



AAHS FLIGHTLINE

No. 213, 3rd Quarter 2024

American Aviation Historical Society

Founded 1956



F-15E Strike Eagles of the 48th Fighter Wing, based at RAF Lakenheath, England, over the Normandy beaches. (TSGT Matthew Plew, USAF)

D-Day Remembered

Disclosure: We believe this photo was taken during a 75th anniversary D-Day flyover, not the 80th. We'd hoped to use a nice air-to-air shot of the D-Day Squadron Gooney Birds, but couldn't find one with enough uncluttered space at the top to squeeze in the AAHS logo

About FLIGHTLINE

FlightLine is the quarterly newsletter of the American Aviation Historical Society. Available in digital (pdf) format only, it is posted on the AAHS website, <https://www.aahs-online.org>, in the first week of January, April, July, and October. Membership in AAHS is encouraged, but is not required for access.

FlightLine can be viewed online or printed using any compatible web browser, but we highly recommend downloading to a hard drive or flash ("thumb") drive.

To save a *FlightLine* file, click on the image in the center of the AAHS homepage, or one in the *Previous Flightlines* link underneath. Right click, then select the "Save link as . . ." option. ➔

and header without partially obscuring the main subject of the image. The F-15s above display the 48th Fighter Wing's heritage markings, including "invasion stripes" and checkerboard nose as carried by its WWII predecessor, a Ninth Air Force group that flew P-47s.

This 80 anniversary commemoration will no doubt be the last in which D-Day

veterans in any appreciable numbers will attend.

We may also be nearing the end of the line for one of the icons in aviation lore and legend — the fighter ace. Just three weeks before the 2024 D-Day events, well known and much loved triple ace "Bud" Anderson "flew west" at the age of 102.

Including the two Vietnam War F-4 Phantom aces and their backseaters, the count of living American aces can't reach far into double digits, if that.

On a brighter note, the number of restored WWII-era aircraft continues to grow, although that number was recently reduced by one with the unfortunate crash of the Battle of Britain Memorial Flight's Spitfire Mk LF IXe (MK356) which took the life of RAF Sqn Ldr Mark Long.

All Memorial Flight aircraft will remain grounded pending completion of what will likely be a lengthy inquiry.



Nice shot of a 48th Fighter Group P-47D. Less than two weeks after D-Day, the group moved to the Continent, where it flew TacAir support missions for the duration. (Photo: American Air Museum.)

CEO's Message

In my last CEO message, I discussed the lengthy efforts we've undertaken to connect with an enormously useful aviation history source (*Aerofiles*) that appears to be in real danger of disappearing forever. As of this writing, our efforts have yet to shed any light on the status of the *Aerofiles* website. As we outlined, we have taken steps to download most of the *Aerofiles* content to AAHS servers, and we'll move forward with additional actions to publish the information as *Aerofiles2*.

Other actions we're taking to expand our ability to preserve more history is through grant submissions to organizations that have similar preservation objectives to ours. We are collecting information now with the help of volunteer Alexander Barnes, for a grant submission to the National Endowment for the Humanities, which can be up to a 50- page submittal. Alex also has plans to help AAHS submit several other grants throughout the year. A successful grant award will go a long way for helping get our slide collections digitized and available to the public. Thank you again, Alex!

More exciting news for the future of AAHS is the introduction of Tyson Smith (AAHS member since 2015) as our new AAHS President! As you know, I've performed the President's role for over a decade, and a few years ago we chose to create separate CEO and President's positions, to essentially "divide and conquer" the many important tasks it takes to keep AAHS viable. While it's taken us some time to successfully fill this position, I am entirely confident that Tyson has the creativity, energy, and interest to help AAHS reach another generation of aviation enthusiasts. After all, why *WOULDN'T* a guy who has a DC-3 cockpit in his backyard not make an excellent president? ➔

Welcome our new AAHS President, Tyson Smith

We would like our AAHS members to meet Tyson Smith, our new AAHS President! Tyson has a BS degree in Mass Communications from Middle Tennessee State University. Tyson has worked as a 3D Spacial and Graphic Designer at several design agencies, with such clients as Disney, Netflix, Dior and Coachella.

Additionally, he worked with the National Football League in developing museum-grade displays to highlight the history of football during the Superbowl. Tyson has, with the help of his talented wife Klara (and AAHS's bookkeeping support), developed his own apparel brand, **Maiden Voyage Clothing Co.**, that sells primarily through social media outlets such as Instagram, Facebook, and their website.

Tyson has also developed events exclusively for Facebook and Instagram, and plans to bring this valuable expertise to the AAHS brand. AAHS is sorely in need of expertise that reaches outlets more often used by younger generations, and Tyson has just the experience (and interest), to kick start AAHS in this direction. Tyson gives us his introduction to aviation history on the next page. Welcome, Tyson, from all of us, we're so glad to have you! ➔

Jerri Jerri Bergen
AAHS CEO



AAHS Director Les Whittlesy, Carl Scholl, new AAHS President Tyson Smith, wife Klara Smith, and CEO Jerri Bergen gather round Carl's B-25 "Pacific Princess" at Cable Airport, Upland, California.

