.

His personality certainly hadn't faded. He eschewed his Hilton hotel room and instead asked to bunk with Howard Loring, the Museum's then-CEO, on Loring's couch and just take the cash for the hotel room. While the Museum catered to many of Corrigan's needs, this one went unfulfilled.

Corrigan still had that "Wrong Way" energy and humor, and for the next several days he held court at The Museum of Flight. His visit drew crowds of people to the Museum

and proved it had the brand strength to bring in someone like Corrigan.

By all accounts, the event was also a success for Corrigan, but how he maintained the energy to carry on remains a mystery: he reportedly turned down the meals offered to him and instead sustained himself with candy bars and orange soda for the duration of his visit.

Corrigan's personality may make him memorable to the public, but his technical achievement should not go unremembered. Whether or not he took that 'wrong turn,' as he claimed until he died in 1995 is somewhat immaterial. The fact remains, he completed a journey that had claimed many lives before him. When he left The Museum of Flight, he took the train back to California where he arrived safely, with no wrong turns.

Commemorative postal cover from Corrigan's visit to the Museum. (THE ERIC J. BAKER COLLECTION/THE MUSEUM OF FLIGHT)



# September



## SPECIAL EVENT

### RAF Red Arrows Visit Seattle!

The United Kingdom's Royal Air Force aerobatic display team, the Red Arrows, fly into Boeing Field in formation around 11:30 a.m. and will give a special presentation with pilots and engineers from 1 to 2:30 p.m.

## MUSEUM-WIDE

**Monday, Sept. 23 | 11 a.m. to 2:30 p.m.**

## LECTURE

### War in Space

War fought in space is becoming increasingly likely in a politically tense world, and author Linda Dawson explores how such a conflict could manifest in her new book, *War in Space: The Science and Technology Behind Our Next Theater of Conflict*.

## CHARLES SIMONYI SPACE GALLERY

**Saturday, Sept. 14 | 2 to 3 p.m.**



## SPECIAL EVENT

### Blackbird Forum

Join the pilots, back-seaters and ground crew of the Blackbird Association in a weekend-long celebration of all things Blackbird, including presentations, children's activities, and a special film screening. **See ad on page 9.**

## WILLIAM M. ALLEN THEATER

**Saturday and Sunday, Sept. 14-15  
11 a.m. to 5 p.m.**

## FILM SCREENING

### Lost Black Cats: The 35th Squadron

A powerful documentary about the Taiwanese pilots involved in the American U-2 project to uncover China's development of nuclear weapons in the 1960s and 1970s. The film will be followed by a Q&A session with director Jonathan Yang.

FREE to the public. No RSVP required. *Event occurs after-hours. The Museum's galleries and exhibits will be closed.*

## WILLIAM M. ALLEN THEATER

**Wednesday, Sept. 18 | 5:30 to 7:30 p.m.**



**WELLS FARGO**

## FAMILY EVENT

### 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 T.A. Wilson Great Gallery, J. Elroy McCaw Personal Courage Wing, Charles Simonyi, Space Gallery, Aviation Pavilion and more from 5 to 9 p.m. The Museum Store and Wings Café will also remain open for extended hours.

**T.A. WILSON GREAT GALLERY  
Thursday, Sept. 5 | 5 to 9 p.m.**

## WEEKEND FAMILY WORKSHOPS

### Spy in the Skies!

Can you keep a secret? You don't need Top Secret clearance to come to this program, but it would help! Learn about the SR-71 and M/D-21, known as the Blackbird—the most amazing spy plane to ever take to the skies—then make your own Blackbird model.

**T.A. WILSON GREAT GALLERY  
Saturday and Sunday, September 7-8,  
14-15, 21-22 and 28-29  
11 a.m. and 1 p.m.**

## LECTURE

### New Horizons Mission Update

In July 2015, NASA's New Horizons spacecraft became the first mission to visit dwarf planet Pluto. After a successful flyby, it continued on to the Kuiper Belt. Learn about how New Horizons is revolutionizing our understanding of solar system objects orbiting far from the sun.

