

# BRIEFINGS



December 2017

## HILLER AVIATION MUSEUM WHERE INSPIRATION TAKES FLIGHT

### LIGHTING THE WAY VISUAL AIDS TO AERIAL NAVIGATION

by Jon Welte

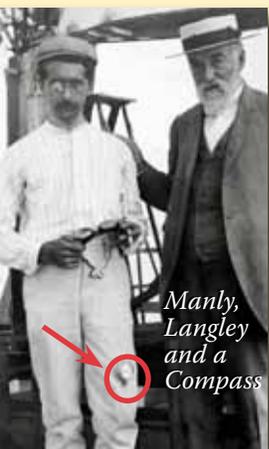
**O**n October 7, 1903, Charles Manly sat at the controls of the Langley Aerodrome. The brainchild of Smithsonian Institution director Samuel Langley, the Aerodrome was the culmination of his research into heavier than air flight. A signal was given and the Aerodrome launched—and immediately plunged into the Potomac. A second attempt in December 1903 met the same watery fate. Manly, unharmed, was rescued each time.

countryside were undertaken by aircraft flying US Mail. The first flight, in May 1918, was scheduled from Washington, DC to New York City. The pilot became lost shortly after departure and landed to ask for directions, vividly demonstrating the ongoing shortcomings in aerial navigation.

Air mail served as an impetus to development of a nationwide aerial navigation system. By 1920 air mail service linked San Francisco and New York, yet the service was a hybrid. Mail flew by day and was transferred to trains overnight, taking nearly 3 days to complete the transcontinental journey. Night flight, especially over the vast and sparsely populated spaces of the western United States, was too dangerous to attempt. To solve this problem, a system of airway beacons was constructed.

Built between 1923 and 1933, airway beacons were intended to guide airmail pilots on night flights. Each beacon consisted of a 90' tall tower topped by a rotating white beacon light, and a small building containing a gasoline-powered generator to power

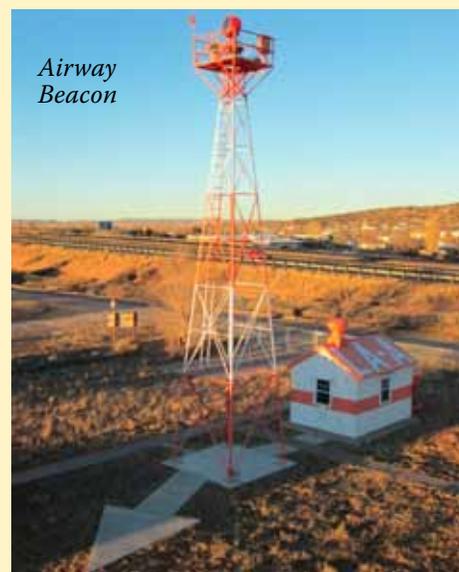
Although the Aerodrome's two ill-fated "flights" went nowhere, Charles Manly was clearly prepared for success. A pre-flight picture of Manly together with Langley shows him in his flying suit, which included a nautical compass sewn onto its left leg. Manly's readiness showed that even in the earliest days of



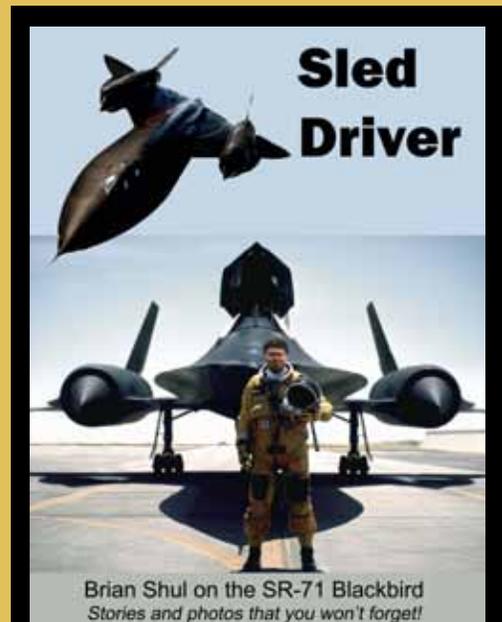
Manly, Langley and a Compass

flight, navigation was a serious concern.

The potential for airplanes to travel rapidly over long distances was apparent from the start. In 1909, Louis Bleriot successfully flew across the English Channel—but without a compass, he initially navigated by following a destroyer of the French Navy. In the United States, the first attempts to cross wide expanses of



Airway Beacon



### Sled Driver

Brian Shul on the SR-71 Blackbird  
Stories and photos that you won't forget!