The Princess made another appearance in FlightLine No. 207. She began life as a B-25J, s/n 43-28204. Her current residence is Chino Airport, but she's been around Hollywood, too. (Catch 22 and others.)



Another stellar day at Chuck Wentworth's 27th Annual BBQ fly-in at Paso Robles Airport, June 1, 2024, included Buzz Elliot in his 1940 Waco UPF-7, from Nevada County Airport, near Grass Valley, California. This UPF-7 (NC29967, Waco c/n 5464) was manufactured in 1940. Powered by a 7-cylinder Continental W670 with a full-length Curtiss-Reed forged aluminum propeller—a rare find today—the airplane flew with the Civilian Pilot Training Program during WWII. Post-war, it did crop dusting duty before being completely restored in 2009. Buzz and his wife enjoy flying the Waco around the northwestern United States at vintage fly-ins. Thanks, Buzz, for sharing this beautiful piece of history!

Tyson Smith, in his own words

As far back as I can remember, the romance of flight has always been in my peripheral. The earliest vivid memory I can recall was my dad and I flying a kite together. Once he got it airborne, I remember him tucking the spool handle through one of the belt loops on his blue jeans and inviting me to lay back on a blanket in the park to enjoy watching it dance in the air. The green grass, warmth of the sun and big, blue sky live on in my mind. Perhaps this memory has woven itself into my subconscious and why I have and always will be fascinated with flight.

During that time, my dad was serving in the U.S. Air Force. We lived on base and I enjoyed playing with the other children of the families stationed alongside ours. After the service, my dad found a job in Nashville, Tennessee, as a machinist at what was at that time Avco (in the former Vultee plant built for WWII) and we settled in Smyrna, Tenn. I grew up hearing about all of the aeronautical and aerospace projects my dad was working on and recall once getting to visit the factory.

As I got older, I began to take an interest in film and being a child of the Eighties, I feel fortunate to have grown up with such films as *Indiana Jones* and *The Rocketeer* (two of my favorites) as well as a multitude of other classics. It was the influence of these films where my interest in history was cultivated and I gravitated to anything set in the early Twentieth Century. Countless nights in high school were spent with worn out VHS tapes replaying my beloved cinematic tales, while I built plastic scale models of what I saw on screen. During college, life's responsibilities became my priority and those childhood interests, while not forgotten, were merely packed away mentally for safe keeping.

After college, it was "California or Bust!" and I moved to Los Angeles with my now wife, Klara Smith. That move to the West Coast fulfilled a dream of mine to travel Route 66 and discover America for myself in the process. Vintage motels, diners, National Parks, roadside attractions and the open road became our home as we chased the sun in my '73 Charger all the way to the Pacific Ocean.

It was here where I was able to start slowly reassembling those childhood memories and explore those interests again. As part of that rediscovery, I started an apparel line called Maiden Voyage Clothing Co., and also began dealing in vintage and antiques for the fun of it. Along the way, aviation relics and the like were added to the mix. Over the years, I've had the honor of assisting in the acquisition of historic items that, as Indy would say, "belong in a museum" and now are.

I'm an aviation and history enthusiast who enjoys learning and look forward to assisting AAHS in growing to meet the challenges of what lies beyond the horizon. ➔



Tyson and wife Klara beside the EAA's Ford Trimotor. Klara is also a great new addition to the AAHS team. (See her intro in FlightLine No. 212.)



(Left) Jerri wasn't kidding about that Gooney Bird cockpit in the back yard!

Just one of Tyson's many aviation "artifacts." Maybe we'll do a page on his collection in a future FlightLine number.

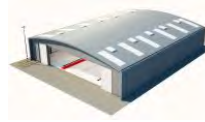


AAHS Mission Statement

AAHS is dedicated to the preservation and dissemination of the rich heritage of American aviation. Our purpose is to collect, preserve, and promote the written and visual record of planes, people, places and events involved in the development and expansion of American aviation.

AAHS promotes our aviation heritage through the operation and support of library and media resources for youth and adults in aviation education, scholarships, career development and outreach programs.

Donations Hangar



This issue features black & white “Golden Age” photos from the late Al Hansen’s collection. Like many other enthusiasts, Al traded negatives and prints with other collectors, sometimes resulting in the name of the original photographer being lost. Location and aircraft ID is sometimes minimal or missing altogether. (See additional comments on [p.15.](#)) ➔



1. Sikorsky XSS-2 (BuNo A8972) Model X1200, only example produced.
2. Beechcraft SC17B (NC16440) Impressed into USAAC as UC-43G, 42-88628.
3. Ford 4-AT-A Tri-motor (NC3443) Ford c/n 4-AT-014, written off 1927.
4. Fokker/General Aviation XFA-1 (BuNo A8732) Only example produced.
5. Burnelli UB-20 (X397N - NR397N) Only example produced.
6. Thomas-Morse XO-932 (NR33Y) Sold to Mexican owner as XA-BDX.
7. Wright-Bellanca WB-2 (NX/NR237) Transatlantic flier.





