

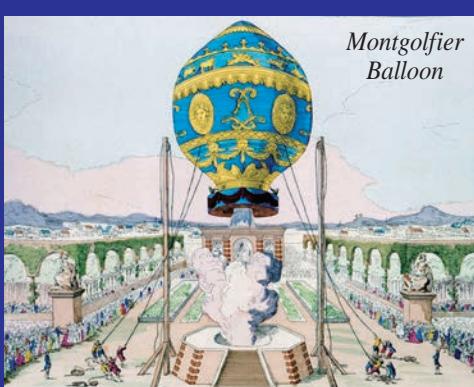


BRIEFINGS

March – May 2022

HILLER AVIATION MUSEUM WHERE INSPIRATION TAKES FLIGHT

PROTECTION FROM FALLING PARACHUTES AND AVIATION



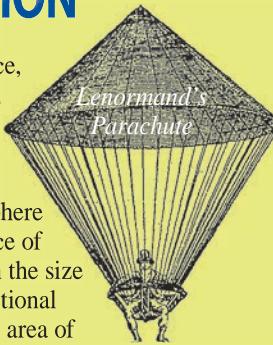
Montgolfier
Balloon

Lenormand's device, like all parachutes, works by increasing air resistance. Objects falling through an atmosphere experience the force of air resistance, with the size of the force proportional to both the surface area of the object and also the object's speed. Hence, the air resistance force increases with airspeed while the force of gravity remains constant. At a certain speed during a fall an object will reach "terminal velocity," at which the downward, accelerating force of gravity is matched by the slowing force of air resistance. Upon reaching this speed, a falling object will no longer accelerate. For a human being falling through the air near Earth's surface, terminal velocity is reached at about 120 miles per hour.

The device used by Lenormand worked the same way as a modern parachute. When not in use, the parachute was folded so as to use less space in storage. When needed, the parachute was unfolded to greatly expand the surface area exposed the air resistance. This increases the air resistance force, and the falling parachutist slows down to reach a new, lower terminal velocity.

Early parachutes used during 18th century balloon experiments had rigid frames, much like a framed kite or parasol. Another French balloonist, Andre-Jacques Garnerin, developed a crucial innovation in 1797 – a folded,

The development of modern parachutes began in earnest with the start of manned ballooning in 1783. French brothers Joseph-Michel and Jacques-Etienne Montgolfier created the first hot air balloons, and in an unrelated advance their countryman Jacques Charles developed the first hydrogen balloon later that same year. The Montgolfiers themselves had experimented with parachutes in the 1770s, but it was Louis-Sebastien Lenormand who made the first documented descent by parachute in December 1783. Lenormand was also the first to use the term "parachute" to describe a device intended to slow a fall through air resistance. The word, a combination of French and Italian, means "fall guard," a device to protect in a fall.



Flying Leprechaun!

March 13



SPRING MODEL TRAIN SHOW

March 26 – April 3



SPECIAL NOTE

THE HILLER AVIATION MUSEUM WILL REMAIN OPEN AND RESUME EVENTS IN ACCORDANCE WITH PUBLIC HEALTH ORDERS. EVENTS LISTED IN THIS EDITION OF BRIEFINGS MAY BE MODIFIED, RESCHEDULED OR CANCELLED IF NECESSARY TO COMPLY WITH FUTURE PUBLIC HEALTH GUIDANCE. PLEASE VISIT WWW.HILLER.ORG FOR UP-TO-DATE INFORMATION.



Smithsonian Institution
Affiliations Program

frameless silk parachute. Additional design improvements made parachutes safer and more reliable, and by the late 19th century they were a common accompaniment of balloon flight.

California's role in the development of parachutes began in 1911, when the first successful jump from an airplane – as opposed to a balloon – was made by Grant Morton at Venice Beach. Parachuting from a moving airplane proved to be quite different than jumping from a free-floating balloon. Balloons carried parachutes in bags that hung beneath their gondolas, simplifying deployment when the parachutist jumped. In contrast, Morton had to carry his carefully-folded parachute in his arms as he rode to altitude in a Wright Model B, and deployed it by throwing it from his body after he had fallen clear of the airplane.

In 1913 Georgia Broadwick became the first woman to parachute from an airplane, including a demonstration over Los Angeles, California, piloted by future aircraft designer Glenn Martin. An experienced balloon parachutist, Broadwick introduced an important development in parachuting – the ripcord. For many of her jumps, Broadwick relied on a parachute deployed by a static line



that connected to the airplane and pulled the parachute canopy out as she fell. In one demonstration, the static line fouled with the aircraft. On subsequent flights, Broadwick cut the static line loose and pulled it by hand after jumping. This improvement made free fall parachuting possible, and also made it feasible for parachutes to be issued to military pilots. Parachutes were widely worn by combat pilots during World War II.