**CHARLES SIMONYI SPACE GALLERY  
Saturday, Sept. 28 | 2 to 3 p.m.**

# October

**Weekly  
Aerospace Update**

Get the latest news in astronomy, aviation and spaceflight from our own experts. Q&A follows. **Every Saturday at 1 p.m. in Sept. and Oct.** in the Charles Simonyi Space Gallery.



**LECTURE**

## 727 Restoration Talk with Bob Bogash

Learn about the history of Boeing's most popular jetliner and the details behind the 727 restoration project at Paine Field.

**NORTHWEST AEROCLUB ROOM  
Saturday, Oct. 5 | 2 to 3:30 p.m.**



**FAMILY EVENT**

## Star Wars Reads Day

Wear your Jedi best as you enjoy arts and crafts, special programming and costumed characters. And don't forget to submit a story for our "Empire Writes Back" writing contest! For details about entering the writing contest see page 24. The Museum joins over 2,000 organizations across North America participating in Star Wars Reads during the month of October.

**T.A. WILSON GREAT GALLERY  
Saturday, Oct. 12 | 10 a.m. to 2 p.m.**



**SPECIAL EVENT**

## FILM SCREENING Return to Hardwick

The 93rd Bomb Group was the most decorated, most traveled, and most effective B-24 bomb group during WWII. This film documents a new generation of the group's history and explores its long-forgotten airbase: Hardwick Aerodome 104. Director Michael Sellers introduces the film and discusses its creation.

**WILLIAM M. ALLEN THEATER  
Saturday, Oct. 26 | 1 to 3 p.m.**



**FAMILY EVENT**

## The Museum of Fright

Join us for our annual transformation into The Museum of Fright! Across the Museum galleries, you'll find Halloween carnival-style games and activities to spark imagination, innovation, and get in the Halloween spirit. Design and build soaring, swooping, and spooky fliers below a high-flying glider, hop through an obstacle course under the Blackbird, and encounter other frightful surprises! See ad on page 24.

**MUSEUM-WIDE  
Sunday, Oct. 27 | 10 a.m. to 3 p.m.**



**WELLS  
FARGO**

**FAMILY EVENT**

## 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 T.A. Wilson Great Gallery, J. Elroy McCaw Personal Courage Wing, Charles Simonyi, Space Gallery, Aviation Pavilion and more from 5 to 9 p.m. The Museum Store and Wings Café will also remain open for extended hours.

**T.A. WILSON GREAT GALLERY  
Thursday, Oct. 3 | 5 to 9 p.m.**



**LECTURE**

## Science Café Talk

Space science is advancing faster than any time in history, and there's no better way to learn about it than at a "Science Café" lecture and Q&A presented by the local chapter of the Planetary Society.

**CHARLES SIMONYI SPACE GALLERY  
Thursday, Oct. 3 | 7 to 8 p.m.**

**WEEKEND FAMILY WORKSHOPS**

## Rockin' Robots

Learn about robots in this hands-on workshop and investigate what makes them tick!

**T.A. WILSON GREAT GALLERY  
Saturday and Sunday, October 5-6, 13, 19, 20, and 26  
11 a.m. and 1 p.m.**

# Junior Aviators

**TOY FROM THE COLLECTION**

## Pan Am Airport Vehicles, c. 1980

These four Pan Am Worldwide Airlines branded tin (and plastic) toys were made in Japan in the 1980s. A take on the ubiquitous tin toys of the 1930s, the more modern variety utilized tougher lithographed graphics, lighter materials and practical uses. One of the 747s doubles as a pencil sharpener! The other 747 features friction action: you can pull the plane back and release it to propel itself forward. The helicopter and airport service car represent other vehicles you may have encountered at the Pan Am terminal. In the 1980s Pan Am was working to re-establish itself as a domestic airline. Since PAA's beginnings in 1927 they had been associated with international travel. As the airline industry grew in the 1960s and 1970s, Pan Am was no longer the only international option and they lost their control of the market. By 1991, PAA would be out of business, acquired by Delta, though their brand continues to live on as a reminder of the more glamorous days of air travel. These toys were donated to the Museum in 2002 by Kurt Miller.

