NOTE: In our May/June 2018 issue, there was a typo in the May Calendar on page 17. The Memorial Day Ceremony start time was 11 a.m., not 2 p.m. as stated in the listing. We apologize for any inconvenience.
THE MUSEUM’S ACCOMPLISHMENTS of the past couple of years—in collections, exhibits, education, and more—have been exhilarating. And from a photographic perspective, it is hard to rival additions like the vast expanses of the Aviation Pavilion or the soaring majesty of SpaceShipOne reflected in the windows of the Charles Simonyi Space Gallery.

When we installed the giant sub-scale F-1 engine in the Apollo Gallery in 2017, we expected it to be a photographer’s favorite. And it has been. But during the same time we had another installation: about 16,000 pounds lighter and sitting outside. Standing all of 3 feet tall, this statue of a young girl flying a 747 model quickly became one of our most photographed items. Among all our stunning exhibits and historic aircraft, this little monument has visitors lining up for photos during our busiest days.

For me, this rendering on a simple concrete pedestal and often dripping with rain is an everyday reminder that even the smallest gestures of inclusion can have a huge impact. We say we want to help everyone to follow their dreams to be an engineer or an astronaut or a pilot, but it’s even more important to show this. This bronze statue of a small girl with dreams of flight reflects the important work being done by Museum mentors and volunteers who are working to introduce underrepresented communities to the wonder of flight. This statue also reflects the stories we choose to tell and the heroes we choose to highlight. These examples of inclusivity are integral to being sure we can truly welcome, teach, and learn from all.

A very special thank you to the men and women of Northwest Airlines, to whom the statue is dedicated, and the artist, Nick Legaros, who donated it.

Cheers,
Matt Hayes, President and CEO
"AK" THE CODE

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

What's new in the collection?

BY: CHRISTINE RUNTE, REGISTRAR

Toward the end of World War II, Boeing began looking at other products that it could build besides aircraft. Some of these products were so secretive, they were developed at “Boeing’s hidden cave.” According to Carl Cleveland’s book, Boeing Trivia, chief engineer Ed Wells selected a special group of engineers to send to an off-site office, referred to as “the cave” to design any type of product other than aircraft. This eggbeater with a pistol grip was a result of one of the team’s brainstorming sessions in that offsite location. Most of the products that they dreamed up, however, did not go into development. The eggbeater was acquired by Jack H. Caldwell some time during his career at Boeing. Jack Caldwell began his career at Boeing during the 1950s as a mechanical engineer in the Boeing Turbine Division and retired from the 777 program after a 40 year career. This eggbeater has been in the Caldwell family for over 40 years. Ed Caldwell is the son of Jack H. Caldwell.

Q: AT THE BEGINNING OF WORLD WAR II, WERE THERE MORE AMERICAN WOMEN WITH PILOT’S LICENSES THAN WITH DRIVER’S LICENSES?
A: Not sure where this question came from, but you can definitely hear glasses clinking in the background, which means it’s a job for Bruce Flosheim, the ace of our research team. Bruce found that, according to Molly Merryman, Clipped Wings: The Rise and Fall of the Women Airforce Service Pilots (WASPs) of World War II, there were 2,000 American women with pilot’s licenses in 1941. By contrast, Public Roads: A Journal of Highway Research and Development, Vol. 37, No. 5), states: “The users of the [American] highway system in 1940 were submitted by Khai Tang, age 4.

Q: WHY CAN YOU SOMETIMES SEE THE MOON DURING THE DAY?
A: The Moon orbits the Earth, the Earth spins, the Moon is typically above the horizon for about 12 hours a day and below the other 12 hours. Right now, in the middle of the summer, the Moon is about 12 hours long, so the Moon will always be above the horizon and can be visible for at least part of the daytime. When the Earth’s face is in its new Moon-release, it is too close to the Sun in the sky during the day to see. During a full Moon, it’s opposite the sun, and so usually only visible at night. But when the Moon is midway between these cycles, the side facing Earth is bright enough to be seen for part of the day, but the Moon is far enough from the Sun so as not to be overpowered by the Sun’s light.

Q: WHAT DO THE LETTERS "AK" MEAN?
A: In the United States Air Force, the two-letter Tail Code normally indicates the Wing which an aircraft belongs and where that Wing is based. For example, a B-52 with "MT" on its tail is based at Minot Air Force Base, North Dakota, whereas a B-52 with "LA" on its tail is based at Barksdale Air Force Base, LA. In 1967, the Museum’s Phantom was assigned to the 366th Tactical Fighter Wing’s 389th Tactical Fighter Squadron. At that time, the USAF was just beginning to use Tail Codes, and the 389th TFS assigned a unique Tail Code to each airplane within the squadron. The 389th’s Tail Codes all began with the letter “A,” with the second letter designating the individual airplane within the squadron. Thus, “AK” indicated “389th TFS, eleventh airplane.” In 1972, the USAF began assigning Tail Codes to Wings, not to Squadrons or individual airplanes.

