

Hiller Aviation Museum WHERE INSPIRATION TAKES FLIGHT

FLIGHTS OF MERCY HELICOPTER MEDICAL EVACUATION

by Jon Welte

n April 1944, Japanese forces in occupied Burma shot down a Stinson liaison aircraft that had been carrying three wounded British soldiers to safety. The pilot and all three passengers survived the downing, but their location behind enemy lines in remote and rugged terrain would have permitted little opportunity for their rescue—except for the presence of a new technology at the front.

> Flying an experimental

Sikorsky YR-4B

helicopter, pilot

Carter Harmon

First Air Com-

mando Group

flew to the crash

site to rescue the

downed pilot and

of the US Army's



Valérie André with a Hiller 360

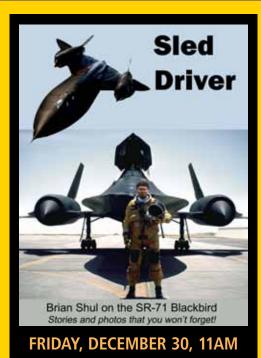
with a Hiller 360 soldiers. The early helicopter's performance limitations, combined with hot-and-high conditions at the crash site, limited Harmon to carrying only a single passenger at a time. Over two days Harmon, who later received the Distinguished Flying Cross, ferried the men one by one to a nearby landing strip where a larger fixed-wing aircraft flew them out to safety.

These pioneering flights were the first use of a helicopter for medevac, or medical evacuation. Throughout the first half of the 20th century, aviation promised a solution to a vexing problem—transporting injured soldiers and



civilians from combat zones and accident sites to medical facilities. Rapid advances in medicine meant that casualties provided with prompt attention were far more likely to survive, but all too often help was a long and difficulty journey away.

Shortly after World War II, Captain Valérie André, a doctor serving in the French Army, faced much the same situation in her efforts to treat soldiers in French Indochina (modern day Vietnam, Cambodia and Laos). An experienced airplane pilot, Capt. André realized that the helicopter provided a ready solution to the problem of medical evacuation. She returned to France to earn a helicopter rating and arrange for the purchase of two Hiller 360 helicopters, which she had shipped to the front lines. Over a period of 3 years Capt. André flew over 100 combat missions, some under enemy fire, to insert herself into areas with wounded soldiers in need of treatment and/ or to evacuate casualties to proper medical facilities that might have been hours or even days away by surface transportation. André chose the Hiller 360, manufactured at the Menlo Park factory of the Hiller Aircraft Corporation, for its simplicity and reliability. The aircraft was easy to maintain in the field and, crucially, could carry stretchers mounted externally for the transport of seriously wounded patients.







Smithsonian Institution Affiliations Program Valérie André was ultimately promoted to general and received the National Order of Merit among other decorations in recognition of her service to France.

Elsewhere in Asia, the United States further developed the role of helicopters for medevac operations. During the Korean War the US Army and Marine Corps were bedeviled by rugged terrain and poor roads. Helicopters such as the Hiller UH-12 (derived from the Hiller 360) and Bell 47 were tasked with transporting wounded soldiers to medical facilities. These helicopters evacuated an estimated 20,000 wounded servicemen during the war. By the end of the Korean War the fatality rate for casualties wounded in battle



had been cut nearly in half compared to World War II due largely to developments in medevac procedures and technology.

Helicopter technology continued to advance, and when the United States joined the Vietnam War some ten years later the mission had been largely taken over by the new Bell UH-1 Iroquois, universally known as the "Huey". Powered by turbine engines and able to carry heavier loads than earlier piston-powered Hiller, Bell and Sikorsky aircraft, the UH-1 could carry patients internally rather than strapped to the helicopter's exterior. This made it possible for medical personnel to begin basic treatment while the patient was in the air prior to reaching the medical center. Over one hundred thousand US soldiers were evacuated via medevac during the Vietnam War, and the ability to provide treatment in the air caused the fatality rate to fall in half again compared to the mid-1950s.

By 1969, soldiers wounded in action in Southeast Asia had lower mortality rates than drivers and passengers involved in serious automobile accidents on American highways, suggesting that a medevac program could provide lifesaving support to civilians in peacetime. A pilot effort to evaluate helicopter medical evacuation services was introduced that year in Mississippi. Three Fairchild Hiller FH-1100 helicopters were purchased and operated to transport patients to medical facilities in cases of extreme need. The program was deemed a success, and throughout the 1970s medevac helicopters and helipads Stanford Life Flight helicopter



at major hospitals grew increasingly common.