CREDIT: THE MUSEUM OF FLIGHT

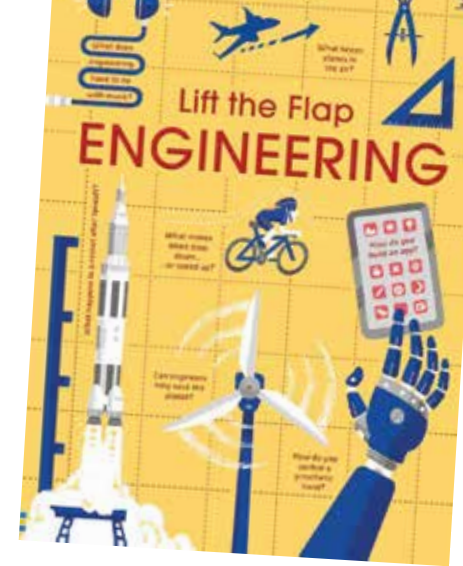


V C X J Y W X J M T D X A F Q N J W  
 N B P T U P O L E V V L H K Q E D Q  
 S E R M S T A D E L R I A S R O C T  
 N B A G Z L K E N E R E L O I C U C  
 E E C L H G L E B W R S F X Y D G O  
 G A J X I D C H K Y Q Q R R H H C A  
 F R S G V M E K H X G O Q S Q F I S  
 R C K S W P W C W Q C W X H O W Y U  
 Y A M S H Q M O Y U Q Y S W P G K T  
 W T D Q N L D L L O Y L Q U S S G F  
 C C U R T I S S R O B I N R E I X T  
 Q L J I L K C D L L W D A L F J G H  
 N U X D E L T A A N H N S X F Z W C  
 C S N X Q L F C L X A X P J I J I W  
 R L B P I O K M K A I M Z J G X H G  
 P K F Z A B S Q C P K F M N F R B X  
 A Y I W I C F X J E P S D U J I I X  
 U Y M R V J W P W R Y L A W R Z D X  
 W L D B E E C H C R A F T L S G G K  
 O H U K C O N C O R D E Y E A H V Y

## Plane Name Word Search

Can you find all the plane names? Words can be found forwards, backwards, and diagonally. Good luck!

- |            |               |
|------------|---------------|
| ALASKA     | CURTISS-ROBIN |
| BEARCAT    | DELTA         |
| BEECHCRAFT | GRUMMAN       |
| BLACKBIRD  | LOCKHEED      |
| CONCORDE   | TUPOLEV       |
| CORSAIR    |               |



**BOOK RECOMMENDATION**

## Lift the Flap Engineering

Did you know that engineering helps shape the world around us? From the houses and cities we live in, to the way we travel, and even the sound of the music we listen to, engineering is behind all the structures and technologies we enjoy every day. Lift the flaps in this fascinating book to discover how engineering works, the many things engineers do, and how engineers are building a better world. This book also includes links to websites with more engineering triumphs, and activities and projects to try at home.

**MEMBER PRICE: \$12.74**  
Available in the Museum Store and online at [museumofflightstore.org](http://museumofflightstore.org)

Do Something  
**GRAND!**

**With a Tribute Gift—In Honor or in Memory of your Grandparents.  
Honor those who have made a difference in your life and the lives of others.**

Online tribute gifts may be made at [museumofflight.org/Donate](http://museumofflight.org/Donate). Checks may be sent to The Museum of Flight at 9404 E Marginal Way S, Seattle, WA 98108. For more information, please call Dana Flanegin at 206.768.7134 Monday thru Friday. Your honoree will be notified of your appreciation (unless you donate anonymously). All tribute gifts will be listed in the Museum's bi-monthly *Aloft* magazine.