Q: THE CODE FROM THE Airforce Service Pilots (WASPs) of World War II, AND GEOFF NUNN, ADJUNCT CURATOR FOR SPACE HISTORY
Without them, The Museum of Flight would most certainly not be the world-renowned institution that it is today, and we cannot thank them enough for all that they give. So, thanks again, volunteers, for all you do and for your continued support in ensuring that the Museum will continue to grow and prosper in the future!

The Volunteer Services Department thanks the following organizations for their contribution and continued support in making events like the annual Volunteer Recognition Dinner possible:

- Northwest Railway Museum
- Museum of Glass
- Burke Museum
- LeMay-America’s Car Museum
- Historic Flight Foundation
- Lakewold Gardens
- Seattle Aquarium
- LeMay Family Collection Foundation
- Wing Luke Museum
- Pacific Science Center
- Flying Heritage and Combat Armor Museum
- Bellevue Arts Museum
- The Center for Wooden Boats
- Randy’s Diner
- Washington State Historical Society
- Northwest Trek Wildlife Park
- Seattle Art Museum
- Nordic Museum
- Henry Art Gallery
- McCormick & Schmick’s
- The Museum of Flight Staff

IN LATE AUGUST 2017, I WAS HONORED to join the Volunteer Services Department at the Museum. Since that time, I have become more familiar with the large volunteer and with community here, with each volunteer I meet, I am always impressed by their dedication, enthusiasm, and passion. From our docents, gallery ambassadors, and pavilion ambassadors, who make each and every visitor feel welcome; to our restoration volunteers, who ensure that every aircraft in our collection looks like it just rolled out of the factory; to our docents, gallery ambassadors, and pavilion volunteers, who assist in documenting and preserving the Museum’s countless artifacts. Our volunteer corps is one of the Museum’s most valuable resources. They range in age from 14 to 96 and donate their time, service, and expertise to every department, from Accounting to Marketing.

On May 13th, Volunteer Services held its annual Volunteer Recognition Dinner. Over 400 volunteers and their guests dined beneath the Blackbird to enjoy a well-deserved thank you in celebration of their enormous awards for service ranging from 200 hours to over 10,000 hours! Together, these volunteers gave over 99,200 hours of service in 2017.

HONOYING OUR Volunteers

BY: BECCA HARMSEN, VOLUNTEER SERVICES SPECIALIST

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We all know and love them: the Blue Angels soaring in perfect precision above crowds of adoring fans. But who are the pilots who fly these planes, and what’s it like preparing for show day? I had the pleasure of talking with one of them, Navy Lt. Tyler Davies, #5 Lead Solo who is in his third and final year with the Blue Angels. He filled me in on his history, what happens on show day, and the best parts about being a Blue Angel.

I want more out of this

Eighteen days after high school graduation, Davies joined the Navy and became an aviation electronics technician. He worked on F-14s, F-18s, Prowlers, C-130s, E-2s and C-2s (among others). After multiple deployments as an enlisted sailor, Davies realized that he wanted more out of his Navy career and reconnected with his dream of being a pilot. While he was stationed at Point Mugu in California, Davies talked to his distance learning advisor who told him that he had to obtain a college degree before taking his place in the pilot’s seat.

Davies took on a demanding schedule to get his college degree in two years: working from 7 a.m. to 4 p.m. and taking classes from 5 p.m. to 10 p.m. from Monday through Friday. How did he get through it? “Work smarter, not harder,” Davies says.

Even with his hectic schedule, Davies assembled an officer program package and was selected for flight school, where he practiced on the Cessna 172, the T-34C and the T-45C. He finally achieved his goal of being a pilot on an aircraft carrier, the USS Carl Vinson in 2011, before becoming a flight instructor. All of his hard work paid off: in 2015 he was selected for the ultimate flight demonstration team—the U.S. Navy Blue Angels.

Pre-show rituals

Just because Davies has reached his dream doesn’t mean that his work ends. His days are still incredibly busy, and they usually begin at 5:30 a.m. “Mornings vary for each Blue Angel pilot depending on his or her position,” says Davies. “But as the Operations Officer for the team, I have to manage 35 different shows each year simultaneously. I usually start each day with email to make sure I answered everyone’s questions so the show can go off without a hitch.” After attending to his inbox, Davies grabs coffee and a light breakfast before heading to the gym where he focuses on legs, abs and upper body exercises to combat those g-forces.

