



AAHS FLIGHTLINE

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April 14, 2014, Solar Impulse 2 is rolled outside for its first series of tests. (Photo by Jean Revillard via Solar Impulse Project)

First Attempt Solar-Powered Round-the-World Flight

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Launched March 9, 2015, from the start-finish point of Abu Dhabi in the United Arab Emirates, pilots and flight organizers Bertrand Piccard and André Borschberg have begun what ultimately could be the first circumnavigation of the earth by a solar-powered aircraft. This odyssey is tentatively planned to take about six months possibly finishing late July or early August. The flight is currently in China waiting for favorable weather to attempt a five-day flight across the Pacific to Hawaii. Their aircraft, Solar Impulse 2 (SI2), needs weather that will allow it to maximize battery charging during daylight for sustaining flight at night.

The Pilots

Piccard is best known for his record of commanding the first non-stop round-the-world (RTW) flight by a balloon. This flight captured seven FAI records including those for the longest flight

recorded in aviation history for both distance and duration. Piccard comes from a family of noted explorers and scientists. He is a pioneer in hang-gliding and microlight flying in Europe and is a European hang-glider aerobatics champion.



André Borschberg and Bertrand Piccard before the launch of the RTW flight in Abu Dhabi. (Photo from the Solar Impulse Project)

[Blue colored text link to relevant information.](#)



SI2 in a shake-down flight over Abu Dhabi, UAE, in preparation for the RTW flight on March 1, 2015. (Photo from the Solar Impulse Project)

Borschberg is a co-founder of the Solar Impulse project. He is an engineer from the Swiss Federal Institute of Technology (EPFL) and a graduate of the MIT Sloan School in management science. Borschberg was trained as a Swiss Air Force pilot and currently holds eight FAI world records for distance, altitude and duration in a solar-powered airplane.

Route and Team

The planned route of the flight takes SI2 from Abu Dhabi to stops in Muscat, Oman; Ahmedabad and Varanasi, India; Mandalay, Myanmar; Chongqing and Nanjing, China. From Nanjing, comes the estimated five-day duration flight to Hawaii and then on to Phoenix. They plan to finish their crossing of the U.S. in New York City at JFK with one intermediate stop in the central U.S. that will be determined by weather. From New York City, SI2 will cross the Atlantic to either Southern Europe (Spain or Portugal) or North Africa, and then on to the final leg back to Abu Dhabi.

The Solar Impulse project has spanned more than 12 years of feasibility studies, concept, design and construction. The project has involved 50 engineers and technicians and engaged another 80 technology partners. More than 100 advisers and suppliers have also been involved in the project. This effort has produced one prototype (Solar Impulse 1 (SI1, HB-SIA) and the RTW ship, SI2, HB-SIB.

The Aircraft

Designed, in part, to promote clean energies, SI2 was preceded by an initial design/proof in concept aircraft, Solar Impulse. This aircraft was used to test and validate concepts and equipment and is most noted for its 2013 cross-country flight from San Francisco to New York with intermediate stops in Phoenix, Dallas, Saint Louis and Washington, D.C.

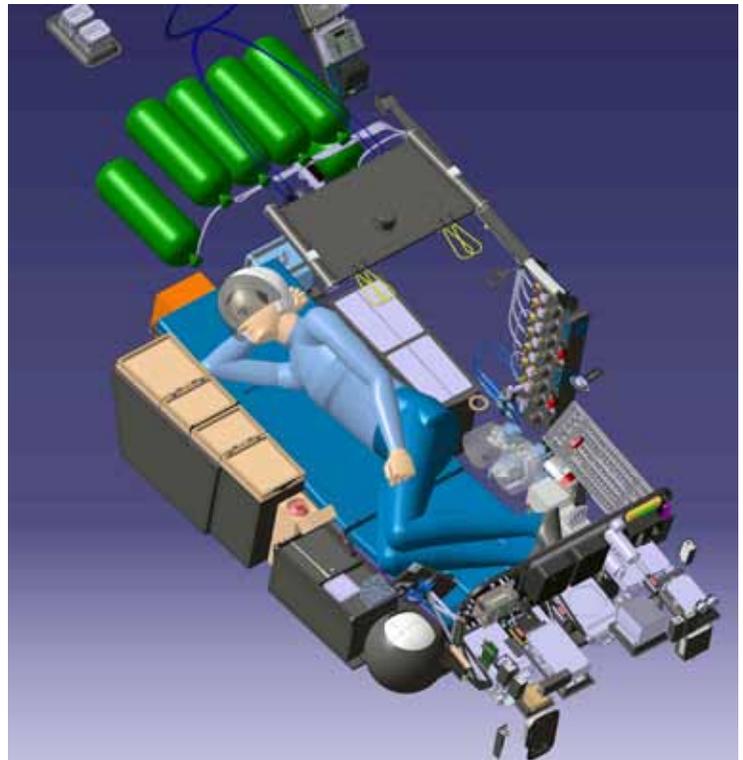
The two Solar Impulse planes are the only manned aircraft of perpetual endurance - capable of flying day and night on solar power, without a drop of fossil fuel.

SI2 was officially rolled out on April 9, 2014, and took off on its maiden flight on June 2, 2014, and spent the summer of 2014 being flight tested in preparation for the world flight.

This single-seater aircraft's primary structure is made of carbon fiber. It has a wingspan of slightly more than 236 ft (72m), which is greater than a Boeing 747-800. It tips the scales at 5,070 lbs (2,300 kg) at gross weight. Roughly 17,000 solar cells are built into the upper wing, horizontal tail and upper

fuselage. They supply power to four electric motors and a bank of lithium batteries – the batteries supplying power during night flight. These batteries weigh in at 2,077 lbs (633 kg) and probably represent the heaviest component of the aircraft at 27.5 percent of the gross weight.

SI2 has a larger, non-pressurized cockpit and advanced avionics, including an autopilot to allow for multi-day transcontinental and transoceanic flights. Supplemental oxygen and various other environmental support systems allow the pilot to cruise up to an altitude of 39,000 ft (12,000 m).