**CELEBRATE GRANDPARENTS DAY ON SEPTEMBER 8!**

**Fifty years ago  
we landed on the Moon.**

*Relive the Apollo 11 Mission Today.*



DESTINATION  
**MOON**

THE APOLLO 11 MISSION

**Exhibit closes Sept. 2**



**VOLUNTEER PROFILE**

# Bob Alexander

BY: STEVE DENNIS, VOLUNTEER

**FRIDAY AFTERNOON VISITORS** to the Charles Simonyi Space Gallery receive a special bonus—a chance to meet 92-year-old docent Bob Alexander, a former member of the Hubble Telescope design team at Lockheed. Pointing to the telescope replica suspended high overhead, he offers guests insights into the design and function of the system as only a Lockheed insider can.

In 1947, after two years, ten months and 8 days in the Navy, he had no idea his career path would lead him to a space program. After a short stint with Piasecki Helicopter in Pennsylvania (which later became the Vertol Division of Boeing) he packed his in-laws, wife and three small children into a 1948 Studebaker and headed to California where he hoped to find a job in aviation. Driving through Burbank, after an unsuccessful interview at Hughes Aircraft, he passed the Lockheed factory and decided to stop in and file an application. He was hired and worked nearly his entire career there before retiring in 1987.

He was involved in the design of a number of aircraft including the P-2V Neptune, a maritime patrol and anti-submarine warfare

aircraft, and the iconic Lockheed Constellation, or Connie. "I worked on customizing interiors for different airline customers," Alexander said. "I very well may have worked on the Museum's Connie that's sitting at the main entrance." When offered an opportunity to transfer to the Lockheed Missile and Space Division, Alexander made the move and changed his career trajectory dramatically. In 1977 he joined the Hubble Telescope design team.

The original concept was for a telescope that would be placed in space and then returned to Earth periodically for upgrade and maintenance. With Space Shuttle transport available Lockheed proposed a design which would be maintained in space, rather than returned to Earth. That eliminated some design challenges and created others. "It was an exciting time. We had to innovate and invent new solutions as we went along. It was the best job I ever had," said Alexander.

Sadly, the 1986 *Challenger* Space Shuttle disaster put the Hubble launch on hold. All the shuttles were grounded and the telescope lost its ride into space. Though he retired in 1987, Alexander remained passionate about the Hubble program. He arranged his retirement

travel to put him in Florida at launch time where he renewed Lockheed friendships and saw the fruits of his labor soar into space.

Alexander became a Museum docent in 2011, at age 84, and joins his fellow Gig Harbor docents in a weekly carpool.

Reflecting on his life and career he says, "I've had a good life; married to my late wife for 61 years, four kids, ten grandkids and 13 great grandkids. My career was interesting and challenging, and now I enjoy being able to share stories about the Hubble with Museum guests."

With more Hubble knowledge than a Google search, Bob Alexander, and docents like him, are a priceless Museum asset that enhance the visitor experience each day.

ABOVE: Bob poses below the Museum's Hubble telescope 1:2 scale model in the Charles Simonyi Space Gallery. (TED HUETTER)



## MUSEUM NEWS

# An Out-of-this-World Block Party

**LUNAR BLOCK PARTY KICKED OFF** on July 19 as a weekend-long celebration of the 50th anniversary of the Moon landing, and guests filled the Museum to tour *Destination Moon: The Apollo 11 Mission*, take in a live performance from Britishmania Beatles Tribute Band, and enjoy an outdoor showing of Space Jam. On Saturday, the Museum marked the exact moments that Apollo 11 landed on the Moon with a performance from Jet City Improv, who took over the Charles Simonyi Space Gallery with a retro-inspired scene that culminated with the original broadcast footage of the Moon landing. Later that evening, NASA astronaut Dottie Metcalf-Lindenburger (pictured right) delivered an inspirational address to mark the exact moment that Neil Armstrong set foot on the Moon as an audience watched a video of that historic event. Later, a crowd of over one-thousand concert goers listened to American Idol top 10 finalists sing original songs and covers, including a rousing rendition of “Bohemian Rhapsody” from Demetrius Graham, who had the crowd on their feet and singing along from beginning to end. The concert ended with an ensemble performance of “Come Together” and a special airline ticket giveaway from Alaska Airlines. On Sunday, local space enthusiasts and industry experts gathered in our Skyline Room for Splashdown Sunday, a brunch meet n’ greet with special presentations from NASA and Blue Origin specialists who discussed the Artemis Mission—NASA’s next Moon mission—and the prospects of space tourism.