On-site preparation

After Davies completes his routine, he joins the rest of the team in a police-escorted caravan to the show site. To ensure that the crowds don’t have to wait for the show to start, the team plans ahead for traffic and manages travel times accordingly.

Once the team arrives on site, the pilots get into show mode: “That’s our compartmentalization time frame,” Davies explains. “No matter what’s going on—stuff at home, bills, or the car is broken, or you didn’t sleep well or whatever—that hour allows us to clear the mechanism per se. It’s time to really focus on the flight.”

From there, the team signs the aircraft discrepancy book for the aircraft and completes all the paperwork necessary to get the demonstration going. Before showtime, the support officers talk with the show coordinators, making sure that the airspace is sanitized.

Before taking to the skies, though, the crew considers the weather conditions and adjusts plans accordingly. “It boils down to where the clouds are,” Davies says. “If the clouds are up high, then we can do a full high show. If the weather degrades, lower and lower, then we have different shows that we would do based on how much vertical up or altitude we have available.”

Post-show routine

After the show, the pilots go directly to the crowd line for autographs, followed by an intense hour and a half debriefing where they dissect and analyze every mistake—even the ones that the spectators don’t see. But there are some tell-tale signs of a screwup if you’re watching closely. “If someone turns their smoke off during a maneuver, a lot of people think that there’s something wrong with the smoke, but that’s us calling ourselves out saying we’re out of position. We will not turn our smoke back on until we get back in position. That’s the level of professionalism that we hold ourselves to.”
THE U.S. NAVY FLIGHT DEMONSTRATION SQUADRON, THE BLUE ANGELS, FLY IN FORMATION OVER LAKE WASHINGTON DURING SEATTLE'S 68TH ANNUAL SEAFAR FLEET WEEK.
(U.S. NAVY PHOTO BY MASS COMMUNICATION SPECIALIST 2ND CLASS JACOB G. SISCO/RELEASED)
AN EVENING WITH THE BLUE ANGELS

Once the debrief is complete, the team attends community events in the afternoon and evening where they showcase what the Navy and Marine Corps are all about. Davies sees these events an opportunity to connect with younger audiences. Although he’s there to inspire kids to achieve their dreams, Davies is just as inspired by the interactions he has with his young audiences. “When I ask them ‘What do you want to be when you grow up?’ I get the most amazing answers,” Davies reveals. “They say ‘I want to be an archaeologist! A marine biologist!’ I didn’t have any of those answers at that age. And it doesn’t matter where we go—you can be in a rural town or a big city—the children are so inspired.” These conversations have shown Davies that when an adult looks a child in the eyes and says they believe in his/her potential, that child becomes much more motivated to pursue his or her dreams.

THE MIRACLE WORKERS

But kids aren’t the only ones who inspire Davies in his work as a Blue Angel. As a former aircraft technician, Davies appreciates the difficult work of the maintenance crews, who he describes as miracle workers. “We have people all over the country who are flying to get parts, or getting an engine, and working around the clock to fix the jet that broke down half way through the flight.” Their tenacity in tackling seemingly insurmountable technical challenges enables the Blue Angels pilots to do their jobs. Davies adds that the maintenance crew’s commitment shows that the Blue Angels are, in his eyes, the greatest organization in the world. “If you can model what this team does on a daily basis, any organization is guaranteed success.”

SO YOU WANT TO BE A BLUE ANGEL?

The team is currently in its applicant season for 2019 and applicants follow the team to show sites to get a feel for where they might fit into the organization. In selecting new recruits, the Blue Angels consider the applicant’s reputation for safety and run some personality tests of their own to see how someone’s temperament will mesh with the team. Personality is a huge portion of the teams success. “Calm, cool and collected is always going to prevail,” Davies advises. “If you have a hothead on the team or if you are always on the defense, that’s going to create a bit of conflict. Then, throughout the season, that little bit of conflict can turn into bigger problems.”

As appealing as it may sound to wear the blue and gold suit and fly a jet, it doesn’t make for a lifelong career. Blue Angels are only hired for two or three-year stints before they cycle back into the Navy or Marine Corps. This strategy ensures that when people see the Blue Angels fly, they’re always seeing the most current representation of the Navy and Marine Corps pride and professionalism.