Computer Aided Design (CAD) model of the cockpit showing the pilot in the resting position. Some legs of the flight are anticipated to take multiple days necessitating a design that provides the pilot an opportunity to take rest breaks while the plane flies on autopilot. (Photo from the Solar Impulse Project)

RTW FLIGHT

Leg	Start	Origin	Destination	Flight time	Distance	Avg. speed	Max. altitude	Pilot
1	9/Mar/15	Abu Dhabi, UAE	Muscat, Oman	13 hrs 1 min	238 nmi (441 km)	18.3 kn (33.9 km/h)	20,942 ft (6,383 m)	A. Borschberg
2	10/Mar/15	Muscat, Oman	Ahmedabad, India	15 hrs 20 mins	802 nmi (1,485 km)	52.3 kn (96.9 km/h)	29,114 ft (8,874 m)	B. Piccard
3	18/Mar/15	Ahmedabad, India	Varanasi, India	13 hrs 15 mins	656 nmi (1,215 km)	49.5 kn (91.7 km/h)	17,001 ft (5,182 m)	A. Borschberg
4	18/Mar/15	Varanasi, India	Mandalay, Myanmar	13 hrs 29 mins	755 nmi (1,398 km)	56.0 kn (103.7 km/h)	27,000 ft (8,230 m)	B. Piccard
5	29/Mar/15	Mandalay, Myanmar	Chongqing, China	20 hrs 29 mins	788 nmi (1,459 km)	38.4 kn (71.2 km/h)		B. Piccard
6	20/Apr/15	Chongqing, China	Nanjing, China	17 hrs 22 mins	726 nmi (1,344 km)	41.8 kn (77.4 km/h)	14,000 ft (4,300 m)	B. Piccard
7	31/May/15 ¹	Nanjing, China	Hawaii, USA	120 hrs (planned)	4,413 nmi (8,172 km) (planned)			A. Borschberg
8		Hawaii, USA	Phoenix, AZ, USA	100 hrs (planned)	2,542 nmi (4,707 km) (planned)			[
9		Phoenix, AZ, USA	TBD (mid-USA)	30 hrs (planned)	1,100 nmi (2,030 km) (planned)			The Mid-USA destination will be decided just before take-off from Phoenix Sky Harbor International Airport.
10		TBD (mid-USA)	New York, USA	20 hrs (planned)	775 nmi (1,436 km) (planned)			[
11		New York, USA	TBD (Southern Europe or Morocco)	120 hrs (planned)	3,099 nmi (5,739 km) (planned)			[
12		TBD (Southern Europe or Morocco)	Abu Dhabi, UAE	120 hrs (planned)	3,156 nmi (5,845 km) (planned)			

1 - Flight was aborted and landed at Nagoya, Japan, due to unfavorable weather enroute to Hawaii. Currently waiting for more favorable weather patterns over the Pacific in order to resume the flight.

General Characteristics

- **Crew:** 1
- **Length:** 73.5 ft (22.4 m)
- **Wingspan:** 236 ft (71.9 m)
- **Height:** 20.9 ft (6.37 m)
- **Wing area:** 17,248 photovoltaic cells cover the top of the wings, fuselage and tailplane for a total area of 269.5 m² (rated at 66 kW peak)
- **Loaded weight:** 5,070 lb (2,300 kg)
- **Powerplant:** 4 × electric motors powered from solar cells and 4 x 41 kWh lithium-ion batteries (633 kg), providing 13 kW, electric motors (17.4 hp) each
- **Propeller diameter:** 13.1 ft (4 m)
- **Take-off speed:** 20 kts (36 km/h)

Performance

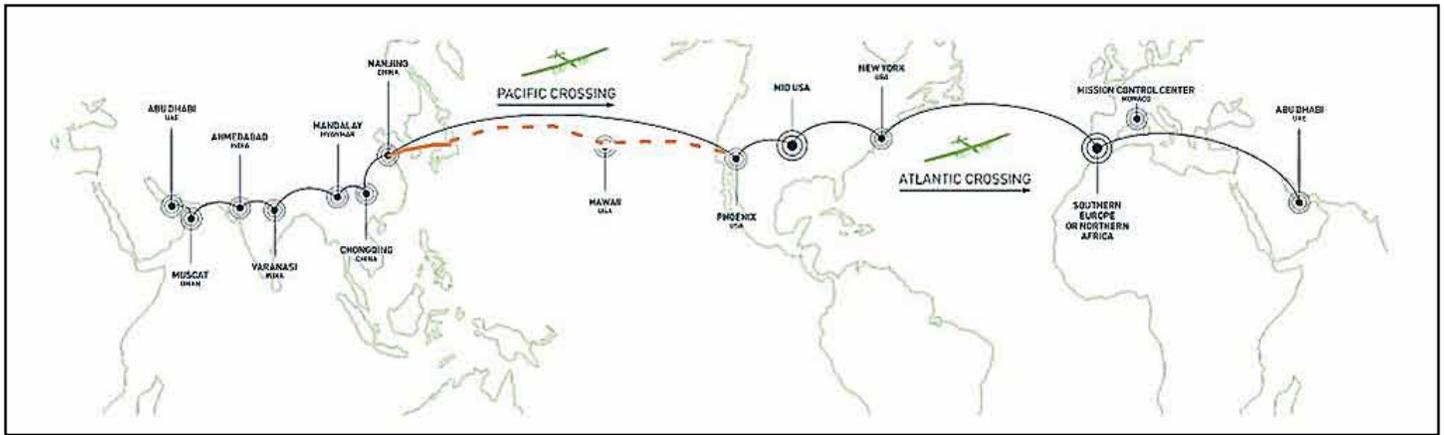
- **Maximum speed:** 77 kts (140 km/h)
- **Cruise speed:** 49 kts (90 km/h) (33 kts (60 km/h) at night to save power)
- **Service ceiling:** 27,900 ft (8,500 m) with a maximum altitude of 39,000 ft (12,000 m)

Pacific Leg

Solar Impulse took off on its seventh leg of the flight on May 31, attempting to fly from Nanjing in the People's Republic of China, to Hawaii in the United States. The flight was aborted to Nagoya, Japan due to unfavorable enroute weather. The plane sustained wind damage on the ground which will delay the flight until repairs can be made. The seventh leg will require the solo pilot to fly the zero-fuel airplane about 8,172km (3,500nm) for an estimated elapsed time of 95 hours. This flight across the Pacific is a feat of endurance for the pilot, and for the support teams that constantly monitor and plan for SI2's route. Over a period of four days, the pilot will head for the small target of the Hawaiian Islands.