After the war, sport parachutes were developed with an eye towards enhanced aerodynamic performance. The most important development was the ram-air parachute, developed in the 1960s. These rectangular-shaped parachutes were capable of forward flight and were steerable, allowing parachutists to pilot themselves down to precise landing points.

By the late 20th century, parachutes became indispensable in the exploration of space. The light weight of parachutes and their ability to be folded made them uniquely suitable for use in spacecraft recovery. Starting in 1961 both the Soviet Vostok and US Mercury spaceflight programs used parachutes to recover space

capsules, with Vostok cosmonauts taking the additional step of ejecting from their vehicle to parachute separately to Earth. Parachutes have been used continuously since then to safely land a variety of space capsules both on land and at sea, and to help slow winged spacecraft such as the US Space Shuttle following landings on traditional runways.



*Curiosity Rover
Landing:*

Parachutes have also been used for the robotic exploration of worlds beyond Earth. Missions to Venus, Mars, Jupiter and Saturn's moon Titan have all employed parachutes. Mars landings are particularly difficult, given the thin atmosphere present at the Red Planet. NASA's Ames Research Center in Mountain View has used its enormous wind tunnels to test supersonic parachutes designed at the Jet Propulsion Laboratory to meet the challenge of slowing down a spacecraft landing on Mars' dusty surface.

Green, not red, is the color at hand for a special event landing at the Hiller Aviation Museum on March 13. The museum welcomes back its "Leaping Leprechaun" as he celebrates St. Patrick's Day with a leap from a helicopter at an altitude of nearly 4,000 feet. Make your plans to join the festivities and come out to cheer for the green in a demonstration of a uniquely spectacular form of flight.



Resources

[The History of Ballooning](#), Fraser Simons, 2014

[Tiny Broadwick: The First Lady of Parachuting](#), Elizabeth Roberson, 2001

PRESIDENT'S PERSPECTIVE



A creative opportunity provided by the pandemic situation of the last two years has resulted in more outdoor programming at the museum. Accordingly, we have configured our courtyard into an attractive and functional space, including lighting for night use. The courtyard is now being used for everything from Water Rocket Rallies to Birthday Parties and even high school proms!

We are also pleased to welcome two accomplished Bay Area education professionals to our Board of Directors, Kate Wormington and Michelle Williams. Both came aboard during the last few months. We look forward to working with them and reaping the benefits of their experience and insights.

As we all continue to persevere during the pandemic, which appears to be showing the signs of transitioning into a more manageable "en"-demic, we have great hopes that more of the clouds of uncertainty will dissipate to let the sun shine through in the coming months. 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, even during this difficult time. There are great things coming and we look forward to seeing you at the Hiller Aviation Museum.

Jeffery Bass, President & CEO



**FLIGHT SIM ZONE
OPEN SAT & SUN
11 AM - 2 PM**



Hiller Aviation Museum

AVIATION CAMP 2022

High-Flying Explorations in Science!

Children entering Grades K-5 investigate aviation and science in week-long camps with hands-on experiments, flight simulation, aircraft cockpit visits and more!



Air & Space

Build and launch model rockets!



Aero Engineers

Design model aircraft, robots, drones and more!



Extreme Flight

Discover the largest, fastest and weirdest in flight!



Flight & Motion

Experiment with the physics of flight!



Invention Dimension

Create clever gadgets that fly, roll, and buzz!



Science Magic

Investigate chemicals, electricity and weather!

Sessions meet Monday-Friday 9 AM – 4 PM at the Hiller Aviation Museum in San Carlos.
Additional camp topics for Grades 5-7 are also available.

www.hiller.org • (650) 654-0200

The Hiller Aviation Museum is a 501(c)(3) public nonprofit organization, ID #94-3226411



HILLER AVIATION MUSEUM

Garden Steam Model Trains

**Saturday
March 19
11am - 3pm**



**March 26
through
April 3, 2022**

See up to five exquisitely crafted scale model train displays in a magical world of miniature landscapes, scenery and villages.



Trains included with museum admission

PEAXY / TOTAL DATA ACCESS FOR INDUSTRY

Biggest Little AIR SHOW

**Saturday
June 11, 2022*
10am-1pm**



Remote Control Air Show Featuring:
Gas & Electric Powered Airplanes
Helicopters * Jets * Drones
Rockets!