Your Destination for All Things Blue Angel

Blue Angels Inflatable $7.95
Blue Angels Nylon Kite $26.95
Seafair Skipper Pin $6.00
Seafair Flying High Chocolate Tin $8.95
Blue Angels Flying High inflatable $7.61
Blue Angels Flying High inflatable $6.75

For all things Blue Angels online at MuseumofflightStore.org OR
Museum Store

Top: Lt. Tyler Davies Narrates a Practice Demonstration (U.S. Navy Photo by Mass Communication Specialist 2nd Class Daniel M. Young/Released)
Bottom: Aviation Electronics Technician 1st Class Blake Much Straps Solo Pilot Lt. Tyler Davies into His Jet (U.S. Navy Photo by Mass Communication Specialist 2nd Class Ian Cotter/Released)
Page 11: Aviation Ordnanceman 1st Class Brandon Bates Prepares Lead Solo Pilot Lt. Tyler Davies for Launch (U.S. Navy Photo by Mass Communication Specialist 2nd Class Juss Gray/Released)
A Class Act in Aviation History

BY: DAN HAGEDORN, CURATOR EMERITUS

MUSEUM MUSINGS

From the Archives: A Class Act in Aviation History

Since I retired in May 2016, I have been assisting our wonderful Collections Department Archives Team in processing the collection of one of our founders—and my own personal hero—the late Peter M. Bowers (Accession 2008-3-31).

We have completed most of the huge photographic print series and made a good start on the correspondence series. Pete appears to have known everyone and the dates in the series range from 1945 to the very month of his last flight, in early 2003. To say that it has been educational is an understatement, and the sheer breadth of his knowledge of aviation history, generosity, and modesty in the face of what was obviously a worldwide following has been evident throughout this process.

But in March, we came across a package mailed to him from Raymond W. Moffitt, who, as of March 27, 1968, had been a fifth grade teacher at the McKinley Elementary School in Olympia. Mr. Moffitt was clearly an extraordinary teacher and he appears to have been an active member of the Pacific Northwest Aviation Historical Foundation (PNAHF) at the time as well, the organization from which the Museum evolved.

In his letter, Moffitt reminded Bowers of the chain they had shared regarding what he was trying to bring to his students, and asked for Pete's help with a new project, which was being labeled "PASST—Famous Aeo-Space Struggles & Triumphs."

The teacher and his fifth graders—34 boys and girls—had written these days, but Bowers found the time to make the tape, much to the gratification of the boys and girls at McKinley, who sent him a personalized "Thank you" for his efforts.

The introductory exchanges on the recording pretty much say it all:

[Peter Bowers]: "O.K.,...you sky-happy McKinley pilots...it's getting down in flying position on our stomachs! I'm Mr. Pete Bowers of the Boeing Airplane Company to say that the pilots, I mean the EARLY pilots, laid down to control their airplanes."

[Sam, a Student Actor]: "Great guy wires and warped wings! I'm not going to get into that thing laying down!" [a picture of the Wright Flyer is projected on the screen as the tape rolls]

The rest of the script is more of the same and, based on the letter from Moffitt, Bowers really got into the act and had fun with the kids.

And there were five separate scripts that followed: one about the first flight around the world in 1924; one about Jimmy Doolittle; one supposedly with Amelia Earhart’s sister, Muriel; another with balloonist Jeannette Piccard from NASA in Houston; one with a Cessna executive; and one with Roscoe Turner.

The series gained the attention of the National Aerospace Education Office (NAEC) in Washington, DC, which featured their project in its newsletter for January 1968.

These students, probably 11 years old in 1968, would be grandparents by now and maybe, just maybe, some are Members—who recall with a smile their corny STEM lessons of 50 years ago, and a legendary aviation historian who helped bring it all to life for them.
**CALENDAR OF EVENTS**

### August

**SPECIAL EVENT**
Jet Blast Bash Seafair Celebration
The Museum celebrates Seafair and the Blue Angels at our annual Jet Blast Bash. The Museum becomes the backstage of the Boeing Seafair Airshow for this 2-day event. Watch the airshow performers come and go while enjoying outdoor family activities, live music, food and drink. Special guests include SR-71 pilot and author Brian Shul. Make the Museum your aviation destination for Seafair!

**SPECIAL 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 Great Gallery, Personal Courage Wing, Simonly Space Gallery, Aviation Pavilion and more from 5 to 9 p.m., courtesy of Wells Fargo. The Museum Store and Wings Café will also remain open for extended hours.

**MUSEUM-WIDE**
**Saturday, August 4 | 5 to 9 p.m.**
**East Parking Lot**
Saturday and Sunday, August 4-5 10 a.m. to 4 p.m.

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

**FILM SCREENING**
**Vietnam Film Series: Full Metal Jacket**
To support the new Vietnam exhibit and "Project Welcome Home," we continue a summer film series that explores the Vietnam War. An introduction to each film will be provided by a Vietnam veteran from the Distinguished Flying Cross Society. Other films in this series include We Were Soldiers. All movies rated R.