Critical Factors for this Leg

The team is currently waiting in Nagoya repairs and favorable weather for this significant leg – the longest of the trip and by far the longest ever made by a solar-powered aircraft. There are four critical conditions that must be carefully balanced in order to achieve a successful flight. These conditions include



Proposed route of the SI2 for its RTW flight. The Pacific-crossing route modifications showing the diversion to Nagoya, Japan, and on to Hawaii shows current planning. (Drawing from the Solar Impulse Project)

maximizing energy management, minimizing flight duration, pilot rest time and finding the right conditions for takeoff and landing.

Maximizing energy management primarily focuses on the forecast weather conditions over the route during the five day flight period. During the day, cloudy conditions limit the amount of energy that the solar panels can receive. The absolute optimum conditions would be locally clear around the aircraft during the flight – a situation that may be impossible to achieve. To avoid flying in clouds at night SI2 would have to fly higher and thus consume more energy. Clear mornings at sun rise are important because the state of charge of the aircraft’s batteries will be at their lowest after cruising during the night. Sunrise may be the most critical points of the flight.

Optimizing flight duration examines the tradeoffs of forecast winds over the route. Crosswinds would extend the flight duration by effectively slowing the plane’s progress. This could potentially add another night challenge for the plane and an already tired pilot. On the flip side, being able to ride the jet stream for a significant portion of the flight would provide higher ground speed and a shorter flight.

Rest periods for the pilot are essential to the flight’s success. Turbulence and cloudy conditions that force the pilot to have to constantly be changing flight levels or maintaining control increases pilot fatigue while simultaneously robbing him of the opportunity to get any rest.

Takeoff and landing requirements have to be similarly favorable to the rest of the route in order to achieve success. While waiting for the right conditions for takeoff is fairly easy, the challenge of forecasting weather conditions at touchdown five days later is the challenging component.

The Mission Engineers in Monaco Mission Control Center are working hard to find the good weather window for a five-day-and-night crossing from Nanjing (now Nagoya) to Hawaii. Different routes are being analyzed.

For additional information and to follow the progress of the flight, go to the Solar Impulse website (www.solarimpulse.com) where you will find videos and photos of the aircraft and can link to their Facebook, Google+ and Twitter accounts to get up-to-date status reports. →



LEFT: SI2 during construction showing the solar panel array on the top of the wings, fuselage and horizontal stabilizer. RIGHT: The SI2 cockpit during construction. (Photos from the Solar Impulse Project)

EAA AirVenture 2015 Preview

The Experimental Aircraft Association's (EAA) 2015 AirVenture kicks off July 20 and runs through July 26. Two of the attractions at this year's event are the Airbus A350-900 XWB (eXtra Wide Body), MSN001, and the Airbus sponsored Perlan Project featuring its high-altitude, pressurized glider.

The Airbus A350 XWB will arrive on Monday, July 20, with an aerial demonstration as part of that day's afternoon airshow. The two-engine aircraft is designed to transport more than 300 passengers on medium- to long-haul operations that range up to 7,750 nautical miles (8,918 statute miles). After public tours of the aircraft on Tuesday, July 21, at AirVenture's Boeing Plaza, the A350 XWB will perform another aerial demonstration during the air show on Wednesday, July 22, prior to its departure. While at AirVenture, the aircraft will be on static display with tours available.



Airbus A350-900, MSN001, taxis to the runway for takeoff. (Photo by Sylvain Ramadier from Airbus Industries)

Airbus A350 Series

Making its first flight in June 14, 2013, the A350-900 is the first of the series that includes the -800 and -1000. The extra wide body design features nine seats across with double aisles (3x3x3) for the standard coach configuration and six seats across (2x2x2) in first class. High-density coach seating of 3x4x3 is also available. As airlines are backing away from four-engine long-haul aircraft the A350 series is targeted directly at Boeing's older generation 777 design and their 787 Dreamliner markets. Looking at the economics of these competing aircraft one finds some interesting statistics. The table below shows a few of these.

Airbus currently has orders for 780 A350s – 16 for -800s, 595 for -900 and 169 for -1000. More than 40 customers have placed orders for the A350 including United Airlines (35 -1000s), Delta Airlines (25 -900s) and US Airways (22 -900s).

Airbus Perlan Mission II

In addition to experiencing the A350, AirVenture visitors will be able to see the new glider just completed by the Perlan Project. Airbus Group announced its partnership with (and title

sponsorship of) the Airbus Perlan Mission II at EAA AirVenture 2014, supporting the Project's effort to explore the earth's upper atmosphere and ozone layer. The Airbus Perlan Mission II aims also to set new altitude records by flying the purpose-built, high-altitude, pressurized glider to 90,000 feet – 40,000 feet higher than any other unpowered, manned, wing-borne aircraft has flown. That flight, which will use stratospheric mountain waves and the polar vortex to sustain flight, is projected to take place in South America in 2016. Perlan Project representatives will update progress on the aircraft's flight-test program and the mission during this year's EAA AirVenture.

