

FlightPlan

A VOLUNTEER NEWSLETTER BY VOLUNTEERS



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EVERGREEN
AVIATION & SPACE
MUSEUM



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OCTOBER 2025

The model airplane on the front page is a North American T-6G Texan. This post World War II trainer, nicknamed “The Pilot Maker”, was pivotal in preparing pilots in advanced techniques. Powered by a 600-hp Pratt & Whitney R-1340 radial engine, the two-seat aircraft excelled in aerobatics training.

THEMES

We are assigning themes to each month of the FlightPlan. These are not exclusive of other topics, but perhaps they may motivate you to make a contribution.

OCTOBER.....COLLECTIONS

NOVEMBER.....HOWARD HUGHES

DECEMBER.....DC-3

GUIDELINES FOR SUBMITTING AN ARTICLE TO THE FLIGHTPLAN NEWSLETTER

1. The FlightPlan (FP) is published on the 1st of each month
2. Stories for the next issue can be filed up to the 10th of the prior month
3. Articles should be associated with an artifact at the Museum
4. Sources for specific information in the article should be provided
5. Stories should be approximately 500 words long
6. If appropriate, include one or two photos for publication with the article
7. Include name, day, and title at the bottom of each article submitted
8. Email articles to: flightplan@evergreenmuseum.org
9. Feedback is encouraged; submit to flightplan@evergreenmuseum.org

SCOT LANEY

MUSEUM CEO

At the Evergreen Aviation & Space Museum quarterly Board of Directors meeting this week I gave the Board a sort of State of the Museum presentation as this upcoming week is my one year anniversary in the CEO position.

I spoke about the various initiatives that we have established, all of which are part of the over-all approach to creating a higher standard for all things that we do. Frankly I don't spend much time thinking about the past around here. We have a museum that is not fitted with a rearview mirror, only a giant windshield that lets us peer into the future, not the past, as we drive toward it.

Central to those efforts are looking individually at the three pillars of our Museum: Artifacts, Collections and Restoration. These three things make up what we are and what our guests see when they visit.

The artifacts come to us, Collections curates them and Restoration prepares them for exhibit when needed.

That's the flow and we are organized around that.

The way we do all that is our secret sauce—or at least is becoming so. We are simultaneously creating a higher standard in all three areas, exhibits and restoration being the most public but Collections underpinning the whole effort.

My focus will soon turn to Collections. Bud Varty and the Collections team have prepared a good list of things they will need going forward to tackle the huge amount of items we have back there.

I believe the progress in Restoration is apparent to anyone that thinks back a year or so. Step one was cleaning and organizing the area and Bill Veith stepped in to help with that effort along with many of the Restoration volunteers. Step two was selecting and staging the specific aircraft for restoration. Obviously the C-47 is the most public, but also the P-Model Huey receives a lot of attention from our guests. The new tour will add some additional spice to the whole

shebang.

EASM is one of the few museums in the world that does restoration on the museum floor. I firmly believe this is very important and unique—a strength we have that others don't—so naturally we will exploit that.

Do we need a separate restoration facility? I think so, but we will always have a public project going on the floor for our guests to see if and when we get that separate facility. In the meantime we will use what we have today to get what we want tomorrow—a business strategy that in my opinion almost always works. Do the restoration projects sometimes make noise? Yep. But I see our guests walk over to see for themselves what's going on when they hear it. That being said I remind Leroy occasionally that we need to keep the noise down during the 11:00 am and 2:00 pm tours and he has been reminding the volunteers to do that.

I want to take the chance to say that I am very proud of the team here at EASM. The staff and volunteers that have really adopted the mindset that we are a world class museum and we're going to act like it in every respect. We owe it to our guests and visitors and, for those of you that have been around way longer than me, we owe it to ourselves. We're all a little bit like test pilots here—we're going to strap ourselves into this bird and see how high and how fast we can push her. Along the way let's rumple the edges of a few envelopes too. Why not? ✈

CAPTAINS CORNER

DAN OVEN

SUNDAY DAY CAPTAIN

September 3, 2025, BOC meeting was a busy one with many topics before the board. I shall merely present the topics, and to avoid a multi-page report, anyone with further questions regarding the discussions can contact their Day Captain.