We regret to inform our readers that Gerald “Gerry” Balzer flew west on June 2, 2024, after a short illness. Gerry was just eight days shy of his 98th birthday. He will be sorely missed by all involved in American aviation history.

Gerry joined AAHS in its first year of operation in 1956, and since then, has promoted aviation history in numerous ways.

Gerry started his aviation interest in the Army Air Corps, and performing flight crew duties for P-51Ds, where he got a little stick time in the P-51 trainers. While working at Northrop Aircraft, Inc, at Hawthorne, Calif., he joined AAHS. He worked on the F-89s, the X-21, the SM-62 Snark missile (design and stress analysis), the T-38/F-5 series, and several special assignments.

In 1963, while at Northrop, Gerry was able to divert a truckload of the company’s negative material that was literally headed to the city dump to his residence, thus acquiring approximately 350 boxes of negatives containing some 200,000 negatives; it took almost a year to survey this material, salvaging some 3,000 negatives of historical interest. Gerry has since digitized these images.

Gerry worked for McDonnell Aircraft Corp. in the mid 1960s, which soon merged with Douglas Aircraft to become McDonnell Douglas Corp., in system integration. He assisted in melding the McDonnell and the Douglas proposals for the

Navy VSX program that was eventually awarded to Lockheed as the S-3.

Gerry was assigned to the FX (F-15) project proposal working through the loading of the first prototype F-15 into a C-5 for transport to Edwards AFB. After an aerospace layoff, Gerry was hired as a product analyst by ITT Blackburn, and then by TRW on several BLACK projects. Gerry retired from TRW in 1992.

Gerry became AAHS Vice President in the early 1980s. His duties included treasurer, facility leasing, facility maintenance, office support (supplies and utilities) to name a few.

In addition to writing three books, *American Secret Pusher Fighters of World War II: XP-54, XP-55, and XP-56*, *Northrop F-89 Scorpion*, and *Curtis Ascender XP-55 (Air Force Legends No. 217)* (all available on Amazon), Gerry has spent his career working with authors/collectors worldwide and the AAHS office in support of technical questions and Northrop photograph research.

Gerry continued to share his love of aviation history up until the end. He made sure that his extensive collection had a new home and that the AAHS has access to his photo collection through a gift of high resolution digital photos to the AAHS archives that are available members, authors and researchers.

Gerry’s lifelong support of the AAHS and his dedication to preserving aviation history will be greatly missed by all of us. Thank you, Gerry, for a life well lived and served.

Hayden Hamilton

Pratt & Whitney and the Nuclear Aircraft Engine

By Tom Palshaw, AAHS #18385

This article is not a technical report about the nuclear aircraft engine. It is a story of one person's road of discovery about events that had occurred in his lifetime and involved his family. This article will only cover the work at Pratt and Whitney.

Have you ever seen a nuclear aircraft engine? I have not, but my father's last job at Pratt and Whitney was on the nuclear engine project. I was just a small boy; the program was classified, so of course he would not talk about it. I recently learned that the New England Air Museum (NEAM) had that was reported to be a "nuclear" engine in its collection.

WOW! I just had to see what my father had worked on. The engine was stored in NEAM's cold storage building (jokingly called Area 51). My first impression—it was BIG! There it was, clean and massive. It was loaded with a large number of test point connections. But it had no data plate, nothing that would identify it. My first task was to learn all I could about the nuclear engine story.



Pratt & Whitney J91/JT9 in NEAM's "Area 51" Storage Facility.

Nuclear Propulsion History

The concept of a nuclear powered aircraft was first approached by the U.S. Army Air Forces in May of 1946. The study was called Nuclear Energy for Propulsion of Aircraft (NEPA). It included Douglas Aircraft, North American Aircraft, and Fairchild Engine and Aircraft Corporation. Northrop Aircraft began a privately funded study, designated the N34 Flying Wing.

In 1951, the project name was changed to Aircraft Nuclear Propulsion (ANP) and included Air Force-led exploration of a number of long endurance subsonic and supersonic nuclear powered aircraft. Contracts were signed with Boeing, Lockheed, General Electric (GE), and Pratt and Whitney Aircraft (PWAC). To demonstrate the feasibility of flying with a nuclear reactor on board the Air Force signed a contract with Convair in 1952 to develop the X-6 flying testbed.

Convair ultimately modified a B-36 that had been damaged in a tornado at Carswell AFB to build the NB-36H shield test aircraft. This aircraft flew with a reactor on board but was never powered by nuclear energy. The Navy contracted with Martin and Convair to develop a nuclear powered seaplane in 1953. It never went past the paper stage.