On August 29, 2006, Steve Fossett and Einar Enevoldson, flying a modified Glaser-Dirks DG-500M sailplane (Perlan 1), became the first pilots to soar to an altitude of 50,671 ft. in an unpowered aircraft (sailplane), breaking the previous record by 1,662 feet. This was a production motor-powered version from which the motor was removed and replaced by liquid oxygen tanks used to provide air to the pressure suits the pilots were wearing. They had to abandon the flight at this altitude because their pressure suits had expanded to the point that they could

	A350-800	A350-900	A350-1000	777-300ER	787-8	787-9
Price (est.)	\$152M	\$170M	\$200M	\$281M	\$157M	\$250M
Typical Seating	276	315	369	365	210	250
Fuel Cost / nm	\$26.51	\$28.22	\$30.91	\$36.23	\$24.53	\$25.90
Fuel Cost / seat / nm	9.62¢	8.96¢	8.38¢	9.93¢	11.68¢	10.36¢
Takeoff run (MTOW)	8,000 ft	8,000 ft	8,000 ft	10,500 ft	10,300 ft	-
Landing Field Length (MLW)	4,000 ft	4,000 ft	4,000 ft	7,000 ft	-	-
Max Takeoff Weight	546,700 lbs	592,900 lbs	681,000 lbs	775,000 lbs	380,000 lbs	553,000 lbs
Range	8,250 nm	7,750 nm	8,000 nm	7,930 nm	8,200 nm	8,500 nm



The Perlan project team with the fuselage of the Perlan 2. (Photo from the Airbus Perlan Project)

barely operate the flight controls. They were flying out of El Calafate, Argentina. Perlan 1 is now on display at the Museum of Flight in Seattle, Washington.

Enevoldson, a former NASA test pilot and founder of the Perlan Project, has continued to pursue the study of upper atmospheric manned flight in unpowered aircraft. Perlan Mission II is the next phase in this project and will use a custom-built, pressurized sailplane, Perlan 2, with the goal to achieve sustained flight using stratospheric mountain waves and polar vortex to altitudes higher than ever flown by any other manned winged aircraft.

The Perlan 2 will fly in a near vacuum with air density at less than two percent of that at sea level. It must be extremely strong and light like a space ship, but extremely stiff to prevent flutter. Flying at the edge of space, the Perlan 2 must have the reliability and life support systems of a space ship. The combination of very thin air and extremely low temperatures is similar to the environment that would be encountered flying on Mars. At such low air density the glider must fly at near transonic speeds to create enough lift to sustain flight. At these speeds shock waves can form and flow separation can ruin performance. The Perlan 2 requires a new and highly efficient aerodynamic design. These flight attempts are targeted to begin in the 2015/2016 period. →



Artist's rendering of the Perlan 2 high-altitude sailplane. (Photo from the Airbus Perlan Project)

Best of the Best

By Earl See

At the end of each year, the AAHS asks its membership to vote for the **Best Article** and **Best Artist** published in the *AAHS Journal*. While all the articles and paintings for CY2014 (Vol. 59) are outstanding works representing hours of research and laboring over the word processor or canvas, one or two of each tend to appeal just a bit more than the rest.

The choice for **Best Article** is Michael Gough's *The Pulitzer Air Races and the Greatest U.S. Air Meet, St. Louis, 1923*. Competition this year was close among the number of 24 eligible articles, with "Pulitzer" the winner.

The **Best Artist** award goes to Gerald Asher's *Last Clipper from Wake*, depicting the last Pan American Martin M-130 Clipper out of Wake Island before it fell to the Japanese during WWII. Asher's painting won with an outstanding 44 percent of the votes cast for the six paintings eligible. →



Gerald Asher's winning painting, Last Clipper from Wake.

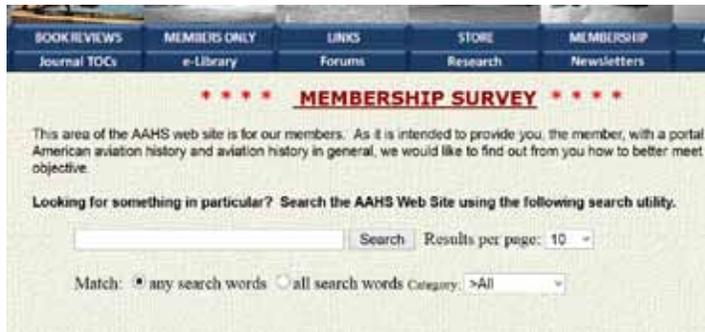


A recent addition to the AAHS photo archives is this Travel Air B-4000, NC9917, c/n 1103, photographed at the EAA Fly-in at Oshkosh, Wis., in August 1987. (Hendrickson photo from the Paul Minert collection via Paul Schiding collection, AAHS-D000127)

AAHS Website Update

We have been working hard on a number of updates and enhancements to the AAHS website. Some of these are transparent changes necessary to stay abreast of technology, but a number of enhancements have been and are being made to improve the visitor's experience while offering expanded content.

Probably the most significant enhancement that the AAHS website visitor (member) will find is an enhanced, Google-like, search engine. One of the current limitations for either printed or electronic versions of the *AAHS Journal* is the lack of availability of a detailed index. The new search engine will now allow you to look for key words or phrases in ALL online content. Want to know everywhere "Doolittle" is referred to on the site? Simply plug in the name and the search engine will look through all the online *Journal* articles, e-books, e-periodicals, and web pages. You'll get a rank ordered list of links to the items found.

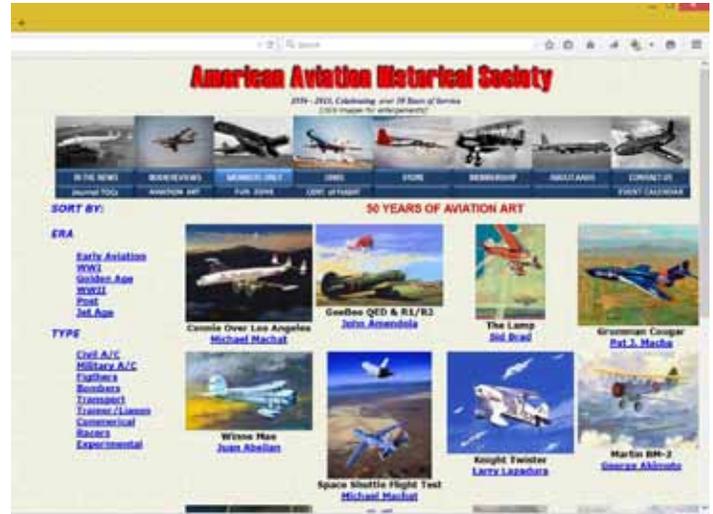


The search tool, found on the Members Only landing page, also supports wild cards (Sam???) and strings enclosed by quotes ("Waco QCF").