**SATURDAY DECEMBER 30, 11 AM**

**CELEBRATE NOON YEAR'S EVE**  
@ Hiller Aviation Museum  
Sunday, December 31  
11AM

Bring in the New Year with your family and enjoy games, entertainment and activities for all ages.

And don't forget, Santa Arrives by helicopter on Saturday, November 25 at 10:30

For More Details: [www.hiller.org](http://www.hiller.org)

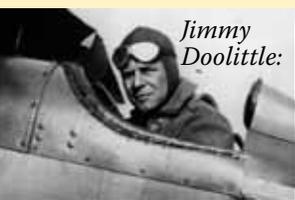


Smithsonian Institution  
Affiliations Program

the beacon. The concrete footprint of each beacon formed the shape of a giant arrow, painted bright yellow to indicate the direction of the next beacon. Each individual beacon could be seen from 40 miles away in ideal conditions; a series of beacons about ten miles apart defined an airway, or route, across the country. The completion of the first transcontinental airway in 1923 permitted airmail to be flown coast to coast without the need to transfer to trains overnight, cutting the trip duration in half.

Airway beacons were developed in conjunction with airfields to service aircraft flying the mail. On the transcontinental airway between San Francisco and New York, stops at thirteen intermediate airports were made. These stops allowed for mail transfers, aircraft refueling and pilot changes. Airports received beacons of their own, with different color combinations to indicate airports of different types. Sequential green and white flashes denoted civilian land airports in the United States, a practice that continues today.

Even as the last airway beacons were being erected, however, their demise was at hand. Airway beacons required clear weather to provide a safe and sure means of navigation. In poor weather, early pilots relied on a different type of navigation known as dead reckoning—flying a known compass course at a known speed for a carefully measured period of time. Charles Lindbergh used dead reckoning to cross the Atlantic Ocean in 1927, but while the technique sufficed to find a continent at the end of a 33-hour flight, it was insufficiently precise to thread a mountain pass, or find a small airfield. For that, greater precision was required—the precision that radio navigation could provide.



*Jimmy Doolittle:*

Although invisible to the naked eye, radio waves are able to shine through haze, clouds and darkness. Following

a series of experiments undertaken by Jimmy Doolittle in 1929, low-frequency radio range (LFR) equipment was gradually installed along airways across the country. LFR signals required elaborate ground stations, but aircraft themselves needed only a simple AM radio receiver to follow the signal. The station transmitted two signals on the same frequency—the letters A and N in Morse code. The pilot listened to the radio frequency while following the defined airway. If the pilot heard a steady tone in the radio headset, the aircraft was on the course line. If either letter became

audible, the pilot would know to turn left or right to regain the course. Following an LFR course for long periods of time was mentally demanding of the pilot, but the equipment requirements were modest and the precision sufficient to allow for instrument approaches to airports in extremely poor visibility. LFR systems were widespread across the United States by the mid-1930s, and were the mainstay of commercial aviation operations until VHF Omnidirectional Range (VOR) equipment became available following World War II.

Airway beacons remained in use following the adoption of LFR radio ranges, and in fact early LFR stations were



*LFR Station*

often co-located with airway beacons to define the same airways. Following the adoption of VOR navigation, however, the beacons gradually fell into disuse. By the 1970s most had been decommissioned, and today only a handful of beacons remain operational. By 2020 just one operational airway beacon—located at MacDonal Pass, Montana—is expected to remain. In contrast, the white-and-green rotating beacons identifying airports are still a welcome and familiar sight to 21st-century aviators.



*Dean Williamson and SFO Beacon*

In 2017 the Hiller Aviation Museum acquired a decommissioned aerodrome beacon from San Francisco International Airport. The beacon will be reconditioned by Restoration Shop volunteers and placed on display in 2018. Retired after many years of service guiding aircraft from around the world to SFO, this new exhibit serves as a reminder of aerial navigation in a bygone era.

#### *Resources*

<https://airandspace.si.edu/collection-objects/air-mail-usa-facilities-navigation-beacons-dayton-wright-dh-4-photograph>, downloaded 1 November 2017  
<http://www.kpax.com/story/36715247/mdt-to-decommission-almost-all-airway-beacons>, downloaded 1 November 2017  
<https://www.nps.gov/nr/feature/places/14000462.htm>, downloaded 1 November 2017

# PRESIDENT'S PERSPECTIVE



**O**ur 13th annual fundraising event, “Not Even the Sky is the Limit” was held at the museum in October and thanks to the hard work of the museum Board, volunteers, our

MC Sandhya Patel, guest speaker Bonny Warner Simi and our own Rebecca Duran, Vice President of Development, the event was a great success.