The GE contract called for the development of a Direct Air Cycle engine and initially demonstrated this concept utilizing modified J47 engines. The reactor heat in this engine was introduced directly into the engine flow path ahead of the combustor section. Pratt & Whitney was contracted to build an Indirect Cycle engine where the reactor heat passed from the reactor to the engine via liquid metal to air radiators placed forward of the chemical combustor section.



The NB-36H (51-5712) carried a nuclear reactor but retained its conventional piston/jet propulsion system. The cockpit was shielded with lead to protect the crew from radiation. (USAF photo)

Engine Family Designations, Military and Civilian

My next task was to identify the engine in the NEAM collection. The first confusing data were the designations of jet engines. Various reports used a variety of designations. An engine family is characterized by its architecture or features. There is a military identity and, if applicable, a civilian identity. For example, a military J48 is a civil JT7, a J52 is a JT8. Add a fan and it becomes a JT8D, a J57 is a JT3; add a fan and it becomes a JT3D, a J58 is a JT11. I found that the engine in the NEAM collection is a J91/JT9.

The military/civilian designation format for the J91/JT9 engine was misleading and did not follow traditional naming convention. The JT9D commercial turbofan engine is well known but has no connection to the J91/JT9. No one could tell me why this designator pattern changed. The genesis of the JT9D was NASA's STF200 high bypass demonstrator from 1963. It was not selected for the Lockheed C-5, but did power the initial Boeing 747.

The engine I would be dealing with was a J91/JT9 engine being developed for Mach 3 applications, including what eventually became the North American XB-70 bomber. However, the J91 was not selected for the XB-70.

From the J91/JT9 to a Nuclear Engine

The J91/JT9 was a prototype Mach 3 afterburning turbojet engine initially designed in the early 1950's for operation over 70,000 ft. It had a single spool, nine stage compressor that was unique in that it was designed for transonic airflow and was Pratt's first use of titanium blades. It was rated at 35,000 lbs of thrust, with mass airflow of 400 pounds per second at sea-level.

Only two development engines were built, s/n X287 and X291. The two engines had run for less than 500 hours on the test stand when the program was canceled. The NEAM engine is X-291; X-287 was scrapped.

The U.S. Navy requested an engine for versions of the Martin P6M jet-powered seaplane and later for a proposed Mach 3 attack aircraft. PWAC scaled down the J91 from 400 lbs/sec to 300 lbs/sec to meet the thrust rating for these applications.

This engine became the J58/JT11. When the Navy project was canceled, PWAC proposed it for the Convair F-106, the North American F-108, the Vought XF8U-3 Crusader III, and others but failed to win any contracts. It was selected, however, for the Convair Kingfish concept and, more importantly, the highly successful and record-setting Lockheed A-12 (later YF-12A and SR-71).

Back to the Nuclear Engine Program

The PWAC nuclear engine was called the JTN-11 with the “N” for nuclear power. The JTN-11 variant was a JT11D-20 engine adapted for operation with liquid metal radiators mounted just in front of the combustor section to supply nuclear heat for thrust. The modifications included:

- An increase in the length and diameter of the combustor section to increase the number of burner cans from eight to nine.
- An increase in the length of the turbine shaft with two additional support bearings.
- The jet fuel nozzles and manifolds were modified to permit operation in the high temperature output (1600F) of the liquid metal radiators.
- The engine mounts were located on the radiator case.
- Because the project was for a long range bomber, the control system was modified for subsonic, low altitude, full afterburner operation. It could be operated with jet fuel, nuclear heat, or both together.

Thrust on nuclear power was controlled by varying the flow of the liquid metal through the turbo pump. The liquid lithium metal temperature was maintained at a constant 2000F out of the reactor by manipulating the radioactive fuel rods compared with the liquid metal flow rate. The reactor was rated at 575 megawatts.

A jet fuel power lever was required for each engine, but there was only one nuclear power lever. When the engines were operated on both chemical jet fuel and nuclear power, the jet fuel power levers set the thrust level and the nuclear power lever controlled the heat added by the reactor. The power plant was capable of operation up to 55,000 feet.

The entire nuclear propulsion program was canceled in

March 1961 due to costs, lack of progress, and changing defense needs including the initial development of intercontinental ballistic missiles (ICBM). After more than ten years of research and more than \$1 billion spent, it had not produced anything of use, and might have cost an additional \$1B to move forward. A report to Congress stated “at the time of termination an airplane had never been flown on nuclear power, nor had a prototype airplane been built.” It criticized the program for lack of direction, moving goals, and poor administration.

General Electric had started earlier and had ground-tested an engine on nuclear power. The PWAC contract had been signed later in the program. Pratt had completed ground testing of the liquid metal pumps and heat exchangers, along with a mockup of a reactor, but did not yet have an operating reactor.



NEAM restoration volunteer Tom Palshaw looks the exhaust end of the museum's J91, the only surviving example of the type.

Conclusion

Have I ever seen a nuclear powered jet engine? No, but the program advanced technology in high temperature metals, sophisticated heat exchangers, systems design, and basic science. Some of this progress went into other projects in aviation, energy, and space systems.