For you early aviation enthusiast the AAHS e-Library (our online electronic library) now contains a number of reference works you might find interesting. These include the Aircraft Year Books from 1919 to 1940, copies of a number of early aviation periodicals, Transcontinental Air Transport (TAT) company newsletters, and a number of e-books about WWI and early aviation. This is in addition to a number of more modern works. We've also started collecting and publishing flight manuals for various aircraft, which you will find in the "Flight Manuals" section of the e-Library. Look for this area to continue to expand.

The AAHS has always been a supporter of aviation art. Starting with early *Journals*, each issue has featured one, or more, artist's works on the cover. In order to continue to foster this and to share with visitors to the AAHS website, there is a new area, *50 Years of Aviation Art*, where you can go to enjoy some of these many art pieces. You can get either a random selection, or sort by period or aircraft type. Clicking on an artist's name will so you all the works by that artist. Right now, we just have an initial set of works, and will be adding to this during the course of the year.

On the regular side of things on the website, we have updated the photo archives in several ways. First, we have increased the size of the thumbnail images by more than double, making more detail visible in the photos. The database has



50 Years of Aviation Art will present you with thumbnail images of the artwork (top). Clicking on an artwork will display a larger version of that piece, from which you can then move forward or backwards through the list.

been updated to currently include more than **60,900** entries and **23,470** thumbnails. We've also modified the photo archives search so that you can now request the search only return entries having thumbnails available. This is in addition to the complete database search.



Checking the box to limit results only photo archive database entries that have been scanned presents you with results similar to above.



By doubling the linear size of the scanned image thumbnail in the photo archive database, you effectively get a four fold increase in area. This allows you to see much more detail in the image.

Other, more transparent modifications include updating the Newsletter Mailing List application, the AAHS Forums and looking to replace the Forums with a WordPress “blog.” As a result, you may find these services temporarily unavailable as we make these upgrades.

One of the current discussions within the AAHS management is a plan for extensive overhaul of the AAHS website. This would include an enhanced user interface and a more streamlined access to “members only” material (including consideration being given to even eliminating this area). One of the questions we are wrestling with is what content should be available to everyone and what content should be restricted to members? If you have any thoughts on this, feedback would be appreciated. Simply email your suggestions to AAHS2333@aahs-online.org. →



Another recent addition to the AAHS photo archives is this Martin JRM Hawaii Mars, C-FLYL. This is one of two remaining examples, one of which is currently tied up in a controversy on whether Wayne Coulson (current owner) can export it back to the U.S. Naval Museum in Pensacola, Florida. (Michael Carter photo from the Paul Minert collection, AAHS-D000964)

AAHS FlightLine Sign-Up Reminder

For those that want to be notified by email when the next issue of the *AAHS FlightLine* is posted, please register your email address online. You can do this by going to the AAHS website “home page.” At the bottom of this Web page is a link and instructions that will allow you to register your email address. This is an “opt in” program. Only those that request notification will receive one. The AAHS will not use your email address registered here for any other purpose than to notify you of a *FlightLine* posting. You have control and may remove or change your email address at any time. Remember that the electronic version of the *AAHS FlightLine* is in color.

Want to help your Society?

How about reviewing a book? Just let Hayden Hamilton (webmaster@aahs-online.org) know and he’ll send you a book. The only catch is that you have to write a short book review (as shown in this *FlightLine*) and send it back to us. Hayden will let you know what titles are available.

Or, if you have read a good book lately, let other members know about it by writing a short book review of it. Again, contact Hayden for details and titles - don’t want to have you writing a review of a book that has already been reviewed.

AAHS FlightLine

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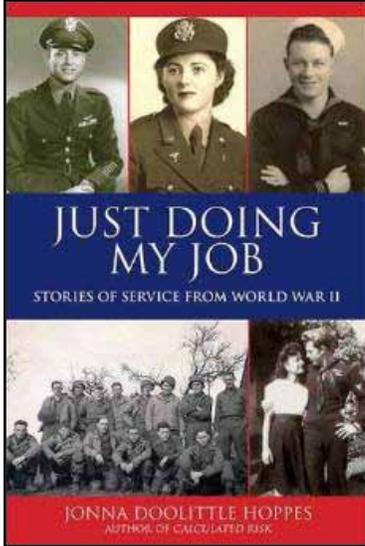
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Book Reviews

Just Doing My Job, Jonna Doolittle Hoppes and Arthur J



Lichte. Santa Monica Press LLC, PO Box 1076, Santa Monica, CA 90406-1076. Hardcover 9" x 6," 2009, ISBN-13 978-1-59580-042-8, 343 pages with B&W photos. \$17.00.

While touring the country, speaking on *Risk*, about her famous grandparents, Gen. James Doolittle and 'Joe' Doolittle. Jonna Doolittle Hoppes met many American servicemen and women with fascinating stories that told unique aspects of American aviation history. She decided to document

some of these histories in *Just Doing My Job*. Jonna donated a copy of the book to the AAHS Library as part of her talk at the AAHS Annual Meeting on February 7.

These short histories give a very personal view of experiences these individuals had serving or supporting the war effort during WWII, both in the U.S. and overseas. One vignette describes the story of Jack Hammett, a navy corpsman who experienced the attack on Pearl Harbor from the naval hospital on Ford Island. Another documents the story of Elmer D. Troxcil, a Marine who also experienced the attack on Pearl Harbor from the deck of the *USS Nevada*.