Meanwhile, work continues by our restoration shop volunteers in constructing a full-size replica of a WWI Fokker Dr.1 triplane. In the coming months, the aircraft will again be removed from its temporary display in the gallery back to the restoration shop where you can watch the intriguing process of putting fabric covering over the wings, control surfaces and fuselage.

In the center of the gallery, a new display is taking shape called “Flying Destinies in California”. In pictures and text, the stories of Bay Area aviation pioneers is told including Lincoln Beachey, Allan Loughhead (Lockheed), Robert Fowler and the Jacuzzi Brothers. Plus, fascinating accounts are displayed of the 1927 Dole Air Race (the first from Oakland to Hawaii) and the 1929 Women’s Air Derby. Soon to come in this area is the completely refurbished airport beacon which shone at SFO for many decades.

The museum’s 6th annual Aero Design Challenge was successfully undertaken this October and over 350 youth from the Bay Area spent five days at the museum tackling the challenge of designing, engineering and flying gliders. Several hundred additional students will be participating from South San Francisco in the weeks between Halloween and New Year’s. We are especially thankful for the event’s sponsors, Peaxy and SAP, including many of their company employees who volunteered to help during the multi-day event.

A heartfelt “thank you” goes to all of the many contributors, visitors and museum Members for supporting us and making the museum part of your lives. There are great things coming and we look forward to seeing you this winter at the Hiller Aviation Museum.

*Jeffery Bass, President & CEO  
Hiller Aviation Museum*

# NEW MEMBERS

Lydia Alexander Kapoor and Rajil Kapoor, Wayne D. and Julie Allen, Greg Ammen and Grace Spiridon-Ammen, Marilyn Anderson, Evangeline Anteola and Tatiana E. Monson, Mehran Ardakanian, Carmen Arrocha and Neel Varshney, Sachie and Vince Bafetti, Emily Bailard and David Lisson, Dana and Jon Bailey, Valerie and Greg Baker, Jeanine Batara, Jessie and Travis Becker, Shannon and Lyle Beckwith, David and Katie Belden, Sarah Benson-Konforty, Kelly and Todd Bernhardt, Igor Beshpamyatnov and Anastasiya Farukshina, Mibhali and Milan Bhalala, P. Vittal and Poornima Bhat, E. Ronald and Penny Blake, Paul and Nanette Boerner, Nina Boiadjeva and William Lo, Chris and Cara Bollinger, Renate and Kenny Boronowsky, Mehrnaz Boroumand Smith and Brian Smith, John A. Bottini, Neville Bowers and Janette Fong, Rachel Bowman and Amelia Appen, Gregory Brail and Linda Henigin, Jean-Claude Brizard and K. Brooke Stafford-Brizard, Kathryn L. Brooks, Sara Brown and Jessica Mansano, Tanya and Christopher Buell, Janice Byrns, Danhai Cao and Jing Li, Paula and Bandel Carano, John L. Cathey, Emilio and Ruby Cervantes, Albert Chang, Molly Chao and Jeff Wallace, Heather and Victor Chemtob, Weini Chen and Yang-hua Chu, Jae and Jennifer Cho, Aleem and Jana Choudhry, Albert Chung, Abby and Robert Earl Clark, Thomas Cole, Harry Cook, Keith Cooper and Ellen Ridge-Cooper, Alice and Kevin Cooper, Darren and Deborah Crawford, Kevin Cunningham and Agathe Thommeray, Melanie and Michael Curtiss, Kirstin and Mark Dahm, Gillian and Paul Davis, Luciana De Almeida Aguiar and Paulo Braz Golgher, Matthew B. and Katherine A. Debski, Nick Dellaporta, Laura and Chris Demetriou, Sahil and Julie Desai, Srinivasa Rao and Seshu Rama Devi Dharmavarapu, Robert Dias, Angela and Joel Dino, Hua Dong and Xiu Hua Ma, Denise Donnelly, Xochitl Dorsey and Chris Kairallla, Mary and Olufemi Dosunmu, William D. Douglass, Kaveh Dowlatshahi and Mandana Abollhassani, Kenneth Dyke and Lorien Cunningham, Daniel and Marina Eisenbud, Tom Ellerhorst, Kristi and Sumner Estes, Yodit Ethiopia and Iyassu Beyn, Arthur and Pam Evans, Tracey and Michael Fahmy, Xiang Fang and Kejun Song, Patrick Fellowes and Sherrie Chow, John Fisher, Jon and Marzena Fitzpatrick, Chesca Y. Fox, Corinne Galvez and Noelle Galvez Rey-Hipolito, Alexis Garcia and Rand Wacker, Robert Kevin Garrity and Jenny Farabee, Richard A. George, Dorene and Roger Goad, Mary Goodman, Colin Gould and Xiaohua Liu, Christi and Eric Grab, Nicole Granato, Dawn and Andrew Gross, Morton Grosser, Nitin Gupta, Luis Gutierrez and Kathy Lechi, William Gutierrez and Lauren Robbins, Nichole and Tim Guy, Shadi and Rolf Haag, Les and Bernadette Hadnagy, Scott and Elaine Hale, Won and Jin W. Han, Donald R. Harris, James Harrison and James Harrison Jr., Atsushi and Kiyoko Hasegawa, Eugene A. and Jacqueline Haunch, Peter Hebert and Juana Buiza, Malcolm and Margaret Heinicke, Kyle and Hannah Heller, Matthew Henry and Danielle Chammas, Holly and Steven Heyman, Lynn Hoffman, Daniel Hollinger and Carolyn Von Bobinski, Arlene and Frank Hsu, Alison Hu and Neeraj Manrao, Cheng Hu and Yang Yang, Melody Hu, Fangyu Claire Huang and Hans Tung, Jason Hui and Shannon Shaper, Anna and Lyudmila Iosifova, Shilpi Jain, Logan Jamieson, Kimberly and Andrew Jennings, Arunram Kalaiselvan, Sean and Elizabeth Kamath, Rhonda and Mark Kamen, Harvey S. and Gay T. Kaplan, Norna and Dan Karp, Cheryl Katz and Dan Goldman, Nolan Katz, Jason and Melinda Kersey, Rohit Khare and Smruti Vidwans, Houn Kim and Youngin Shin, Soyeun and David Kim, Ki Hun Ko and Hun Kyeong Oh, Marvin Kohn and Adele Salle, David Krippendorf, Lana Krtolica and Chris Donewald, Yuk Fun Ku and Peter Lam, Turker and Nilay Kuyel, Yulia Kuzina and Valentin Shergin, James Kyle and Teresa Wheeler, James and Esther Lafayette, Henry and Christina Lamparski, Ruth and Juan Lang, Kimberly Lau and Kevin Hunt, Wing Kee Lau