While the J91/JT9 in the NEAM collection is not a “nuclear engine,” it is part of the history of exploring nuclear power for aircraft and formed the basis for the J58/JT11 that powered the SR-71. The Blackbird is still one of the most amazing aircraft ever built, and in researching these programs I have gained a better appreciation of the work of my father. ➔

(See source notes on [p.15](#))

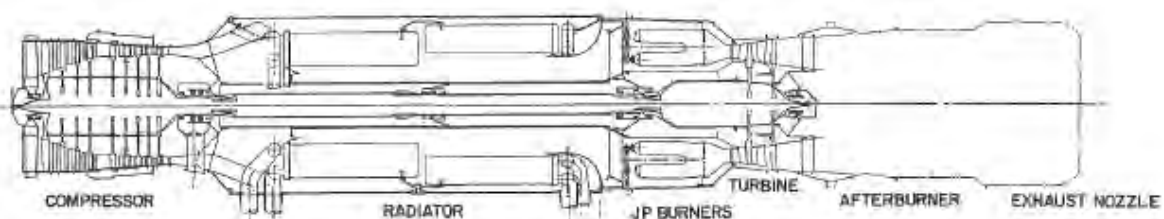


Diagram of the proposed Pratt & Whitney JTN-11. The engine would have operated with air heated by a nuclear reactor, as a conventional jet engine with afterburner, or as a combination of the two types.



Members' Choice – Best of the Best

At the end of each year, we ask you to vote for the best article and best artwork that appeared in that year's AAHS Journals. From the editor's perspective, it is fascinating to see the diversity of the voting. This year was no exception. While almost every article received at least one vote, we always have one or two that stand out. This year was more competitive. The spread in the tally for the top six vote-getters was just three votes with ties for second and third.

The article receiving the most votes was J.B. Rivard's "The Disappearance of the Martin M-130 Hawaii Clipper, May not Be as Mysterious as Thought." (Vol. 68, No.4, Winter 2023) For the best artwork of 2023 the clear winner by a large margin was AAHS Chief Executive Officer Jerri Bergen's Memorial Poster of the Reno Air Races. It received almost twice the number of votes as its closest competitor. FYI, it looks like at least some form of National Air Racing may continue – stay tuned for the latest on this. ➔



Our last number featured the Douglas World Cruisers that made the historic “Around the World” flight in 1924. A hundred years later, a five-man crew in a Lear Jet 36A (N41GJ) owned by Global Jet Care, took off from Wichita, Kansas, site of the original Lear Jet factory, on another around-the-world mission.

This flight, dubbed the Century Mission, was part of a fundraising effort dedicated to restoring Lear Jet Model 23, serial number 003 (N200Y), the first of the iconic brand to be delivered to a paying customer. (Prototype #1 was lost on a test flight in early 1963, #2 is in the National Air & Space Museum.)



Factory fresh, Lear Jet s/n 003 awaits delivery in 1964.

Like the 1924 undertaking, the 2024 flight was westbound and, as it was a century earlier, a huge challenge was “securing the needed permits and coordinating timing at all the stops for quick turnarounds.” There were eleven in all: California, Hawaii, the Marshall Islands, Palau, Singapore, India, Dubai, Egypt, Italy, Portugal, and Nova Scotia.

Touchdown back in Wichita was on April 6, 100 years to the day after the departure of the World Cruisers from Seattle. That’s about 172 days faster, with 63 fewer stops, than that epic 1924 flight! →



Derelict and rapidly deteriorating before being rescued by Classic Lear Jet Foundation, N200Y was hauled back to Wichita where it is being prepped for restoration to airworthy status and, if all goes well, as a regular attraction on the airshow circuit. (Both photos: Classic Lear Jet Foundation)

Also in No. 212 (p.4) we posted a request from a researcher who is attempting to identify the airport in a short 1970s film clip. Tim Chaloner (AAHS #19551, but no longer current) says it’s “almost definitely Chicago O’Hare” (ORD).

Jon Barrett (#20812) thinks it’s Phoenix (PHX). Jon also provided the link to [a video](#) digitized from a 16mm film entitled *Energy - The Ultimate Problem*, from which the clip in question (0:48 to 1:24) seems to have been extracted.

If the spiral parking garage ramp shown in the clip was in fact PHX, it would be looking west at Terminal 4—which didn’t open until 1990, many years after the film was made. Our best guess is that the airport scenes are a mélange of footage taken at two or three different airports. →



FlightLine Nos. 205, 206, and 212 covered NASA’s flying observatories in some detail. On May 15 the agency retired its long serving DC-8-72 (Douglas c/n 46082), which rolled off the assembly line in 1969. Initially flying for Alitalia (as *I-DIWK*), it went to Braniff (N801BN) in 1979.