Big thanks to all of our Lunar Block Party sponsors, Alaska Airlines, The Boeing Company, City of Tukwila, Aerojet Rocketdyne, Bank of America, Elysian Brewing, Hyatt Regency Seattle, Swire Coca-Cola, City of Kent, CenturyLink and to our media partners, 106.1 KISSFM, 93.3 KUBE and The Seattle Times.

PHOTOS: JACQIE CALLAHAN



**Kids 17 & under FREE!**  
Must be in costume with adult chaperone

# The Museum of Fright

**OCTOBER 27**  
10 AM TO 3 PM

Creepy Crafts!  
Mad Science Lab!  
Obstacle Course!  
Spooky Aviation-themed Ghost Stories!  
and so much more!

Kids 17 & under without costume - \$5  
Adults - \$10  
*Special ticket price not available online.*



**MUSEUM NEWS**

## Saying Goodbye to Columbia

**ON SEPTEMBER 2, WE BID FAREWELL** to one of the most awe-inspiring artifacts that the Museum has ever hosted: the command module *Columbia*, the spacecraft that transported the first humans to the Moon and back during the Apollo 11 mission. When the *Destination Moon: The Apollo 11 Mission* exhibition closes, it will have inspired thousands of visitors with its story

of humanity's most incredible achievements. Guests from all over the world, and of all ages, were inspired by the exhibition. Sarah Cruddas, space journalist and TV presenter, said this about the exhibition after visiting: "No matter where we go or what we do in space, we are able to do so because of Neil, Buzz, and Michael and every single person who worked on Apollo."



**FOR THE FIRST TIME IN MUSEUM HISTORY,** the Blue Angels' F/A-18 Hornets took center stage in the Museum's parking lot, where every flight during Seafair began and ended at the Museum. The Blues arrived in the evening of July 28, their blue and yellow livery reflecting the sun's last rays during golden hour. The next day, Seafair hosted a media event in the Museum parking lot, and all week long, visitors were able to get closer than ever to the jets.

**MUSEUM BLOG**

## The F-14 Tomcat and the Pilots Who Flew It

BY: IRENE JAGLA,  
CONTENT MARKETING MANAGER



**UNIQUE IN THE ANNALS** of aviation history, the carrier-based Grumman F-14 Tomcat flew with the U.S. Navy from 1974 to 2006, and it is still used by Iran's Air Force. The F-14 was originally designed to be the lynchpin of the U.S. Navy's Outer Air Battle Concept and to prevent a Soviet bomber force equipped with Tupolev Tu-22 Backfires from destroying a carrier battle group. With the Soviet Union's dissolution in 1991, the Backfires were no longer a threat, and by 2006, the Tomcat was replaced with the F/A-18 E/F Hornet.

Despite the Hornet's general popularity, many aviation experts yearn for the return of the Tomcat—especially since Russian Su-30SM and Chinese J-11D and J-15s pose a serious threat to the Hornet fleet.

If you're one of the many who miss the Tomcat's reliability, or just want to discover why it's such an icon in aviation history, here's what three Tomcat pilots have to say about their experiences flying this incredible jet.

**HERMON COOK**

Before flying the F-14 Tomcat, Cook had never been in an aircraft larger than an A-4. "It was amazing going from a 10,000 lbs. plane and stepping into a 64-foot wide, 60,000 lb. jet," Cook said. As a photo reconnaissance pilot, Cook remembers that the photography equipment, TARPS (Tactical Airborne Reconnaissance Pod System), added about 1,700 lbs. to the plane. Cook and his crew lovingly referred to it as "the turd." Even though Cook spent the last three years of his career flying Hornets, he liked the F-14's speed, size, range, and capabilities in a multi-mission role. "In the Hornet, I was always

worried about fuel, but with the Tomcat, I knew I would be fine with how much fuel was on board," said Cook.