**WEEKEND FAMILY WORKSHOPS**
**Phases of the Moon**
The Moon is our closest celestial neighbor. Learn how the moon changes its appearance throughout the month and then make a craft showing its 10 major phases.

**T.A. WILSON GREAT GALLERY**
Saturday and Sunday, August 11-12, 18-19, 25-26 11 to 11:45 a.m. and 1 to 1:45 p.m.

**Summer Family Fun**
Aviation and aerospace activities, stories, and crafts for the whole family!

**T.A. WILSON GREAT GALLERY**
Saturday and Sunday, August 7-24 10:30 a.m. to 3:30 p.m.

**Aviation Pavilion**
**Maker Hangar**
Be sure to stop by the Maker Hangar in our Aviation Pavilion for hands-on activities. Learn about 3D printing, circuits, drones, soldering, and more!

**Every Day in July & August | 10 a.m. to 4 p.m.**
Excluding August 4-5 during Jet Blast Bash.

**TOY FROM THE COLLECTION**
**Little Lockheed SR-71**
In celebration of Jet Blast Bash and Seafair, here is one of the Museum’s tiniest toys! This Little Lockheed SR-71 toy is made of metal and is just a little over two inches long—that’s 1/1000th of the size of the real thing! If you look closely, what makes this toy unique is that is actually a MD-21 Blackbird, just like ours in the T.A. Wilson Great Gallery! Mounted on the back of the M-21 is a D-21 drone, just like ours, but painted silver. There are three wheels that turn on the bottom, so this miniature jet can taxi across the floor. This tiny toy was donated to the Museum in 1991 by an anonymous donor.

**SCHOLASTIC BOOKS**
**Aloft**
How do you get to be a fighter pilot? If you’re excited to see the Blue Angels and dream of your own flying career, then Fighter Planes is the book for you! Available in our Museum Store and online at museumofflightstore.org.

**BLUE ANGEL MANEUVER WORD SEARCH**
**Blue Angel Maneuver Word Search**
Can you find them all? Words go up, down, and backwards. Answers on page 21.
WHEN THE NIGHT SKIES ARE CLEAR AND the warm air beckons, it’s the perfect time for star gazing, or for you more adventurous types, keeping an eye out for unidentified aerospace phenomena (UAP). If you’re inclined to explore the night skies in search of answers about what’s really out there, Lynnwood-based researcher Jacob Hiatt has some advice for you.

For the past two years, Hiatt has completed over 40 investigations with the Northwest UAP Studies Group, a local chapter of a global initiative called The Unidentified Aerospace Phenomena (UAP) Observations Reporting Scheme, which facilitates the reporting and collecting of UAP sightings. Inspired to pursue more in-depth study of UAP after some of his own personal experiences, Hiatt assembled a crew of fellow investigators and collaborators to gather more evidence of what he believes to be intelligent life from other places in the galaxy.

"UAP is not your grandmother’s ‘UFO,'” Hiatt explains. "UAP is more of a current, scientific term. The phenomena that Hiatt and his crew witness are not metal saucers with photographic evidence of UAP, ‘a style of craft that has been documented so far as we can go back’.” He has developed a few hypotheses about UAP characteristics and their purpose. UAP are most likely plasmatic craft and deploy a photon or light-based propulsion system to travel. Since most of the universe consists of plasma, it’s possible that UAP are siphoning off this energy to power their visits. For Hiatt and his investigators, the plasma theory explains another observable characteristic of UAP: they don’t reflect light, which means they cannot be metallic.

So what are the origins of UAP? It’s likely that they are drone-type machines from other areas of the galaxy, either programmed to complete specific maneuvers or controlled by a source in their home galaxy. If this seems far-fetched, consider that the space exploration group Breakthrough Initiatives launched Starshot in 2016, a $100 million dollar research program with the goal of launching light-propelled spacecraft to Alpha Centauri to seek scientific evidence of life beyond Earth. Keep in mind that Stephen Hawking endorsed Starshot, and the New Space industry is making waves each day, with Blue Origin and SpaceX launching rockets and payloads into space. In light of these developments, Hiatt observes that “if we found a planet that has civilization and intelligent life, and we could send something to go take a peek at that, we would do it tomorrow. Curiosity is universal, and we’re a big curiosity on their [UAP] part.”

Currently earning his Bachelor’s degree in Education with a focus in planetary science, Hiatt emphasizes that he is not a conspiracy theorist. In fact, he’s tried partnering with some established UFO groups but was disappointed in their focus on past sightings and self-promotion. “I don’t buy flying saucers. I don’t buy alien abductions, and I don’t buy Bigfoot,” says Hiatt. In his quest for more concrete evidence of UAP, Hiatt is planning a weather balloon launch experiment that will gather real-time data about what may be getting captured on his thermal cameras.