and Jing Wang, James Lawrence and Kara Wright, Alex Lee and Michelle Cheng, Victoria Lee and Dae Hwan Kim, Carl Lee and Becky Lee, Judy Lee and Marylou Shockley, Seok and Christine Lee, Bob Leuten, Teresa and Douglas Lewis, Bei Li and Yibin Zheng, Ji Liang and Hengke Jin, Kevin Lim and LiTing Zhou, Lioyong and Loraine Lim, Christopher Lin and Katherine Chi, Jia Liu and Rong Ding, Jenlung Liu and Jieun Jang, Chang and Xun Liu, Li Wei Liu, Joyce Logan, Luis Lopez-Echeto and Eileen Tanghal, Brittany Lothe and Scott Bolick, Edward and Christine Lu, Richard and Chandra Lund, Xiao Ma and Wanmin Wu, Kevin and Veronica Mallon, Paul Maloney and Michele Wong, Lauren Manero and Kathy Borkoski, Peter E. Martin, Marissa Mayer and Zachary Bogue, John McElroy and Sandra Tichenor, Fred McKenna, Steven B. and Heather McLaughlin, Zeke and Terri Mead, Amy Mehdizadeh and Stacey McNamara, David Menche, John Mendieta, Joel Meredith, Steffen and Christiane Meschkat, Julia and Valery Miftakhov, Barbara and Stephen Mikulic, Heather Milotich and Penny Atkin, David G. Mitchell, Roy Hilton Mize, Brian and Stephanie Morgan, Peter and Patricia Mork, Malgorzata and James Morle, Katie Morris and Jason McCarthy, Laura and Patrick Mottram, Nate Mueller and Katie Weber, June L. Munro, Annie and Doug Myers, Sudhir and Raji Nagarkar, Stephen R. Nagy, Curt Nehring and Carolyn Chaney, Nguyen Nguyen and Joseph Oszewski, Catherine Nicholson and Matthieu Riou, Luke Nielsen, Paul W. Nordt, Rebecca and William Norton, Brenna O'Boyle and Albert Nelson, Hester O'Gara and Colleen Staveley, John N. Olson, Shoeb Omar and Guillermina E. Gillen-Omar, Jenny and Bryan Opt Holt, Sarah and Gyorgy Ordody, Yansu Ouyang and Daniel Hoover, Demetra Paras and Aleena Moulds, Susan Park and Jeff Cranmer, Hyun Min Park and Misun G. Han, Clay and Ruby Parrish, Noe Perez and Page To, Peter Pershing, Doy Prater, Jim Protsenko and Jen Moy, Sameer and Monica S. Rakheja, Katherine and David Raspet, Raymond and Sue Rawcliffe, Indrani Rebbapragada and David Breckenridge, Luke and Jennie Reimer, Amber Dina Reinoso and Antonio Lopez Reus, James Rickel, Margaret and David Rickling, Richard Ripley, Stefan Ripsam and Sandra Han, George Rodgers, Jonathan and Mindie Romanowsky, Diane Rearwin Root, William Rosenberg, Burt Rosensweig, David and Maria Rottblatt, Aaron and Erin Rouland, Daniel Ruiz and Ana Uribe Ruiz, Kristy and Ariel Salinas, Susan and Burt Salop, Elmo Sanders, Sue B. Santoro, Charles G. Scatena and Nicole Monozon, Ralph A. Schoenfeld, Grace and Andrew Schulz, Philip and Natalia Schuster, Gregory and Janet Shaw, Dan and Shannon Shearn, Katherine Sherman and Sarah Garrison, Emil and Bhavna Sheth, Mark and Tracy Simonton, Katie and J.D. Simpson, Jasbir S. and Veraindra, Ram Sivaraman, Mazen A. and Carla Skaf, Dianna and Chris Smith, Yvonne and Michael Sorenson, Maria Sorokina, Ben and Jenny Stevenson, Robert L. Stickles, Ethan and Rita Stock, Honglin Su and Lan Huang, Veronika Svecova and Juraj Svec, Chris and Tina Talbot, Alex Tenorio and Anne Hendrickson, Jennifer and Jason Teter, James Thompson and Sisa Segumalian, Kevin and Angela Tiene, Donald and Donna Torburn, Gregory and Tatiana Touretsky, Chaeth and Idyn Treharne, Rick and Cara Underwood, Chris and Emily Upjohn, Hibba Usman and Usman Sindtu, Paisley and Ara Vartanian, Sai Vedantam, Julie Vessigault, Victoria Vetrova, Lisa Warren and Klaus Reschke, Alan and Charlotte Waxman, Chris Weeldreyer and Jacki Lahn, Curtis Weil, Giorgio Weston and Paola Weston-Capuano, David Williams and Eileen O'Pray, Keith Winter and Eva Wang, Robert and Elizabeth Wolfe, Joanna Wong and Vincent Lau, Jessie and Danny Wong, Loretta Woo and Harvey Wong, Xufeng Wu and Yue Yang, Gilead Wurman and Lori Fenton, Odel Wurman, Wei Xu and Chang Zhao, Shiro and Kaori Yamanaka, Baki Yasar and Filiz N. Gorpe Yasar, Albert and Lisa Yi, Zhiyi Yu, Viraf Zack and Shahnaz Jangi