Today, modern medevac operators continue the tradition of using helicopters to quickly and safely transport individuals with serious injuries or critical illnesses directly from incident sites to medical centers able to provide life-saving treatment. Stanford Life Flight, a local operator, embodies the best practices in use for civilian medevac helicopter operations. An Airbus Helicopters EC-145 allows operations in all weather conditions. The aircraft's raised tail boom and rear clamshell doors permit stretcher loading directly into the rear of the aircraft. Specially-trained flight nurses provide in-flight emergency care comparable to or better than what a ground-based emergency medical technician could provide, and medical centers around the San Francisco Bay Area train to operate with Life Flight to receive patients requiring urgent and immediate attention. The Bay Area also hosts medevac resources of the uniformed services, with United States Coast Guard Air Station San Francisco operating its Eurocopter HH-65 helicopters from San Francisco International Airport, and the California Air National Guard's 129th Rescue Wing at Moffett Field in Mountain View flying Sikorsky HH-60s along with fixed-wing Lockheed C-130 tanker aircraft.

The Hiller Aviation Museum's collection preserves glimpses of the early development of medical evacuation flights, while San Carlos Airport supports medevac operations in the present day. A Hiller 360 similar to those first flown by General Andre is displayed in the main Gallery, and a Hiller H-23 configured as a US Army medevac aircraft is suspended from the Gallery's ceiling. San Carlos Airport serves as an essential waypoint for modern medevac aircraft, with Stanford Life Flight and the US Coast Guard frequent visitors for both training and operational missions.

The exploits of General André feature prominently in the Museum's new Women in Aviation exhibit, which documents the exploits of female aviators from the early 20th century through the modern day. On Saturday, January 14th the Hiller Aviation Museum will dedicate

PRESIDENT'S PERSPECTIVE



e look forward to events in January in which we celebrate the aviation accomplishments of women. Coinciding with these activities will be the unveiling of our updated "Women

in Aviation" exhibit which features the stories and exploits of twenty four famous women aviators. The exhibit is designed to be extended and we will continue to add content to the exhibit over time.

The museum also continues to expand its impact and focus with K-12 schools in the Bay Area. The museum's aviation-centered STEM programs dovetail beautifully into science curricula and school field trip visits to the museum are being reserved at a record pace. Joining our education team, led by Jon Welte, is a new talented addition to the staff of the museum, Linh Fanger. She is hitting the ground running, helping make the most of our hands-on activities and learning assets in her role as Director of Education.

The museum's 5th annual Aero Design Challenge was successfully undertaken this October and over 400 youth from the Bay Area spent two days at the museum tackling the challenge of designing and flying drones. We are especially thankful for the event's lead sponsor, SAP, and partners who helped with the program including the Bay Area Science Festival and aviation students from SJSU.

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

this new exhibit and open it to the public. Come join the festivities and celebrate an important dimension in the history of aviation.

Resources

Andre, Valerie. Madame le General, 1988. https://www.mercyflight.org/content/pages/medevac, downloaded 1 November 2016. https://stanfordhealthcare.org/health-careprofessionals/lifeflight.html, downloaded 1 November 2016. Whitcomb, Darrel, Call Sign Dustoff, 2011.

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the controls.



You Tube



SR-71 PILOT BRIAN SHUL, FRIDAY 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 26, 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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HILLER AVIATION MUSEUM

To join our Business Circle, contact Rebecca Duran, VP of Development: duran@hiller.org or 650-654-0200 x203

www.hiller.org/join-and-support/business-circle



DECEMBER

FRI, DEC 2 Home School Friday

SAT, DEC 10 • 10:30AM & 1PM Starlab Sky Show

> MON-FRI, DEC 19-23 Aviation Camp – Extreme Flight

WED, DEC 21 • 11AM Perfect Paper Plane Workshop

WED, DEC 21 • 10:30AM & 1PM Starlab Sky Show

SAT, DEC 25 • CLOSED ALL DAY

MON-FRI, DEC 26-30 Aviation Camp – Flight Science Lab/X-Plane Pilot

> TUE, DEC 27 Drone Build-a-Thon

WED, DEC 28 • 11AM Happy Birds

WED, DEC 28 • 10:30AM & 1PM Starlab Sky Show

> THU, DEC 29 Drone Build-a-Thon

FRI, DEC 30 • 11AM SR-71 Pilot Brian Shul

SAT, DEC 31 • 10AM-1PM Noon Years Party

GOURMET FOOD TRUCK DRONE PLEX • SATURDAYS & SI INVENTION LAB • SATURD FLIGHT SIM ZONE • SATUR BOY AND GIRL S OFFERED EACH MONTH – WWW