And he’s not the only one having these experiences. In March 2018 the Washington Post published a story about an F/A-18 fighter pilot witnessing a tic-tac shaped craft flying across his course on the East Coast. This report came in the wake of the widely publicized release of the Pentagon’s Advanced Aviation Threat Identification Program, which ran from 2007 to 2012 to study unidentified flying objects.

With these recent reports coming to light, Hiatt feels emboldened to pursue his next project: a documentary that outlines his experiences with UAP and his theories on what they are. He is currently in talks with planetary science experts at Harvard University who will review his footage and offer their own evaluations. Hiatt’s goal is to distribute the documentary to as many viewers as possible. "I would love for someone to tell me that what I’m seeing is not what we think it is.”

SOLUTION FOR JUNIOR AVIATORS WORD SEARCH

MARS INSIGHT
back to the red planet

NASA’S NEXT MARS LANDER, CALLED INSIGHT, launched from Vandenberg Air Force Base north of Los Angeles, California early on the very foggy morning of May 5. It was the first planetary mission launched from the West Coast, and the lander was carried into space aboard a United Launch Alliance Atlas 5 rocket.

InSight, which is short for Interior Exploration using Seismic Investigations, is currently in the middle of its cruise to Mars. The spacecraft is scheduled to land on Mars’ Elysium Planitiae in November. Once on the ground, InSight will use subsurface probes to study Mars’ interior. InSight will use a seismometer to listen for earthquakes and a heat probe to measure how heat emerges from the planet’s core to the surface. NASA describes the mission as giving Mars a checkup—taking its pulse and temperature. InSight is accompanied on its flight by the first two interplanetary CubeSats—tiny spacecraft officially called MarCO A & B (for Mars Cube One). The MarCO spacecraft, nicknamed for the Pixar characters Wall-E and Eva, will fly past Mars and act as a communications relay for InSight during landing.

ON MAY 26TH, 2018 the Museum held the official ribbon cutting and opening for the new exhibit Vietnam Divided: War above Southeast Asia in the T.A. Wilson Great Gallery. In attendance were Vietnam veterans and their families, as well as docents, volunteers, and staff who helped create the exhibit.

The Museum’s Executive Director, Matt Hayes, gave an introduction to the new exhibit followed by talks from Chris Mallander, director of exhibits; Peder Nelson, exhibit developer; and Capt. Paul Bloch, Museum docent and a member of the Vietnam Exhibit Committee. The ribbon was ceremoniously cut, opening a new chapter in the Great Gallery’s first 100 years of aviation story. The new permanent exhibit highlights the Museum’s collection of aircraft and artifacts interpreting the technology and tactics used during combat air operations in the Vietnam War.

DID YOU KNOW...

Our Blue Angel, Holly, was delivered to us without engines or afterburner nozzles (turkey feathers). Those feathery metal tubes are very distinctive parts of the plane, so a new set was fabricated by a craftsman on the East Coast. They were made to be fastened to the engine cowl though, so our clever volunteers including Tom Elliott, Fred Morrison and Dennis Dhein improvised some new attachment points inside of the fuselage—a job that required some contortions in the plane’s cavity.
YOUNG PHIL CONDIT WAS FIRST INSPIRED to pursue aviation after witnessing a magical moment at the San Carlos Airport: his grandfather, at the bright age of 60, taking his first flying lesson in a Piper Cub. This moment galvanized a future Pathfinder to a career that culminated in leading a major aviation company committed to safety, culture and quality. It also set a pattern of lifelong learning, harvesting experience from one event to inspire how to approach the next.

Phil's infatuation with aviation matured from papering a PanAm route map on his bedroom wall, to flying lessons at age 15 and earning a private pilot certificate. He completed a degree in Mechanical Engineering at UC Berkeley and a Masters in Aeronautical Engineering at Princeton. At Princeton, he met Cortland Perkins, a professor and famous authority in aviation. Perkins became Phil's mentor and told him, "Get out of here. You need to make things." Condit took the advice and joined Boeing in 1965 starting as an aerodynamicist on the SST.

As a young engineer, Phil's managers and colleagues recognized exceptional technical and project management skills. These attributes resulted in an assignment as a 747 high-speed aerodynamics lead engineer in 1968, only three years after joining Boeing. In this role, he led the solution to one of the most vexing problems facing the 747's introduction into service: the wake vortex generated by the 747 on approach creating unsafe conditions for following, smaller aircraft. It was possible that the 747 might be banned from operations by some nations. Phil led the team that conducted an airplane test program using a 737 and negotiated an acceptable solution for all concerned. The result: operational practices that today still prevail using the designation "Heavy" to describe aircraft with significant wake vortices.