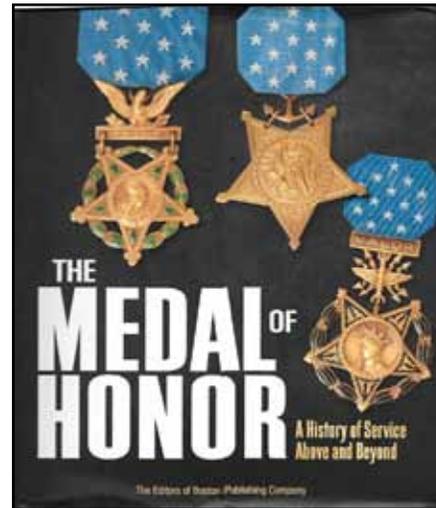
Other vignettes describe less documented experiences, such as the one from Dick Hamada, a Hawaiian-born American of Japanese ancestry, who also witnessed the attack on Pearl Harbor and later served with the Office of Strategic Services as an operative for OSS Detachment 202, freeing American prisoners in China before they were executed by the retreating Japanese.

Although brief, these short stories give valuable, personal glimpses of wartime scenarios that paint vivid pictures, and can generate further interest. Hoppes documents a good sampling of experiences that hopefully will encourage others to tell their tale as well.

By Jerri Bergen

The Medal of Honor, A History of Service Above and Beyond, by the Editors of Boston Publishing. Boston Publishing Co., Inc. Hardcover 9.25" x 10.875," 2014, ISBN: 978-0-7603-4624-2, 304 pages, illustrations: 70 Color and 218 B&W photos, Appendix, Bibliography, Index. \$40.00.

The first Medal of Honor was awarded to Private William P. Hogarty, an infantryman who served with the 4th U.S. Artillery at Antietam Creek on September 17, 1862. During the battle, he noticed that the crew of one of the battery's guns had lost every man. It sat abandoned in front of the battle line on a



small rise pointed at the enemy. Hogarty grabbed a shell and ran through a hail of fire from the enemy to the abandoned gun. He trimmed the shell's fuse to explode just fractions of a second after firing. He single-handedly rammed it home, primed the un, and fired into the advancing ranks of Jackson's men.

Our nation's highest military award, the Medal of Honor, recognizes the recipients for their valor above and beyond the call of duty on the battlefield. This unique history book is filled with numerous photos, illustrations, and photo essays of many of the recipients. It is an updated and revised version of the 1985 edition titled *Above and Beyond*.

This book is a history of the award itself — How it began as an inspiration for Union soldiers in the Civil War, how it has changed over the last century and a half and why the medal was awarded. It includes the accounts of many of the recipients. The book gives a new perspective on such human qualities as sacrifice, honor, and service.

More than 30 pages of the book describe other deeds of valor throughout the Civil War. It includes the Battle of Gettysburg, the battle between the Monitor and the Merrimack, and many other famous engagements of that war. Thomas Custer, General Custer's younger brother, was the only soldier to receive two Medals of Honor in the Civil War.

The book goes on to describe more acts of valor during the Indian Campaigns, the Wars of American Expansion (Korea and China, 1871 and 1900; Latin America, 1898-1933; the Philippines and Samoa, 1899-1913). Included are stories of the Horse Soldiers, the Boxer Rebellion, and the Spanish American War that are not common knowledge. All of these stories are most enlightening and very interesting. The book goes on to cover the Medal of Honor recipients in WWI, WWII, the Cold War (Korea, 1950-1953; Vietnam, 1954-1975). It finishes with our New Enemies, New Conflicts (1990-2013).

The Editors of Boston Publishing did a superb job covering the history of our Nation's highest military award, the prestigious Medal of Honor from its inception in the Civil War through today's War on Terror. They did this in cooperation with the Congressional Medal of Honor Society and the Congressional Medal of Honor Foundation.

This book also includes an Appendix that lists every Medal of Honor recipient by conflict through Staff Sergeant Ty Carter, the last recipient awarded when the book went to press. This book contains a wealth of information about our nation's highest award and especially about its recipients. This book is one that military buffs and anyone interested in U.S. history will want in their collection.

By Larry Bledsoe

President's Message

2015 is already shaping up to be a year of accomplishments, thanks to our devoted AAHS volunteers and supportive members. Early this year we had a great Annual Meeting, where, in a first for AAHS, we partnered with a type club, the International Stinson Club, for the event.

In another first, our AAHS brethren, the Phoenix Wing AAHS group, from Deer Valley, Ariz., has met with AAHS HQ and we've discussed better ways to meet our common objectives. Since their inception in the early 1980s, AAHS chapters have had little interaction, if any, among themselves and AAHS, to the detriment of all.

With a longstanding focus on the publication of our *AAHS Journal* and *FLIGHTLINE*, several other important preservation tasks have slowed, as we've lost some longtime volunteers. This has created a backlog of slide/photo and book cataloging. Last year, we even rented temporary storage for the backlog of books that we hadn't yet cataloged. Beginning last year and into this year, we've developed a basic plan and are making good headway into getting incoming books into our library system. With luck and good organization, and the leadership of Bob Palazzola, the entire AAHS book library will be identified by year end.

The photo archive has been somewhat more problematic, as our resources for identifying unlabeled images and correctly filing them have been scarce as of late. Paul Butler, who oversees the photo archive, has worked out a go-forward plan to first get our 'loose' slides (35,000+ not yet identified) organized, and then digitized and filed correctly before we move back to scanning negatives that are already identified in the photo archive. If you're local to the AAHS office, and have a few hours, you could support the membership greatly with your review of these slides and help us identify them!