Not Even  
Sky is  
Limit

BENEFIT GALA

## SPECIAL THANKS TO:

### Presenting Sponsor

Mark Jon Bluth

### Supporter

Asset Management  
Chris Malachowsky/NVIDIA

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Jeffery Bass & Lisa Babbitt  
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Robert & Julie MacLean  
Seth Schalet & Claire Berney  
Hank Scherf & Vicki Sanders  
Manuel Terranova/Peaxy

### Special Thanks to the Gala Event Committee

Eileen DiGiorgio  
Glenna Eaton  
Brenna O'Boyle



# SUPPORT THE MUSEUM!

Donate Your Car, Truck,  
RV, Boat, Airplane  
or Helicopter



Call Toll Free  
1-800-677-1744  
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## SR-71 PILOT BRIAN SHUL, SATURDAY DECEMBER 30, 11AM



Brian Shul is one of the most popular and dynamic aviation speakers in America today. As an Air Force fighter pilot, Brian was shot down in the Vietnam War and severely burned in the ensuing crash. Initially given up for dead, he was rescued and spent one year in hospitals, endured 15 surgeries and was told his flying days were over. Amazingly, Brian returned to active duty flying, became an Airshow Demonstration pilot in the A-10, went on to become a TOPGUN instructor, and culminated his Air Force career by flying the top secret spy plane, the SR-71. Flying

the world's fastest and highest flying aircraft required an astronaut physical and Brian made Air Force history when he passed with no waivers.

## SANTA CLAUS ARRIVES BY HELICOPTER

SATURDAY NOVEMBER 25, 10:30 AM  
RAIN OR SHINE. DOORS OPEN AT 9:30.

Join the West Bay Community Band and sing Christmas Carols while the kids line up to tell Santa their Christmas gift list.

*No Museum admission fee required for this event!*



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Make life easy.