In 1973 Condit was offered a job in Boeing's marketing department, facing a decision that might make or break his career at the company. Despite advice from a top engineering executive that "if you leave engineering, you will never be allowed back," Phil accepted the offer and spent time on the Quiet Short Haul program and then in marketing management supporting 727 product innovation and sales campaigns. He came to realize that the breadth of the Boeing team was much larger in scale than any single person or function.

In 1974, Condit was selected for the prestigious Sloan Fellowship program at MIT, where he acquired a new appreciation of leadership and business practices that would later serve him well. He returned to Boeing as manager of new program planning and a year later became director of program management for the 707/727/737 division. In 1978 he was appointed chief project engineer of the new 757 program. This assignment was an opportunity to inspire a collaborative culture within the larger scope of the Boeing Company. He led the implementation of a common pilot type-rating for the 757 and 767 airplanes after a Presidential Task Force on Crew Complement delivered its finding that two-crew aircraft were as safe as three-crew.

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The Museum of Flight’s Annual Pathfinder Awards honors individuals with ties to the Pacific Northwest who have made significant contributions to the development of the aerospace industry.

BY THE 2018 PATHFINDER INTERNS: BRIGITTA NGUYEN, DAIME ROSS, AMRIT SINGH, AND BRAEDEN SWANSON

The Museum will honor these individuals at the 37th Annual Pathfinder Awards on Saturday, October 6, 2018. For details about the Pathfinder Awards Ceremony and Banquet or information on past recipients, visit museumofflight.org/Pathfinder.
TWO-TIME BOEING VICE PRESIDENT DENNIS O’DONOGHUE embodies the definition of servant leadership as a previous Marine Corps pilot, NASA and Boeing test pilot, and his impact on flight test engineering and corporate leadership has redefined the aerospace industry.

The eldest of seven siblings, O’Donoghue grew up on a farm outside of Pittsburgh with the freedom to explore both his nature and his own imagination. His father, Thomas O’Donoghue, emigrated from Ireland to the United States with little formal education, even less money, but a wealth of ambition. He eventually established his own farm, construction company and a successful restaurant business. His father’s strong work ethic would come to have a profound impact on O’Donoghue’s own career. From a young age, O’Donoghue remembers his captivation with flying. He recalls growing up with the excitement of the sparsely populated area he lived in and cómo he would sit under a plane if it flew over him. With goals of earning a degree in engineering and becoming a test pilot, he successfully pursued an appointment to the United States Naval Academy. O’Donoghue attributes much of his success to the Academy, which taught him the importance of prioritization, confidence in one’s abilities, trust, communication and discipline, and, he says with a smile, “the ability to rest under virtually any circumstances, acquired by sleeping under the deck of an aircraft carrier while an F-4 Phantom lanced.”

After graduating with a mechanical engineering degree, O’Donoghue flew in the Marine Corps for fourteen years, serving as a fighter pilot and instructor pilot on many aircraft types including the AV-8 Harrier. He attended Navy Test Pilot School and gained extensive experience in vertical and short takeoff/landing aircraft as an AV-8B Harrier II test pilot. In 2000, he left Boeing for a year to be the director and chief pilot for Eclipse Aviation. When he returned to BCA he became vice president of Flight Operations. In 2009, he was assigned the daunting task of integrating all laboratory and flight test activities in support of commercial airplanes, military aircraft and space programs, into one company-wide test organization which would become known as Boeing Test and Evaluation. The effort required the realignment of over eight thousand pilots, engineers, technicians and mechanics located across 92 sites in the U.S. and around the world. When he retired in 2017 he was vice president and chief engineer for Boeing Defense, Space & Security, responsible for the functional leadership of 22,000 engineers.

One day in 1996, O’Donoghue got a call from Boeing with an offer to be the chief test pilot for the X-32, the Short Take-Off and Vertical Landing Concept Demonstrator aircraft of Boeing’s Joint Strike Fighter program. Before accepting the position he researched the JSF program, but wasn’t sold. He was also offered opportunities testing Boeing Commercial Aircraft (BCA) jet transports. This offer produced a career-defining decision for O’Donoghue signing on to a company with broad product offerings in both civilian and military markets. He accepted the BCA job and then was loaned to the Defense & Space side of the company for the X-32 development program, where he was deeply involved in its design and development and led the flight-testing.