A significant, yet barely noticeable accomplishment members will soon appreciate is a major infrastructure update to the AAHS website. Hayden Hamilton, our Managing Editor and Webmaster, has put many additional hours into updating the technology used in our website. During this infrastructure upgrade, Hayden has taken the time to build in many improvements, such as a new search tool that will search web content including the contents of PDF files. He's added several thousand pages of key aviation history references, such as the *Aircraft Yearbook* from 1919-1940, etc. Hayden has written a brief article in this issue of *FLIGHTLINE* on the many upgrades to the website; please review it and give Hayden your feedback.

Yet another accomplishment this year for AAHS is the regular posting of aviation photos and history to the AAHS Facebook page. AAHS, with the help of young volunteer Nicole Margraff, has increased the number of viewers following AAHS from 425 to over 1,100 in just a few months.

For all these accomplishments, AAHS still has knotty problems to solve. AAHS' future usefulness as a research resource, online archive or just a publication needs careful consideration. With most data digitized today, we have to better understand copyright issues and how best to accurately preserve historic material without creating ownership issues. We also need to re-evaluate access to our archives to a wider group of users, while still providing value to our AAHS members. With a smaller aviation world in front of us than behind us, we must partner with other like-minded organizations for mutual support.

These issues are not unique and are faced by many organizations that choose to move forward in a changing world. We look forward to your comments, articles and feedback, as we'll have many opportunities to stumble.

As we've discussed before, a key mechanism you can use right now, today, to support AAHS, from the comfort of your own computer desk is to complete the **Membership Survey** on the AAHS 'Members Only' portion of the website. Your profile information is not sold, is not passed to other groups, but used by AAHS to match up individuals looking for expertise or experience in a particular field of interest. You, our members, are our greatest source of aviation history, and we are honored to support this endeavor, but we do need your help!

Jerri Bergen
President

P.S. Our little 1941 Porterfield A-65-8 engine has been fully overhauled, and has been installed back on the airframe! We're going to do taxi tests within a few days, with luck and good weather.



Chris Bergen, installing the propeller as one of the last steps before run-up on the 1941 Porterfield, finally out of its 3-year-long 'annual'!

Donations

The following members have made donations to the AAHS. These donations go into the general fund to help pay the operating costs of the Society including producing the *AAHS Journal* and *FLIGHTLINE*. All monies are used to support this activity and no salaries are paid to any board member even though many hours are spent by these individuals in promoting and maintaining the Society. Our appreciation and thanks go out to these individuals and to anyone else whom we may have inadvertently overlooked.

Harold D. Andrews Jr.

Karl H. Bergey

John F. Bessette

William W. Bosworth

John S. Bretch

William Brubaker

Arthur Carter Jr.

John S. Clauss Jr.

Richard F. Colton

William DeWalt

Charles Ebrom *

Fred C. Ellsworth

Gary Fisk *

James Grube Grube

Joseph Handelman

Allen Herr

Grove Herrick

Jon Hjelm

Robert Jesko

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Charles McManus

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Stanley Opatowsky

Lionel N. Paul

Michael G. Rettke *

San Diego Air & Space Museum

Walter Sauer

Harold Schwan

D.E. (Dan) Shumaker

Laura Smith

John Streeter

Pierre Trichet

Donavon C. Voegeli

Don Walsh *

E.S. Warnke

Ken Weir

Timothy Victor *

Steve Wolff

John W. Wood Jr.

Barry E. Yavitch

An “*” following a name denotes an individual who donated \$100 or more (in some cases substantially more) to the Society. To these individuals the Society wishes to express our sincere thanks for their generosity.

New Members

Editor's Note: Due to search engines extracting and indexing personal information, the AAHS will no longer publish detailed addresses. Please contact the office if you wish to contact a member.

Rafe Tomsett
Sonoma, CA 95476

John Yadas
Eatonton, GA 31024

John Rawson
Orange, CA 92867

Dennis Page
Wallingford, CT 06492

Craig OMara
Fairview Heights, IL 62208

Doug Schuster
Upland, CA 91784

Jonna Doolittle Hoppes
Huntington Beach, CA 92605

Vernon Rich
Phoenix, AZ 85085

Jay Wisler
Warbird Parts
Tampa, FL 33619

David Gansz
Verona, NJ 07044-1725

Robert Stephen Grant
Metcalfe, Ontario KOA 2PO
Canada

William Green
Newport News, VA 23608

Gerald Stell
Granbury, TX 76049

Timothy Victor
La Puente, CA 91744-4544

Eje Flodstrom
SE 44233 Kungaelv
Sweden

Ivanov Vano
Keenyeshma, 125000
Russia

Ty Sundstrom
Visalia, CA 93276

Heather Taylor
Columbia, MD
21044

Andres WieCheRink
1106 JG Amsterdam,
Netherlands

Bruce F. Dewald
Oro Valley, AZ 85755-8800

Thomas McAtee
Hazelwood, MO 63042

Hugh E Oldham
Anderson, SC 29625

Matthew Hayduk
Eden, NC 27288

Henry Dolim
Redondo Beach, CA 90277-3727

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MOVING???

Make sure you send the AAHS office a change of address so you will not miss any issues of your Journals.

Wants & Disposals

DISPOSAL: Back issues of the AAHS Journal. I'll sell them to whoever makes an offer. I've been a member for 40-plus years. Will ship by USPS "Media mail" to keep the costs down.

Regards;

1990 Vol 35 # 2	2008 all
1997 Vol 42 # 4	2009 all
2003 Vol 48 2 & 3	2010 2 & 3
2004 all	2011 all
2005 Vol 50 1,2 and 3	2012 all
2007 all	2013 all

Dick Capon

recb727@comcast.net

772-220-8046

WANTED: Photos of B-29s (EB-29) configured for electronic intelligence gathering. In particular, I'm looking for photos of two particular aircraft.

- 45-21812.....was a TB-29 (Trainer) converted to RB-29.
- 45-21871.....listed as B-29F and modified into EB-29
...also saw it recorded as EB-29F.

There are possibly another four that are unknown to me and unable to find data on them. Robert Mann's excellent work, and what B-29 books I have so far, do not list ANY Ferret or "Elint" B-29s, but these are known to have operate from Ladd Field, Alaska.