One FULL size
aerobatic airplane

*Date subject to change

CALENDAR OF EVENTS

MARCH

SUN, MAR 6 • 11AM
Glider Discovery Day

SAT, MAR 12 • 11AM – 3PM
Aviation Exploration Day

SUN, MAR 13 • 10AM – 12PM
Kids' Carnival
Leaping Leprechaun

SAT, MAR 19 • 11AM – 3PM
Model Steam Trains

SUN, MAR 20 • 11AM
Water Rocket Rally

SAT, MAR 26 – SUN, APR 3 • 10AM – 4PM
Spring Model Train Show Daily

SUN, MAR 27 • 2:30PM – 4PM
Flight Sim Rally

MAR 28 – APRIL 1
Aviation Camp

APRIL

FRI, APR 1 – SUN, APR 3
Spring Model Train Show

SUN, APR 3 • 2:30PM – 4PM
Flight Sim Rally

APR 4 – APRIL 8
Aviation Camp

SUN, APR 10 • 10AM – 12PM
Kids' Carnival

SAT, APR 16 • 10AM – 12PM
Easter Bunny Arrives by Helicopter

SUN, APR 24 • 11 AM
Glider Discovery Day

WED, APR 27 • 1:30 PM – 4:30 PM
Water Rocket Rally

MAY

SUN, MAY 1 • 11AM
Water Rocket Rally

SUN, MAY 8, 10AM – 12PM
Kids' Carnival

SUN, MAY 15 • 11AM
Glider Discovery Day

SAT, MAY 21 • 10AM – 2PM
Open Cockpit Day

SUN, MAY 22 • 2:30PM – 4PM
Flight Sim Rally

SUN, MAY 29 • 11AM
Water Rocket Rally

DRONE PLEX • SATURDAY
INVENTION LAB • SATURDAY
FLIGHT SIM ZONE • SATURDAY
BSA AND GIRL SCOUTS OFFERED EACH MONTH – SEE

FLYING LEPRECHAUN

SUN, MAR 13, 10AM-12PM

LEAPING LEPRECHAUN AT 11AM

Come celebrate St. Patrick's Day at the Hiller Aviation Museum with face painting, bounce house, "Pot of Gold" treasure hunt and a Skydiving Leprechaun! Event included with museum admission.

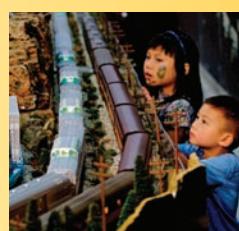


TRAINS & PLANES DISPLAY

SAT, MAR 26 –

SUN, APR 3

DAILY, 10AM-4PM



Join us for our annual Spring Model Train Show. This year there will be five separate model train layouts set up at the museum.

EASTER BUNNY ARRIVES BY HELICOPTER

SAT, APR 16, 10AM – 12PM

Join the Easter Egg-stravaganza on Saturday, April 16 from 10AM- 12PM, The Bunny arrives at 11AM. Get an Easter Egg straight from the Bunny and enjoy face painting and bounce house. All included with museum admission.



OPEN COCKPIT DAY

SAT, MAY 21,
10AM – 2PM

Join us for a unique opportunity to gain a pilot's eye perspective on many of the Hiller Aviation Museum's aircraft. The McDonnell Douglas A-4 Skyhawk, Boeing 747 and Hiller H-12 cockpits are always open, but on Open Cockpit Days the doors and canopies of many additional aircraft in the Museum's collection swing open to allow visitors a special chance to sit inside and explore the controls and instruments needed to fly these aircraft.



RDAYS & SUNDAYS, 11AM-3PM

URDAYS & SUNDAYS, 11AM-3PM

TURDAYS & SUNDAYS, 11AM-2PM

SCOUT PROGRAMS

- SEE WEBSITE FOR DETAILS

17TH BENEFIT GALA

VISIONS FROM THE STRATOSPHERE

SPECIAL THANKS

PLATINUM PRESENTING SPONSOR

Mark Jon Bluth

GOLD PREMIER SPONSORS

E. Ron & Penny Blake

SILVER SUPPORTER SPONSORS

Don Bliss • Ronald & Krista Moyes • Kate Wormington

BRONZE KEY SPONSORS

Asset Management • Jeffery Bass • Rick Gostyla & Sally Puccini

Marian Harris & Ross Ferguson • Carolyn Hiller • Steve & Char Hiller

Kirsten Komoroske • Robert & Julie MacLean • Hank Scherf & Vicki Sanders



AVIATION EXPLORATION DAY

TAKEOFF WITH CAREERS IN FLIGHT!



SATURDAY | MARCH 12 | 11AM-3PM



INFO

HILLER AVIATION MUSEUM
601 SKYWAY RD, SAN CARLOS, CA 94070

FEATURING AVIATION EXPERTS FROM:

- FREE PARKING & ENTRANCE TO THE EVENT

- OUTDOOR EVENT

- INTERACTIVE AIRPLANES DISPLAYS

- 747 COCKPIT

- SWAG AND PRIZES

PILOT TRAINING, FLIGHT ATTENDANTS,
AIR TRAFFIC CONTROL, AIRCRAFT MAINTENANCE,
AVIATION YOUTH PROGRAMS, US AIR FORCE,
AIRPORT OPERATIONS

QUESTIONS & EXTRA INFO

CHECKOUT OUR LINKTREE --->



SPONSORED BY SAN CARLOS AIRPORT
AND HILLER AVIATION MUSEUM





REGISTER NOW

WWW.HILLER.ORG/RUN

SUNDAY, JUNE 5, 2022



WALK
JOG
STROLL

on the
San Carlos Airport Runway!