Flight-testing endowed O’Donoghue with many priceless lessons. As he says in a list of 10 things he learned from his flight test career, “If a design engineer tells you that a failure scenario ‘simply cannot happen,’ assume that it will.” A specific incident stands out in his memory: During a routine test flight of the X-32, a warning light illuminated informing him that the wheel brakes had failed. However, this was not the only problem affecting that flight. O’Donoghue had to land the plane with failing flight controls, a consequence of seemingly unrelated systems interactions. He landed successfully, overcoming a scenario that engineers said had a miniscule chance of occurring.

Following work on the X-32, O’Donoghue transitioned into BCA and was promoted to a leadership role as the deputy project pilot for the Sonic Cruiser and 787, and then as chief pilot of production flight test. In 2005, he left Boeing for a year to be the director and chief pilot for Eclipse Aviation. When he returned to BCA he became vice president of Flight Operations. In 2009, he was assigned the daunting task of integrating all laboratory and flight test activities in support of commercial airplanes, military aircraft and space programs, into one company-wide test organization which would become known as Boeing Test and Evaluation. The effort required the realignment of over eight thousand pilots, engineers, technicians and mechanics located across 92 sites in the U.S. and around the world. When he retired in 2017 he was vice president and chief engineer for Boeing Defense, Space & Security, responsible for the functional leadership of 22,000 engineers.

O’Donoghue’s success as a Boeing executive stems from a unique approach to leadership and desire to understand and leverage the identity, purpose, principles and culture of the organization he leads. He accepts that the leader at the top cannot possibly control everything and instead allows conditions for leadership to emerge at all levels of the organization. He views large organizations as complex living systems that, given proper stewardship, organically adapt to changing conditions and respond more quickly and effectively to sudden shifts and emergent needs. His strong belief in pushing decision-making down to the working level, while engendering a high level of trust and open dialogue at every level of the organization, are hallmarks of his leadership. His credo: “Being present in the moment is a key trait and quality of a good and effective leader.”

O’Donoghue is a multifaceted individual, a confident leader across multiple settings and a role-model for corporate America. His dedication and transformative contributions to aerospace technology are the embodiment of a Pathfinder: an example for future pilots who aspire to accept responsibility for leadership in aviation.

UNSHAKEABLE GREAT GALLERY

For future generations, by former executive director Howard Lovering, is full of unexpected stories about the Museum. Back in February 2001, a magnitude 6.8 Nisqually earthquake hit the Puget Sound region. Boeing Field experienced extensive damage from the quake that caused closures or the airport, runways and taxiways. The Museum, on the other hand, with its massive steel and glass Great Gallery, emerged unscathed from the quake. A staff member watching the Great Gallery during the quake saw all the aircraft swinging in unison, and some of the smaller aircraft continued to swing for a few minutes after the quake subsided. The exceptional engineering behind the Great Gallery ensured that the precious artifacts enclosed within it were undamaged by the disruption. This piece of behind-the-scenes Museum history—and many more—is available exclusively in For Future Generations, available now in our store and online at museumofflightstore.org.
A FITTING TRIBUTE

BY SANDRA DOLESE, CFRE, CSPG, PLANNED GIVING PROGRAM MANAGER

 Deployed in October, 1972 with the 429th Project Welcome Home. Soldiers were given the welcome that they remembers being treated well upon his arrival. Jolly Green Giant helicopter made us two unsuccessful attempts to rescue him. The first was impossible due to weather and the on the second attempt the helicopter was met with enemy fire. After five days without food or water, Bill managed to get liquid from a palm tree. On December 29, 1972, Wilson was captured, blindfolded, and transported to the Hanoi Hilton where he joined Spositoryer as a prisoner of war. After 92 days in captivity, Wilson boarded the last C-141A out of Hanoi on March 29, 1973 headed for freedom. The POWs deplaned at Clark Air Force Base in the Philippines and were greeted as American heroes much like Wilson's surprise. Stateside, they were hosted by President Richard Nixon and Henry Kissinger at The White House.

After the war, Bill continued his service with the U.S. Air Force and the Air National Guard. Boeing hired him as a flight deck design engineer on the first electronic flight instruments and automatic navigation systems in the mid-1980s. Wilson was lead engineer for cockpit design on the X-32 Joint Strike Fighter Concept Demonstrator and worked on F-22 Raptor Pilot Training Systems.

Bill joined the Museum’s docent corps after a 27-year career. When he’s not spending time with his wife, Gayle, and the three children and four grandchildren they share, Bill enjoys sharing his knowledge of aviation with Museum visitors as a docent.

Bill recently made a tax-wise gift to support the Museum’s Project Welcome Home by making a direct transfer of his IRAs minimum required distribution. “I’m proud of this Museum for building the Vietnam Veterans Memorial Park. It’s a nice recognition that many of us didn’t receive after the war.”
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