**LARRY MUCZYNSKI**

Larry "Music" Muczynski served from 1972 to 1996 and was a member of the Black Aces, and he also fought in the Gulf of Sidra in 1981. As someone who never flew an airplane until he entered the Navy, Muczynski recalled that he was under even more pressure due to the kind of plane he was flying. As the Navy was transitioning out of F-4 Phantoms, "it was a big deal to get the Tomcat," he recalled.

His experience with the Tomcat is intertwined with his first time living on a nuclear-powered aircraft carrier, the *USS Nimitz*. He recounted the pros and cons of living on this massive city at sea. "The thing about nuclear-powered aircraft carriers is that you have a great big flight deck and the air conditioning works all the time; and, it can carry 3.5 million gallons of jet fuel, so you can fly a lot." The most notable negative aspect? "The food!"

**ASAD ADELI**

As an elite pilot in the Islamic Republic of Iran Air Force, Adeli was one of the few chosen to fly the F-14 Tomcat in 1977. He was lucky because everyone wanted to fly the F-14. "It was the Cadillac of planes," he recalled. "Huge seats, air conditioning; a real capable, luxury aircraft."

From 1980 to 1988, Adeli flew during the Iran-Iraq War and had his first engagement on January 7, 1981. It was late in the day when his patrol over Iraq detected low-level fighters coming from Iraq to Kharg Island.

Adeli was ordered to shoot them down, but he ended up doing something extraordinary: shooting down three Iraqi MiG-23s flying in close formation with only one AIM Phoenix missile. Shortly after, the AIM Phoenix stockpile was running low, so the Iranian military retrofitted a SAM to be an air-to-air missile.

**DID YOU KNOW?**

These pilots' experiences with the Tomcat show how popular and well-loved this aircraft really is. But, there are some facts about the plane you may not know.

- Pilots nicknamed the F-14 "the turkey" because of all its moving parts, like the flaps on its variable sweep wings.
- The Tomcat could carry six Phoenix missiles at once, but this usually only happened for photo opportunities (like in the photo included here!) Because the missiles are so heavy, the plane managed much better with 2 or 3 missiles at a time, even during missions.
- It was very expensive to operate. At \$2,000/flight hour, pilots and crew had to be judicious with how often the Tomcat was used.

Along with these facts, Muczynski described the F-14 Tomcat as "the most complex first-generation airplane of its time. It's the first plane with 'track-while-scan' radar. It's the first plane ever that could track 24 targets, while the old F-4 could only do one target at a time."

*Previously published in the Museum's Blog. To read more articles like this, visit: [museumofflight.org/Blog](http://museumofflight.org/Blog).*

## Call for Writers Grades 2-8!

**CALLING ALL PADAWANS!** In honor of Star Wars Reads Day, the Museum will once again host the Empire Writes Back! writing contest. You tell us: In a galaxy far, far away did Darth Vader love chocolate chip cookies? Did Luke Skywalker not become a Jedi knight? Use your imagination and create your own fantasy. Stories must be the original work of the student. All students in grades 2-8 are invited to enter. **Entries must be submitted by Monday, Oct. 1, 11:59 p.m. PST. For entry form and contest rules, please visit [museumofflight.org/star-wars-reads-day](http://museumofflight.org/star-wars-reads-day).** Winning stories will be published in the Museum's blog and shared on social media! *Entrants must be present at the Museum during Star Wars Reads Day on Oct. 13 (page 18) to be eligible to win.*

Answer key to Junior Aviator Word Search on page 19.



**Thank you to our community partners for their continuing support!**





POWER OF GIVING

VERN RUTLEDGE



COURTESY OF THE ABRAMSONS

▲ ABOVE: The Abramsons, Randa and Jonathan.  
LEFT: The female staff at the Museum in 1984, Randa can be seen on the far right with long-time Museum staffer, Alison Bailey (back row, center).