David Stern

aerospace.ordre@hushmail.com

WANTED: I'm seeking information about Margaret (Marge) M. Hurlburt, her history, and her aircraft markings and colors. All will be credited to donors and will become part of the International Woman's Air and Space Museum (IWASM) records. Hurlburt was a former WASP who flew in the 1946 Cleveland Air Races and went on to set a new (1947) Woman's Speed Record in the FG-1 Corsair loaned to her by Cleveland Air Racing notable, Cook Clelland. I began this effort many years ago. Hurlburt was born and raised in my hometown, Painesville, Ohio. After college, she returned to teach school in the same school system where I grew up and went on to my own 30-year teaching career. I never knew about "Marge" until well into my adult life. The school system records were not helpful, and for 20 years off and on, I sought info about her. She seemed to have simply disappeared in history. My town seems to know nothing about her. I would sometimes hear her name in a conversation about air racing and postwar events, but never any hard facts or details.

Moving forward to 2008! I retired from my career and

began volunteer work at the IWASM at the Burke Lakefront Airport in downtown Cleveland, Ohio. They had some files on Marge Hurlburt, so I am now involved in trying to put together information on her life and accomplishments for the museum and hopefully for my hometown to acknowledge Marge Hurlburt. The photos in the file are in poor shape. The museum file does have a very nice but limited in scope and dated essay on Marge by a friend from the WASP, now gone herself, it appears. Let me share a little bit more...

Hurlburt gave up teaching for WASP service in 1943-45 (B-26 instructor pilot in Kansas). She chose to stay in aviation on return to N.E. Ohio after the war, and secured a position instructing flying and ground school in the Willoughby, Ohio, area. This is where she became an associate of Cook Clelland and Dick Becker and immersed herself in air racing. In a borrowed AT-6 she and four other women pilots flew in the 1946 Halle Trophy Race at the National Air Races (NAR). After that win, she was hooked - bought her own AT-6 and formed a "syndicate in the racing business" with two other close WASP friends. Began construction of a "midget" racer for Goodyear racing. She learned of an air show featuring the opportunity to establish a new woman's speed record that would take place in March 1947 at Tampa, Florida (an all woman's air show!). Talked Clelland into loaning her "Lucky Gallon," his 1946 NAR plane. Secured the sponsorship of hometown business men and the name "City of Painesville, Ohio," was added to the Corsair. March 16, 1947, she set the new women's air speed record over a closed course of 247 mph. She planned on racing in 1947 Cleveland NAR, but was killed in a borrowed AT-6 (hers' was being modified to race) on July 4, 1947, at an air show in Dekorah, Iowa. Buried in Painesville, Ohio.

I'm looking for anything in any area to shed more light on this woman aviator. Especially aircraft photos and markings...from any sized photo or source. Would enjoy exchange of emails, postal letters, and telephone conversations with anyone with more to add toward this quest. Or just suggestions for where to seek info.

Thanks,

Bob Taylor

30 Mul Wal Drive,
Painesville, Ohio 44077-2522
440 488-2649 (Cell)
440-354-6769 (Ma Bell)
annblyth@att.net

WANTED: I am interested in contacting any descendant of Bertram "Bert" Acosta, 1895-1954, and/or locating any collections of letters and other papers that Bert may have left. Please contact me with any information or leads.

Mike Gough

mngough39@yahoo.com



American Aviation Historical Society

P.O. Box 3023, Huntington Beach, CA 92605-3023

MEMBERSHIP APPLICATION

Please enroll me as a member of the AAHS. Enclosed is my check (money order or bank draft) for dues as checked below. I understand that I will receive all issues of the *AAHS Journal* published to date during my membership year, plus all issues of the *AAHS FlightLine* (Downloadable from the AAHS website). Individuals joining after October 1, will have their membership begin the following year, but will receive the Winter issue of the *Journal* as a bonus. I also understand that renewal is due at the end of the calendar year in which membership will expire. (Valid through 2015)

- | | | |
|-----------------|-------------------------------|--------------------------------|
| | 1 Year | 2 Years |
| United States | <input type="checkbox"/> \$40 | <input type="checkbox"/> \$79 |
| Canada & Mexico | <input type="checkbox"/> \$48 | <input type="checkbox"/> \$95 |
| Other Countries | <input type="checkbox"/> \$69 | <input type="checkbox"/> \$137 |
| eMembership | <input type="checkbox"/> \$25 | <input type="checkbox"/> \$50 |

Make check or money order payable to AAHS in U.S. Dollars.

Enclosed is my check/money order for

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Charge to VISA MasterCard CCD # on back: _____

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Signature _____ Date: _____

AAHS Photo Archive CDs Series

The Society has recently started development of a series of photo CDs. These CDs contain high-resolution scans of negatives, slides and prints from the AAHS Image Library. The resolution of these scanned images is sufficient to make an 8"x10" photographic quality print. Each CD focuses on a particular aspect of American aviation history - be that a particular manufacturer, type or class of aircraft.

As of this date, the following CDs are available. Each CD contains between 70 and 140 images depending on content.

- 1001 Douglas Propeller-Driven Commercial Transports
- 1006 Lockheed Constellations, Part I
- 1007 Lockheed Connies in Color
- 1009 Lockheed P-38/F-5
- 1011 Curtiss Transports
- 1021 Boeing Propeller-Driven Commercial Transports
- 1031 Golden Age Commercial Flying Boats



These CDs are available to members for \$19.95 (\$29.95 non-members) each plus shipping (\$2.50 U.S., \$10.00 International - add \$1.00 for each additional CD). Order forms are available online and on request, but a note along with your donation specifying your particular interest is sufficient.

Proceeds go to support the preservation of the photo archives. Do you have a particular interest or suggestion for a CD in this series? Drop us a line or email the webmaster (webmaster@aahs-online.org). We are currently researching the possibilities of offerings covering the following areas: Connies Part II, XP-56, Northrop X-4, Bell Aircraft, and Early Lockheeds.