# CALENDAR

## DECEMBER

SAT, DEC 2

Museum Closed Private Event

SAT, DEC 9 • 10:30AM & 2PM

Starlab Sky Show

THU-FRI DEC 21, 22

Aviation Camp – Flight Science Lab

SAT, DEC 25

Closed All Day

MON-FRI, DEC 26 – 29

Aviation Camp – Wright Flight

WED, DEC 27 • 11AM

Happy Birds

WED, DEC 27 • 1PM – 3:30PM

Nano Drone Workshop

SAT, DEC 30 • 11AM

SR-71 Pilot Brian Shul

SUN, DEC 31 • 10AM – 1PM

Noon Years Party

## JANUARY

MON-FRI, JAN 2 – 5

Aviation Camp – Aero Engineers

WED, JAN 3 • 11AM

Perfect Paper Plane Workshop

**GOURMET FOOD TRUCK  
DRONE PLEX • SATURDAYS & SUNDAYS  
INVENTION LAB • SATURDAYS & SUNDAYS  
FLIGHT SIM ZONE • SATURDAYS & SUNDAYS  
BOY AND GIRL SCOUTS  
OFFERED EACH MONTH – WWW.HILLER.ORG**

## Join Now!

## Annual Membership Application

Or join online at [www.hiller.org/member](http://www.hiller.org/member)

### I want to be a member of Hiller Aviation Museum in the following category:

- |  |   |
|--|---|
| <input type="checkbox"/> Senior (65+) \$50 | <input type="checkbox"/> Barnstormer \$550  |
| <input type="checkbox"/> Individual \$65   | <input type="checkbox"/> Adventurer \$1,000 |
| <input type="checkbox"/> Family \$90       | <input type="checkbox"/> Explorer \$2,500   |
| <input type="checkbox"/> Pioneer \$125     | <input type="checkbox"/> Navigator \$5,000  |
| <input type="checkbox"/> Pilot \$275       | <input type="checkbox"/> Aviator \$10,000   |

- New Member  Annual Renewal

Primary Adult Member: \_\_\_\_\_

Second Adult Member: \_\_\_\_\_

(Family Memberships and up)

Third Adult Member: \_\_\_\_\_

(Pioneer Memberships only)

Address: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_ Daytime Phone: \_\_\_\_\_

Email: \_\_\_\_\_

This is a gift membership from: \_\_\_\_\_

Payment Amount: \_\_\_\_\_  VISA  MC  AMEX

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CSC: \_\_\_\_\_ Print Name on Card: \_\_\_\_\_

Signature \_\_\_\_\_

**Senior (age 65+) \$50**  
Unlimited admission for you + 2 guest passes.

**Individual \$65**  
Unlimited admission for you + 2 guest passes.

**Family \$90**  
Unlimited admission for 2 named adults and up to 4 children (17 & under) + discounts on Aviation Camp.

**Pioneer \$125**  
Family Membership benefits + an additional card for a named member (ideal for caregivers) and 2 guest passes.

**Pilot \$275**  
Family Membership benefits with a total of 3 guest passes + 8 FMX Flight Simulator passes and 50% off additional FMX tickets.

**Barnstormer \$550 • Adventurer \$1,000**  
Pilot Membership benefits with a total of 4 guest passes + 10% off Museum Rental and Birthday Parties.

**Explorer \$2,500 • Navigator \$5,000**  
Pilot Membership benefits with a total of 8 guest passes + 15% off Museum Rental and Birthday Parties.

**Aviator \$10,000**  
Pilot Membership benefits with a total of 12 guest passes + 25% off Museum Rental and Birthday Parties and a Hiller Aviation Museum jacket.

## UNTAMED SKIES OF WW-I

SATURDAY  
JAN 27, 11AM

In the first days of World War I, aviation technology was rushed to the battle-



field. Inadequately tested, new aircraft designs made their aviators unwitting test pilots with an average life expectancy of less than six weeks!

Untamed Skies explores major innovations born of necessity and improved upon over time to produce safer and more capable warplanes. Lightning-fast advancements in materials science, engines and aeronautical engineering led to designs that proved to be ingeniously creative and outlandishly dangerous—and sometimes both at once! As aircraft improved so too did weapons and tactics mature, changing the face of warfare forever.

Thank you for your support.