NASA acquired the aircraft in 1986, registered as N717NA, and subsequently N817NA. Final stop is to be Idaho State Univ. as an instructional airframe. →



NASA’s DC-8 over Palmdale. (NASA photo)



In Alitalia livery, Rome, 1978. (Franco Storaro photo)



The USAF has released the first official in-flight photos of its B-21 Raider, taken during a recent test hop. “The flight test program is proceeding well” according to air force sources. ➔



(Both photos USAF)



(Beta)

In the eVTOL world, Beta Technologies achieved a major milestone when its Alia 250 (N251UT, above) transitioned from vertical liftoff to horizontal flight on April 23.

Not to be outdone, on June 8 Archer Aviation duplicated the feat with its Midnight prototype. (N302AX, below) ➔



(Archer)

At the other end of the flight spectrum, the FAA has issued a Special Flight Authorization (SFA) for Boom’s XB-1 scale test article to exceed Mach 1.

Meanwhile, the X-59 Quiet SuperSonic Technology (Quesst) demonstrator, (below) built by Lockheed Martin’s Skunk works, has passed NASA’s flight readiness review. No flight dates have been announced for either aircraft. ➔



(Lockheed Martin/NASA)



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The Pensacola Chapter of AAHS continues to go full throttle. Congrats on the fine work y'all are doing! The Pensacola area is a target-rich environment for guest speakers, and the chapter is taking max advantage.

The April Meeting featured Lt. Col. Jerry Geil, U.S. Marine Corps (Ret), who gave an excellent presentation on "The Operation of the U.S. Aircraft Carrier." The May program, by Scott Sandsted, was about S-3 Viking and Boeing 777, both of which Scott flew.

The June meeting, temporarily hangared in a different test venue, featured a talk by Terry Ogle on "How the Atomic Bomb Ended WWII in Japan." Both Scott and Terry are tour guides at the Naval Aviation Museum. Terry was just recognized for 1,000 hours of volunteer work at the museum.

The rest of the 2024 lineup looks great, too. July's speaker will be Gary Graf, who'll do a presentation on the German airship *Graf Zeppelin*. In August, ace aircraft photographers (and AAHS members!) Todd and Kelly Whitaker will share their experiences (and hopefully lots of photos) at the Royal

International Air Tattoo, held each year at RAF Fairford. Visit <https://www.whitpics.com/> to see samples of their work, including that great shot of Blue Angel No. 5 in the page header above.

Lou Toth will take the podium in September to talk about the Sonex 1520 kit aircraft in which he and a fellow pilot set a Recognized Course (Pensacola-Pascagoula, Miss.) speed record for that class aircraft. October's speaker will be well-known aerospace historian and author Dr. Richard P. Hallion, who will detail the two Douglas-Navy D-558 programs, "Transonic to Mach 2."

Robert Preston will wind up the year's formal programs at the November meeting with his discussion of the V-22 Osprey. December will be the chapter Christmas Party, with "member-sharing" entertainment.

Go to the Chapter's website, <https://smokeonblues.org/> for general info. Scroll to the bottom of the page and enter your email address to receive *Flight Plan*, the chapter newsletter.



(L to R) Sha Alf and Chapter VP Greg Neely with April guest speaker USMC Lt. Col. (Ret.) Jerry Geil.



Sha Alf and AAHS Chapter Prez Terry Durham celebrate Cash Barber's 100th birthday at the National Naval Aviation Museum in Pensacola.

(See Cash's story on [p. 12.](#))

“Cash” Barber and the PBY Catalina

On May 6, Clyde Cassius “Cash” Barber turned 100 years of age, an event duly celebrated at the National Naval Aviation Museum in Pensacola, Fla., where Cash continues to inform and entertain visitors with stories about his World War II service as a flight engineer on the PBY Catalina flying boat.



Cash prepares to celebrate his 100th birthday at the National Museum of Naval Aviation, where he continues to volunteer.

In early 1941, at the age of 17, Cash enlisted in the Navy. Upon graduation from aviation mechanics school in November, his entire class was ordered to patrol squadrons at Pearl Harbor. Cash was aboard ship en route to Pearl when the Japanese attacked. The vessel turned back to California, loaded more supplies then headed back to Hawaii.

Cash was assigned to VP-11, one of several patrol squadrons flying PBYs—almost all of which had been destroyed on December 7. As replacement aircraft began to arrive, VP-11 extended its patrols deeper into the South Pacific. In July, the squadron deployed to the Fiji Islands, then to New Caledonia in support of the August 7 Guadalcanal landing.

Throughout the long and arduous Solomons Campaign, VP-11 performed all the usual VP missions—regular pattern searches, special rescue and resupply operations, and anti-submarine work. On October 29, 1942, a VP-11 crew sank the Japanese submarine I-172.

By February 1943, VP-11 was due for a rest. The squadron moved to NAS San Diego for leave and refit. April found the squadron back in Hawaii, training for a return to combat. In June, it was off to Perth, on the southwest coast of Australia. In November, VP-11 moved to New Guinea, taking on the role of “Black Cat” night intruders. Redesignated VPB-11, the squadron leapfrogged up the New Guinea coast, moving with MacArthur’s forces towards the Philippines. In December

1944, VPB-11 left the war for good. The squadron was disestablished in June 1945.