# Gratefully Honoring the Past

BY: SANDRA DOLESE, CFRE, CSPG, PLANNED GIVING OFFICER

**WHEN RANDA AND JONATHAN MET**, they were surprised to learn that aviation was one of their shared interests.

Randa was a member of the Museum’s fundraising campaign staff to build the T.A. Wilson Great Gallery from 1984 to 1986. And, because she worked closely with Alison Bailey—one of the Museum’s longest-term employees—Randa is designating her Legacy Challenge matching gift to honor Alison and their work together.

Today, the Abramson’s have a consulting firm, avenue2possibilities LLC, serving nonprofits in Seattle and Portland. The chance to earn a \$5,000 donation for the Museum grabbed their attention when Randa and Jonathan were updating their wills after the birth of their grandson. They wanted to provide for charities and chose to include The Museum of Flight.

The Abramsons are impressed with the impact Museum programs are having on youth and each have personal connections to the Museum.

Randa’s father was an aeronautical engineer, working with gyros, guided missiles, and on the Manhattan Project. With Randa’s nonprofit work she recalls, “The Museum of Flight was the only fundraising project my father understood.” Her son echoes that sentiment. When asked what his mother does, he says with pride, “Mom helped build The Museum of Flight.”

Jonathan, Randa’s husband, says “In addition to being proud of Randa for walking out on a wing to build the Great Gallery, I’m making a ‘gratitude gift’ for the team that did the fundraising, for Howard Lovering and Alison Bailey and all the people that made it happen.”

Jonathan’s father was also involved in aviation. When all his buddies were being drafted into the Korean conflict, Jonathan’s dad opted to become a “flyboy.” After flight training at age 18, he was assigned as a B-29 turret gunner. His Air Sea Rescue squadron flew out of Guam in B-29s equipped with boats in the bomb bays. On Jonathan’s first visit to

the Museum with his own son, they found themselves in the midst of a reunion of B-29 crew members. It was a special moment, seeing veterans—men just like Jonathan’s father—reuniting and remembering.

On another visit to the Museum, Jonathan toured the Aviation Pavilion and saw the Museum’s B-29, *T-Square*. “It’s a pristine renovation of a plane similar to the one my father and his crew mates spent two years of their young lives flying rescue duty in.”

By planning their future gifts, the Abramsons will make an impact that wouldn’t have been possible during their lifetimes. Randa and Jonathan are proud to be part of sustaining the Museum for generations to come.



The Museum Day ticket provides free admission for (2) two adults, youth or seniors to participating museums and cultural institutions across the country.

To download your ticket, visit: [smithsonianmag.com/MuseumDay](http://smithsonianmag.com/MuseumDay)

## Tribute Gifts

### In Memory

**In memory of Peter G. Anderson**  
*Bruce R. McCaw Family Foundation*

**In memory of Peter M. Bowers**  
*Anonymous*

**In memory of Stan Brewer**  
*Marialee Brewer*

**In memory of Moe Buringrud**  
*Dana Dilgard*

**In memory of Albert J. Buscio**  
*Patricia Drummond*

**In memory of Paul (Bill) V. Byrne**  
*Jody Byrne*

**In memory of Joseph L. Corvi**  
*Joanne and Joel Rossetti*

**In memory of Daniel J. Daley**  
*John M. and Nancy D. Daley*

**In memory of Richard (Dick) H. Fleischer**  
*Paula Clark*

**In memory of Bruce E. F. Foster**  
*Bob and Sally Curnutt*

**In memory of Francois (Frank) J. Ghosn**  
*George and Karolyn Ghosn  
G. William and Marjorie McCutcheon*

**In memory of Gerald B. Hankins**  
*Michael and Marion Fukuma*

**In memory of Charles Latta**  
*Virginia and Joseph Curulla*

**In memory of Jane Brown Marich**  
*G. William and Marjorie McCutcheon*

**In memory of George P. Novotny**  
*The Novotny Wealth Defender Trust*

**In memory of Harold F. Olsen**  
*Alison Bailey  
Boyd and Ann Givan  
Thomas and Ginny Riedinger  
Kelly and Maggie Taber  
Laura Tenisci*