Certified 5K and 10K courses & 2K fun run

**SPONSORSHIPS
NOW AVAILABLE!**

**VOLUNTEERS
NEEDED!**

SPECIAL NOTE

Event is subject to change based on public health guidelines and may be modified, rescheduled, cancelled, or conducted virtually if necessary. Please stay tuned to hiller.org/run for the latest info on the Runway Run.

EDUCATION PROGRAMS SPRING 2022

AVIATION CAMP—SPECIAL SPRING SESSION GRADES K-5

**MAR 28-APR 1
APR 4-8**

Explore the largest, smallest, fastest and weirdest in flight with a special Spring Break session of Extreme Flight! Featuring hands-on experiments, flight simulation and real aircraft, Aviation Camp is an exciting exploration of flight for children ages 5-10.



FAMILY SUNDAY PROGRAMS • SPRING 2022 • GRADES K-6

GLIDER DISCOVERY DAY • AGES 3+

**MAR 6, APR 24, MAY 15
11AM**

Learn the parts of an airplane, help to assemble a full-size aircraft mockup, and build and fly balsa gliders in a fun-filled investigation of flight!



KIDS' CARNIVAL • AGES 3+

**MAR 13, APR 10, MAY 8
10AM – 12PM**

Join the fun to paint a plane, build and fly a model aircraft, check out in an aircraft cockpit. On March 13, the carnival welcomes the Leaping Leprechaun in a spectacular parachute jump!



FLIGHT SIMULATOR RALLY • AGES 8+

**MAR 27, APR 3, MAY 22
2:30PM – 4PM**

Fly with the best of the best in a 30-minute simulation challenge in the Flight Sim Zone! Learn to perform a specific flight maneuver in a unique simulated aircraft, then take the controls to complete the mission of the month!

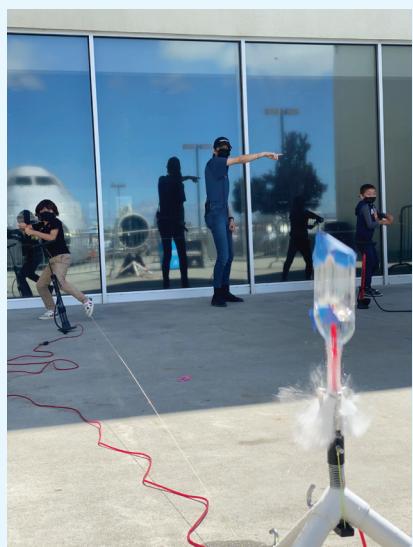


WATER ROCKET RALLY • AGES 5+

**MAR 20, MAY 1,
MAY 29
11AM**

**SPECIAL
WEDNESDAY
SESSIONS:
APR 27, 1:30 PM &
3:30 PM**

Get ready for splash-off! Learn about the history of rocketry, then use a soda bottle to construct and launch a water-powered rocket! Bring a recycled soda bottle from home, or purchase one at the Museum's Gift Shop on the day of the event.



All Sunday Family Events are included with Museum admission. Space is limited for some events and no-cost tickets or reservations may be required. Check www.hiller.org for capacity information, or request tickets at the Admissions counter on the day of each program.

AVIATION CAMP • SUMMER 2022

Registration is now open for this summer's Aviation Camp program!

See the flyer or visit www.hiller.org for more information. Online registration now available.

Make your plans now to join us this summer for an amazing experience in flight!



HILLER AVIATION MUSEUM

601 Skyway Road
San Carlos, California 94070

www.hiller.org

Non-Profit
Organization
US POSTAGE PAID
San Carlos, CA
PERMIT No. 96

Join Now!

Annual Membership Application

Or join online at www.hiller.org/member

Senior (age 65+) \$55

One adult plus 2 one-time use guest passes

Individual \$70

One adult plus 2 one-time use guest passes

Family \$105

2 adults and up to 4 children (17 & under)
plus discounts on Aviation Camp

Pioneer \$140

Family Membership benefits plus one
additional card for an adult, ideal for
caregivers (up to 3 adults per visit),
& 2 one-time use 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.

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

- Senior (65+) \$55 Barnstormer \$550
- Individual \$70 Adventurer \$1,000
- Family \$105 Explorer \$2,500
- Pioneer \$140 Navigator \$5,000
- Pilot \$275 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

Card #: _____ Exp. Date: _____

CSC: _____ Print Name on Card: _____

Signature _____



Donate Your Vehicle

1-855-550-4483

www.hiller.org/donate-vehicle



Thank you for your support.

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