Post-war, Cash flew with Navy air transport squadrons (VR), including one of the two that participated in the Berlin Airlift. Commissioned in 1961, he went on to serve another 10 years as a maintenance officer, including a tour in Vietnam.

After more than 30 years of naval service, Cash retired as a Lt. Commander on June 30, 1971.



Cash in his VP-11 flight gear.



(Above) The Museum’s “skinned” PBY fuselage. (Below) Cash briefs the crowd on his experiences in the “Cat.”



Volunteers News

AAHS enjoys the time of many volunteers to manage our operations; some provide a few hours of service, while others provide years of valuable time to assist in our many preservation projects.

On Saturday, March 23, AAHS was host to a small group of eager volunteers from the Eagle Credit Union. Volunteers Pauline Mead, Juan Murillo, Krystina Laufou, Oscar Gonzalez, and Kat Perez graciously offered a Saturday afternoon to help us organize items in our collection that have long required sorting. These included just under 350 magazines needing sorting, and nearly 300 scanned photos that needed organization by number. The team also organized 540 glass slides from the 1920s and 30s, which had over the years been filed out of order.

The volunteers enjoyed their time at AAHS and were given a full tour of our facility, including the photo collections and library housing, which provided a wealth of knowledge on American aviation history. They enjoyed free coffee and snacks as they worked and generally had a good time helping us preserve history. We thank the volunteers of the Eagle Credit Union for all of their generosity and help that day, and we sincerely hope to work with them again in the future.

On April 13, AAHS was pleased to support a fund raising gala held by the Be Perfect Foundation. The foundation's mission is to provide direct financial and emotional aid for

individuals living with paralysis by providing resources, paying of medical expenses, restoring hope and encouraging personal independence through a non-traditional method of exercise-based therapy. AAHS loaned our Larry Klingberg model of the 1937 Kellett Autogiro as stage embellishment. The gala raised over \$600,000! ➔

by Jerri Bergen



Eagle Credit Union Volunteers hard at work in the AAHS conference room, with Charlie Shaw acting as coordinator.



Help your Society From the convenience of your own home!



The Society has about 1 Million photographs that need cataloging.

Using [AAHSPlaneSpotter](https://www.aahsplanespotter.com), you can identify and enter data about the aircraft in the image - Manufacturer, Model, registration id (if visible) and anything else in the image that is relevant. All you need is an internet connection and an internet browser. Work at your own pace, any time of the day or night.

Point your browser to:

<https://www.aahsplanespotter.com>

Look at the "DEMO"

Volunteer at "SIGN UP"

Help the Society catalog our images so we can make them accessible and searchable.



FlightLine Footnotes

(p.1) A few words about *FlightLine*. The newsletter has been in digital format since mid-2009, when printing/mailing costs forced discontinuance of the paper version. The 16-page layout has remained unchanged, however. As noted, it's possible to print hard copies from pdf files, but some images may lose resolution if printed and of course hyperlinks will not work. We recommend sticking to your computer screen.

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(p. 3) Tom Palshaw provided this source list for his article on a proposed nuclear aircraft engine:

Special thanks to Gary Roberge, Principal Design Fellow, Pratt & Whitney, for his help with this story.

The Engines of Pratt & Whitney: A Technical History, by Jack Connors.

American Secret Projects 4: Bombers, Attack and Anti-Submarine Aircraft 1945-1974, by Tony Butler.

Declassified Report PWAC-275, *Advanced Nuclear Turbojet Powerplant Characteristics Summary for Supersonic Aircraft*, by Pratt & Whitney.

Declassified Report CNLM-2779, *Engineering Proposal for Design and Development Work on a Nuclear Turbojet Propulsion Unit*, by Pratt & Whitney.

Report #B-146759, *Review of Manned Aircraft Nuclear Propulsion Program of the Atomic Energy Commission and the Department of Defense*, by the Comptroller General of the U.S.

*

(p.12) More info on Donations Hangar pix:

#2. Amphibious Beech Staggerwing, with EDO floats.

#3. Trimotor crashed on takeoff, Floresville, Tex., December 29, 1928. All four aboard walked away.

#6. Thomas-Morse XO-932. Uncertain pedigree; unsuccessful competitor for Air Corps observation aircraft contract. (See "Cooperative Airplanes of the U.S. Army Air Corps, 1930-1934" in the Spring 2019 *AAHS Journal*.)

#7. WB-2. A would-be competitor to Lindberg's *Spirit of St. Louis*, this aircraft nonetheless had the distinction of making two noteworthy transatlantic flights. The first, piloted by Clarence Chamberlain with owner Charles Levine as passenger, was made only a month after Lindberg's epic flight. Levine intended to fly New York to Berlin, but was forced down to land about 100 miles short. In October 1930, two Canadian pilots flew the WB-2 from Newfoundland to London. It was destroyed in a Hangar fire in 1934.