Please make checks payable to  
Hiller Aviation Museum  
601 Skyway Rd, San Carlos, CA 94070



# OF EVENTS

**SAT, JAN 6 • 10AM – 2PM**  
Open Cockpit

**WED, JAN 10 • 10AM – 5PM**  
Home School Wednesday

**SAT, JAN 13 • 10AM & 5PM**  
Scout Saturday

**MON, JAN 15, 1PM & 2PM**  
Starlab Sky Show

**SAT, JAN 20, 10:30AM & 2PM**  
Starlab Sky Show

**SAT, JAN 27, 11AM**  
Untamed Skies of WW-I

**SAT, JAN 27, 1 – 4PM**  
Aero Design Challenge

**MON-FRI, FEB 12-16, 3:30 – 5PM**  
Engineer's Week

## FEBRUARY

**SAT, FEB 3 • 11AM – 2PM**  
Flying Football Fun Fest

**WED, FEB 7**  
Home School Wednesday

**SAT, FEB 10 • 10AM – 3PM**  
Garden Model Train Railroad

**MON-FRI, FEB 19 – 23**  
Aviation Camp – Physics Flyers

**S • WEDNESDAYS, 11AM-2PM,**  
**SUNDAYS, 10:30AM-12PM & 1PM-3PM**  
**FRIDAYS & SUNDAYS, 10:30AM-4PM**  
**FRIDAYS & SUNDAYS, 11AM-2PM,**  
**SCOUT PROGRAMS**  
[WWW.HILLER.ORG/SCOUT-PROGRAM](http://WWW.HILLER.ORG/SCOUT-PROGRAM)

## FOR MEMBERS ONLY

**EVENING WINE & BEER  
RECEPTION**

**FRIDAY, FEBRUARY 2, 2018  
5-7 PM**

**A SPECIAL EVENING  
FOR THOSE 21 AND OVER.**

Enjoy a free glass of wine or beer and light hors d'oeuvres. See the museum after hours in a whole new light! Members are free. Members may bring guests for \$5 per person.



## “NOON” YEARS EVE PARTY • DECEMBER 31 11AM – 1PM

*Presented by The Hiller Aviation Museum and Bay Area Parent Magazine*

You're invited to attend the “Noon” Years Eve Party on Sunday, December 31 at the Hiller Aviation Museum. This annual event is designed especially for kids. Join us for these exciting activities:

- Count Down to 12:00 Noon (“Noon” Years) Balloon Drop in two separate rooms this year
- Slides and Jumpers
- Face Painting, Games and Fun
- Dance Shows, Magic and more!

Event runs 11am-1pm Sunday, December 31 at the Hiller Aviation Museum. Event included with museum admission.



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**JUMPIN' GIRAFFE  
PARTY RENTALS**

*Create. Challenge. Play.*

*Serving the SF Peninsula, from Daly City to Sunnyvale*

## OPEN COCKPIT DAY

**JANUARY 6, 10AM – 2PM**

Who isn't fascinated with sitting in the cockpit of a modern airliner or a jet? The Hiller Aviation Museum is unique in regularly providing visitors access to real aircraft cockpits like an A-4 jet trainer, a Hiller H-12 helicopter and our Boeing 747. On this special day, we swing open additional cockpits including the Grumman HU-16 Albatross, Boeing 737 airliners and the Cessna 177 Cardinal. From general aviation piston aircraft to commercial airliners, you will get a real “hands-on” experience and unique perspective on flying from real pilots and airline captains. Event included with museum admission.



## FLYING FOOTBALL FUN FEST & PUPPY BOWL

**SATURDAY, FEBRUARY 3,  
10AM – 1PM**

Join the excitement of the Super Bowl as the Hiller Aviation Museum explores the junction of football and flight in a family-friendly extravaganza! See a helicopter football drop, watch a puppy bowl, check out the Drone Bowl combat demonstrations, experiment with aerodynamics of footballs and more! Event included with museum admission.

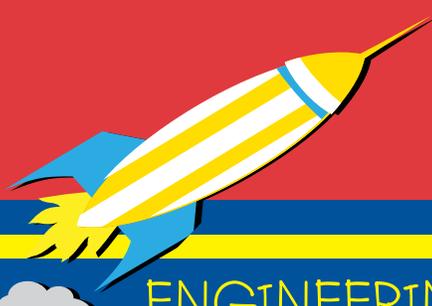


## BAY AREA GARDEN RAILROAD

**SATURDAY FEBRUARY 10, 10AM – 3PM**

The Bay Area Garden Railroad Society's waist-high track features live steam locomotives. These railroad engines are designed to be run in anyone's backyard garden. Live steam locomotives have a butane-fueled fire that boils water. The resultant steam is then used to power the pistons. This is the same technique full-sized locomotives have used for 175 years. Many examples of old-time model steam locomotives will be seen running on the track, all the while puffing wonderful plumes of steam.





# WINTER PROGRAMS



## ENGINEERING CHALLENGES

### AERO DESIGN CHALLENGE

January 27, 2018 • 1 PM – 4 PM

Explore the design process with an exciting adventure in flight! Prepare for the task of building a high-performance glider by experiencing wind tunnels, flight simulation, aerodynamics labs and more! Then, work in a small group of 3-4 to design, build and test a glider. Each team competes to reach the longest distance in an exciting culminating competition!