**In memory of James T. Pitts**  
*Mark Pitts*

**In memory of John (Jack) F. Rasmussen**  
*The Thornton Family*

### In Honor

**In honor of All those who served in the Vietnam War**  
*Rosemary A. and Larry J. Brester*

**In honor of The Boeing team that designed, built and supported B-52s**  
*Frederick and Margaret Anderson*

**In honor of Hal Breier**  
*Open Square*

**In honor of Robert E. Dannenhold**  
*Roberta Warren*

**In honor of Pat DeRoberts birthday**  
*Susan Hettinger and John Brottem*

**In honor of The Detail Mafia**  
*Marlene Taylor Houtchens*

**In memory of Richard Rich**  
*Robert R. Rich*

**In memory of Kenneth B. Wallace**  
*Nancy Wallace*

**In memory of Eugene O. White, III**  
*Susan White*

**In memory of Arnold O. Wolf**  
*Thelma Wolf*

**In honor of EAA SportAir Workshops**  
*Experimental Aircraft Association (EAA)*

**In honor of Don J. Ferrel**  
*Matthew and Bridget Ferrel*

**In honor of Matt Hayes**  
*Carrie and Theren Hayes*

**In honor of Andrew Kudlak**  
*Dennis Newton*

## In Memoriam

William J. Bain  
Stella M. Bass  
Michael E. Biller  
Donald W. Boitano  
Robert J. Bradley  
Albert J. Buscio, Jr.  
Donald S. Byington  
James L. Chapman  
Wayne S. Clark  
Steven L. Conrad  
Michael Custance  
Allan F. Damp

June K. Edwards  
Daniel M. Esterly  
Francois J. Ghosn  
Shirley L. Haines  
Terrence J. Heil  
Matthew Holt  
Henry W. Huntsman  
Margaret A. Konigson  
Mary E. Lanfear  
Wyndall F. Loyd  
Jane B. Marich  
E. Lamont McDonald

Michael P. Miller  
Jack H. Mitchell  
Roy E. Mock  
Karen A. Nelson  
Newton P. Nelson  
Tami R. Olsen  
Louise K. Paulson  
Wallace J. Pesznecker  
Robert J. Ryan  
Dale A. Searcy  
Michael F. Shanahan  
Neal L. Shively

Craig D. Simcox  
E. Kenneth Solid  
Harold E. Stack  
Douglas D. Stewart  
Robert Stinogel  
Norman G. Stromer  
Andrew D. Tweeddale  
John R. Villevik  
John N. Wasson  
Fran K. Weiss  
James F. Weymouth  
Joye E. Wyckoff

THE MUSEUM OF FLIGHT FOUNDATION  
9404 East Marginal Way South  
Seattle, WA 98108  
206.764.5720 | museumofflight.org

**Encourage  
& support  
young women  
in aviation  
and space!**

# **2019 A.M. FLIGHT BREAKFAST**

**Friday, November 8, 2019**

**7:30 to 9 A.M. | The Museum of Flight**

**Doors open at 7 A.M.**

Join us for a free breakfast under the Blackbird and be our partner in championing the next generation. You will hear from Dr. Sara Mazrouei, planetary scientist and advocate for women in STEM.

A donation is requested at the event to support educational programs at The Museum of Flight. Please consider making a gift, so students can enjoy hands-on learning in the largest educational air and space museum!

**To save your seat,  
visit [museumofflight.org/AMFlight](http://museumofflight.org/AMFlight)**

**KEYNOTE SPEAKER:**

**DR. SARA MAZROUEI**

Planetary Scientist and advocate for women in STEM

**Interested in sponsoring this event?**

Contact Mary Batterson, Corporate Partnerships Officer  
at 206.764.5879 or MBatterson@museumofflight.org