(p.12) Thanks to the Pensacola Chapter of AAHS for tipping us off to WWII veteran Cash Barber's story. He's recorded several video interviews. In Dec. 2023, he did one for the Pacific Air Museum on Ford Island, Pearl Harbor, viewable on [YouTube](#). At about the 35:30 mark Cash tells the story of picking up a replacement aircraft, along with an unexpected bonus: 200 cases of beer! He also talks about VP-11's role in extracting beleaguered Australian commandos and their native allies by landing PBYs on the Sepik River in New Guinea.



Back in April, ye editor was fortunate enough to snag a ride in a WWII Stearman, courtesy of Dream Flights. These folks operate four of these classic biplanes, giving flights to veterans across the country.

I happened to draw N49295 (40-1974) and pilot Marcus Smith, who in his other life flies for Southwest. If you're a vet, by all means keep an eye out for Dream Flights in your neck o' the woods — you'll love it! →



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AAHS Print Service

The AAHS Print Service allows members to obtain photographs from the AAHS collection to support individual research projects and to expand personal collections. Images are made from negatives, slides or scans of high quality prints contained in the AAHS collection.

Pricing: Black & White or Color

5" x 7"	\$4.00
8" x 10"	\$6.00
Digital Images CD base price	\$2.95
Each digital Image	\$1.00
Domestic Shipping and Handling (per order)	\$2.50
International Shipping & Handling (per order)	\$5.00



Each order must be accompanied by a check or money order payable to:

APT Collectibles
P.O. Box 788
Bonsall, CA 92003-0788

New Members

Welcome to AAHS!



Note: To prevent unauthorized extraction of personal information, AAHS no longer publishes complete addresses. To contact a member, please phone the AAHS office (951) 777-1332 or email: membership@aahs-online.org

Kimberly Sheeter
Ormond Beach, FL 32176

Todd Whitaker
Gulf Breeze, FL 32561

Michael Hester
Loma Linda, CA 92354

Chace Mayhew
Haslet, TX 76052

Kyle Falcon
Rochester, NY 14606

Kelley Whitaker
Gulf Breeze, FL 32561

Joseph Baker
Matthews, NC 28105

William Fiser
Gulf Breeze, FL 32563

Jordan Li
Saint Augustine, FL 32084

Mark Martin
Elk Grove Village, IL 60007

J. Campbell Martin
Tehachapi, CA 93561

Alexander M. Barnes
Los Angeles, CA 90045

Brian Naples
Jacksonville, FL 32258

Elizabeth Fillhart
Moreno Valley, CA 92557

Michael Kopman
Crystal, MN 55427

Dan Silvers
Waunakee, WI 53597

Sumi Bitner
Boulder, CO 80302

Jeremy Wallis
Berkeley Heights, NJ 07922

James Burn
Houston, TX 77062

Keith Kumamoto
Torrance, CA 90505

Todd Whitaker
Gulf Breeze, FL 32561

Chris Emerson
Gracemere, QLD 4702
AUSTRALIA

Toronto Public Library
Toronto, ON M1P4
CANADA

Megan Pamell
Nowra, NSW 2541
AUSTRALIA

Karl Wilberg
Canmore, AB T1W 1G2
CANADA

Mr. Paul Little
South Yarra, Victoria 3141
AUSTRALIA

Moving, or changing email address?

Be sure to let us know:

membership@aahs-online.org

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.



American Aviation Historical Society

P.O. Box 483 • Riverside, CA 92502

MEMBERSHIP APPLICATION

Please enroll/renew me as a member of the AAHS. Enclosed is my check (money order, bank draft, or credit card information) 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 November 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 my membership will expire.

	1 Year	2 Years
United States	<input type="checkbox"/> \$50	<input type="checkbox"/> \$96
Canada & Mexico	<input type="checkbox"/> \$69	<input type="checkbox"/> \$129
Other Countries	<input type="checkbox"/> \$81	<input type="checkbox"/> \$157
eMembership	<input type="checkbox"/> \$32	<input type="checkbox"/> \$60

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

Enclosed is my check/money order for

\$ _____ (U.S. Funds)

NAME

STREET

CITY

STATE/COUNTRY

ZIP

eMAIL ADDRESS

INTERESTS

Charge to: ☐ VISA ☐ MasterCard CCD # on back: _____

ACCOUNT #

EXP DATE

SIGNATURE

DATE

We ask our membership community to help us meet rising publication, postage and operating costs. Please consider a donation to AAHS today. With your help, we will continue to preserve and share members photos, keep publishing stellar aviation history, and assist struggling students as they prepare for careers in aviation.

Thank you for being a part of the American Aviation Historical Society!

Make a General Donation

Support the AAHS mission of preserving and sharing aviation history. \$ _____

Please contact me about:*

☐ Endowment needs

☐ Including AAHS in my estate plan

I can be reached by phone at: _____

I can be reached by email at: _____

*You can also reach out to our membership department at:

membership@aahs-online.org or by calling (951) 777-1332