WINTER RAFFLE				
1st Prize: DJI Phantom 3 Standard Drone!				
2nd Prize: Drone Day Build-a-Thon All Inclusive Entry!				
3rd Prize: MOTA JETJAT Nano Drone Quadcopter!				
Tickets now available in the Gift Shop!				
Tickets may also be purchased by phone at 650-654-0200 x203				
or complete form below for mail or fax entries.				
Hiller Aviation Museum Winter Raffle Hiller Aviation Museum Winter Raffle				
Attn: Development Department Attn: Development Department				
601 Skyway Road 650-654-0220				
San Carlos, CA 94070				
Raffle Tickets: \$10 each, 3 for \$20, or 10 for \$50				
Drawing: December 31, 2016				
Raffle Entry Form must be received by: 5 pm on Friday, December 30, 2016.				
Name: # of Raffle Tickets: \$				
Address:				
Phone: Email:				
lease make checks payable to Hiller Aviation Museum or list credit card info below.				
Name on Card:				
Type of Credit Card: Card Number:				
Expiration: Security Code: Signature:				
Questions? Please call the Development Department at 650-654-0200 ext. 203.				
More details and official rules available at www.hiller.org/raffle.				

OF EVENTS

JANUARY

MON-FRI, JAN 2-6 Aviation Camp – Drone Rangers

> WED, JAN 4 • 11AM **Drone Fest**

SAT, JAN 7 • 10AM-2PM Open Cockpit

> FRI, JAN 13 Home School Friday

SAT, JAN 14 • 10AM-2PM Women in Aviation Day

MON, JAN 16 • 10:30AM & 1PM Starlab Sky Show

FEBRUARY

FRI, FEB 3 Home School Friday

SAT, FEB 4 • 11AM-2PM Flying Football Fun Fest

SAT, FEB 11 • 10AM-3PM Garden Model Train Railroad

MON-FRI, FEB 13-17 • 3:30PM Engineers Week

MON, FEB 20 • 10:30AM & 1PM Starlab Sky Show

MON-FRI, FEB 20-24

Aviation Camp – Aero Engineers WED, FEB 22 • 11AM

Drone Fest

S • WEDNESDAYS, 11AM-2PM, JNDAYS, 10:30AM-12PM & 1PM-3PM AYS & SUNDAYS, 10:30AM-4PM RDAYS & SUNDAYS, 11AM-2PM, COUT PROGRAMS V.HILLER.ORG/SCOUT-PROGRAM

FOR MEMBERS ONLY -**EVENING COCKTAIL RECEPTION**

FRIDAY, FEBRUARY 3, 2017, 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 Saturday, 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 Saturday, December 31 at the Hiller Aviation Museum.Event included with museum admission.

OPEN COCKPIT DAY

JANUARY 7, 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 4,

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 11, 10AM - 3PM

The Bay Area Garden Railroad Society's waisthigh 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.







10AM - 1PM





WINTER PROG

ENGINEERS WEEK

February 13-17

Launch a journey in innovation and prepare for National Engineers Week! This year's exploration into the Engineering Design Process will harness the power of electricity as participants invent, construct and test a device using a small electric motor to solve an aviation-themed problem.

Engineers Week programs are offered 3:30- 5PM Monday through Friday, February 13-17. There is no charge to join these programs but space is limited and advance registration is required at www.hiller.org.





DRONE BUILD WORKSHOP

Drone Build-a-Thon

Drone Construction, Certification and Training for Adults Tuesday, December 27th & Thursday, December 29th

Aerial Sports League's popular "Drone Day Buildathon" course now includes the newest FPV drone racing technology. Do you want to learn about racing drones but don't have a lot of time? ASL's innovative approach to drone education is

perfect for individuals, or small teams of teens, adults and families with kids. ASL provides all the hardware, guidance, hands-on training and FAA registration assistance to provide you with a complete beginner's experience— Plus you get to keep the drone and all the hardware!