The Aero Design Challenge is sponsored by Peaxy and SAP. There is no charge to participate and Museum admission is not required, but space is limited and advanced registration is required.



### ENGINEERS' WEEK

February 12-16, 2018

The countdown has begun for a high-flying adventure in engineering! This year's 90-minute program explores the cutting edge of flight with an adventure in suborbital spacecraft. Children Grades 4-8 design, build and test a small water rocket while using the engineering design process.

Engineers Week programs are offered 3:30 PM – 5:00 PM Monday through Friday, February 12-16. There is no charge to join these programs but space is limited and advance registration is required.



### HOME SCHOOL WEDNESDAYS

Drop-In Field Trip Tours and Programs  
Grades K-8



Home school students Grades K-8 may be admitted individually at the field trip rate when accompanied by an adult paying regular Museum admission. No reservations are necessary, space is available on a first-come, first-served basis.

December 6, January 10, February 7, March 7.

### DRONE BUILD WORKSHOPS

Drone Rangers (Grades K-5)

January 15, February 17, March 10

10 AM – 12:30 PM

Explore the world of unpowered flight! Drone Rangers features hands-on experiments in drone construction, multirotor flight simulation and flight training in the Museum's Drone Plex. All participants take home an entry-level mini-drone!



Nano FPV Workshop (Ages 10-Adult)

December 27, January 6, February 17, March 10

1:00 PM – 3:30 PM

Take flight with Hiller Aviation Museum and Aerial Sports League! Discover the world of first-person-view (FPV) drone flight. Complete a training session with simulators and flight aircraft, then don the



FPV goggles to master the art of virtual flight! Participants take home a complete set of FPV flight equipment. Advance registration required for all drone workshops. Visit [www.hiller.org](http://www.hiller.org) for more information or to enroll today.

# AMS FOR KIDS



## WINTER AVIATION CAMPS

December, January and February Programs Available

Take to the skies with special Aviation Camp program for Grades K-8! Four different topics are available, each offering hands-on experiments, flying models, flight simulation and encounters with real aircraft.

FLIGHT SCIENCE LAB • December 21-22

WRIGHT FLIGHT • December 26-30

FLIGHT SIM ACES • December 26-30

AERO ENGINEERS • January 2-5

PHYSICS FLYERS • February 19-23

Winter Camp programs are available Full Day (9 AM—4 PM), and extended hours are available for an additional fee. Partial-week enrollment options are available for most sessions to meet school vacation and family holiday plans. Space is limited—register today to secure your child's spot in winter Aviation Camp!



## STARLAB SKY SHOW

December 9, January 15 & 20, February 3, March 10

10:30 AM, 2:00 PM

Enter the Hiller Aviation Museum's Starlab Planetarium and take a spectacular trip through the glittering stars, planets and constellations of winter. Identify star patterns visible from your own backyard this season during a special 30-minute presentation.

Space for each presentation is limited. Tickets are required and may be purchased at the Gift Shop on the day of the program. Presentations are designed for children aged 5 and up. Children aged 3-5 are welcome to join the first presentation each day. Visit [www.hiller.org](http://www.hiller.org) for more information.



## SPECIAL EVENT PRESENTATIONS

### HAPPY BIRDS

Parrots, Macaws and Cockatoos

Wednesday, December 27 • 11 AM—12 PM

Many birds migrate south for the winter, but not the Happy Birds! Returning to the Hiller Aviation Museum for a special holiday engagement, this talented team of precocious parrots gives a remarkable demonstration of feathered flight. Marvel at their antics as they fly, walk, talk and even sing through a wide range of amazing behaviors that will entertain your whole family!



### PERFECT PAPER PLANES

Featuring Paper Airplane Champion John Collins

Wednesday, January 3 • 11 AM—12 PM

Join a unique exhibition of paperlight flight! Author and master paper airplane builder John Collins leads an interactive 45-minute session investigating the science of making things fly and the notebook-scale engineering required to fold and fly record-breaking paper gliders. Come prepared to try your hand building and flying your own paper aircraft!



## AVIATION CAMP SUMMER 2018

Dates and topics available online  
January 3, 2018

Register early for best selection!  
[www.hiller.org](http://www.hiller.org)





## HILLER AVIATION MUSEUM

601 Skyway Road, San Carlos, California 94070 [www.hiller.org](http://www.hiller.org)

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# SPECIAL HOLIDAY SHOPPING

Friday Nov 24 through  
Sunday Dec 31

Museum Members  
receive a  
25% discount  
in the Gift Shop  
Friday, November 24  
through  
Sunday, December 31  
Only

Become a Museum  
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advantage of this great  
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Shop on line: [www.hiller.org](http://www.hiller.org),  
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