Advance registration required for all Drone Build-a-Thon workshops. Visit www.hiller.org for more information, future dates, or to enroll today.



HOME SCHOOL MONDAYS

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. Flight simulation programs are available at 12:30 PM for an additional fee. No reservations are necessary,



space is available on a first-come, first-served basis. December 2, January 13, February 3, March 3

WINTER AVIATION CAMPS

December, January and February Programs Available Take to the skies with special Aviation Camp program for Grades K-6! Five different topics are available, each offering hands-on experiments, flying models, flight simulation and encounters with real aircraft.

EXTREME FLIGHT • December 19-23 • Grades K-6 FLIGHT SCIENCE LAB • December 26-30 • Grades K-5 X-PLANE PILOT • December 26-30 • Grades 5-8 DRONE RANGERS • January 2-6 • Grades K-6 AERO ENGINEERS • February 20-24 • Grades K-6

Winter Camp programs are available Full Day (9 AM—4 PM), and extended hours are available for an additional fee. Partialweek 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!









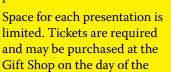
RAMS FOR KIDS

STARLAB SKY SHOW

10:30 AM, 1:00 PM • Dec. 10, 21, 28, Jan. 16, Feb. 4, 20

Enter the Hiller Aviation Museum's newly-upgraded Starlab Planetarium and take a spectacular trip through the glitter-

ing stars, planets and constellations of winter. Identify star patterns visible from your own backyard this season during a special 30-minute presentation.



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 for more information.

INVENTION & EXPLORATION

Drop-In Weekend/Holiday Activities The Hiller Aviation Museum offers special interactive activities for families on weekends and select holidays. Invention and Exploration destinations include:



•Invention Lab, open 10:30AM - 4PM •Flight Sim Zone, open IIAM - 2PM •FMX flight simulation, open IIAM - 2PM •Drone Plex, open 10:30AM - 12PM & IPM - 3PM

Additional fee required for some activities. Visit www.hiller.org for more information.

DRONE PLEX

Wednesdays, January 4 & February 22 • 11AM-2PM

Remotely operated multi-rotor aircraft are finding their way into our everyday lives as creative designers and operators discover new missions uniquely suited to these tiny flying robots.

Join a special presentation offering brief flight demonstrations of many of the most popular

multi-rotor designs flying today and exploring

the many missions that they fly.



PERFECT PAPER PLANES Featuring Paper Airplane Champion John Collins

Wednesday, December 21 • IIAM-12PM



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!

HAPPY RIRDS

Parrots, Macaws and Cockatoos Wednesday, December 28 • IIAM-12PM

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!



WOMEN IN AVIATION

Saturday, January 14 • 11AM-2PM

Women have been involved in the pursuit of flight from its earliest days, and the story of pioneering female aviators has always been a part of many artifacts on display at the Hiller Aviation Museum. On Saturday, January 14th the Museum premiers an all-new Women in Aviation exhibit with a special event featuring aircraft and modern-day aviatrixes



from across the Bay Area. Planned speakers and exhibits will showcase flying women from local flight schools, commercial airlines, emergency services, air show aviators and more. Hear their inspirational stories, explore their visiting aircraft, and see how the Hiller Aviation Museum's newest exhibit commemorates their contributions to aerospace. All events included with

AVIATION CAMP SUMMER 2017

Dates and topics available online January 2, 2017

Register early for best selection! www.hiller.org





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

SPECIAL HOLIDAY SHOPPING

Friday Nov 27 through Sunday Nov 29

Museum Members receive a 25% discount in the Gift Shop Friday, November 25 through Sunday, November 27 Only

Become a Museum Member and take advantage of this great holiday offer!

Join Now!

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.

Thank you for your support.

Annual Membership Application Or join online at www.hiller.org/member

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

□ Senior (65+) \$50	□ Barnstormer \$550		
□ Individual \$65	□ Adventurer \$1,000		
□ Family \$90	□ Explorer \$2,500		
□ Pioneer \$125	□ 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:Da	ytime Phone:		
Email:			
This is a gift membership from:			
Payment Amount:	□ VISA	□ мс	\Box AMEX
Card #:	Exp. Date:		
CSC: Print Name on Car	d:		
Signature			

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



An Aviator's Paradise,

Shop on line: www.hiller.org, Gift Certificates available!