MUSEUM STAFF REPORTS:

Scot Laney:

- Announced that the current edition of Smithsonian Magazine contained an article about our museum's donation of a collection of Japanese letters from WWII back to their Japanese relatives.
- Will be enhancing the Huey Dustoff helicopter on display in the West Pavilion with artifacts and memorabilia. The display will be behind the helicopter.
- Pointed out that our museum allows visitors to get up close to many of the artifacts, something that most air museums do not do. That feature will be expanded where possible, and it will be pointed out in future online media posts, promotions, and advertising.
- The museum will attempt to put on a special event each month to attract more paying customers.
- Asked Day Captains and Section Leads to work with all docents on how to approach and handle museum visitors who are acting inappropriately

Scott Malendrone:

- The de-accessioned home-built aircraft have been moved from the West Pavilion floor to the outside north lot.
- The General McPeak exhibit, radios and Timmermann uniform exhibits were returned to Collections.
- The OH-23 Raven helicopter has been moved into the West Pavilion near the Huey and Cobra helicopters.
- The Link Trainer has been cleaned and partially restored.
- A drone exhibit is being prepared and will be on the floor soon.
- The entry area of the DC-3 will be cleaned up, and the documents and displays will be consolidated for more convenient and cleaner viewing.
- The interior of the VC-9 (Air Force Two) is being cleaned in preparation to resume tours. The aircraft will not be moved, as previously reported. A concrete approach apron and pads for the landing gear will be poured to support the aircraft.
- The model aircraft on display in various areas of the museum will be reviewed, pared down, and put on display where appropriate.

OLD BUSINESS:

- A continuing discussion about the placement of docents throughout the day, especially in the East Pavilion, took place. It was pointed out that the chairs removed from the East Pavilion front desk area had been moved back without authorization.
- The Artifact Change form needs to go through Barry, so it can be logged on the spreadsheet or a copy sent to Barry.

NEW BUSINESS:

- A review of the process of handling and reviewing Discrepancy Report was held.
- Barry Brown pointed out that recycling in the museum, particularly paper items, is not occurring. While paper is placed in recycling containers, it is thrown in the trash.
- Jean Herkamp reported on the recent review and inventory of items housed in the "Green Barn," located beyond the Boy Scout area on museum property.
- The system for selecting a John Rasmussen Award recipient was reviewed. Nominees are due at the October BOC meeting, and selection will take place during the December BOC meeting.

An Introduction to Collections

ALLEN HERKAMP

COLLECTIONS

No, we don't have anything to do with collecting admissions, dues, or membership from people associated with the museum. Collections is the "Library" and "Inventory Management" for all things in the museum (except Docents).

There are currently eight Collections volunteers, with experience ranging from 16 years to brand new. We usually come in once a week, on Wednesdays, and we are housed in the northeast section of the East Pavilion.

What does Collections do? Collections is charged by law to store and preserve all property donated to the museum. The reason for this is that donations are tax-deductible gifts made to the museum and must be documented on an Official Deed of Gift Agreement to a 501(c) (3) Organization for proof of the donation. Another reason is that many items are considered protected cultural, archaeological, antiquities, and ethnic items, which must be handled and maintained to ensure their protection. Such items have to be inventoried and entered into a database with the ability to identify and locate them should they need to be returned to the donor or displayed in the museum. Many items have a sentimental connection to a family member, are very rare, or are priceless in value. Once the item is in Collections, the primary objective of Collections Management is to meet the needs of the Curator

and museum management by providing the items and documentation for displays and educational needs. This depends on the above-mentioned requirements for preservation, protection, provision, and presentation of the various displays within the museum.

So, what kinds of artifacts does Collections have? Many of the aircraft and other items in the museum displays are military and are on loan to the museum. Loans vary in the length of time, and reports must be submitted to the loaning government facility (Army, Navy, Air Force, Marines) containing the status of the aircraft and items, with photos showing that the condition and environment meet their standard. No unauthorized action/alteration has been performed on the aircraft. The aircraft and support equipment cannot be painted or changed in any way without the written consent of the government agency. These aircraft have documentation in Collections, containing a variety of information, such as: flight log, maintenance documents, missions flown, where they were stationed, etc.

Commercial general aviation aircraft are either on loan or have been purchased by EASM. Again, documentation on each aircraft is substantial but varies by aircraft and loaner/owner. Other items on the floor, such as "engine row," historic aircraft, and miscellaneous items, are all catalogued and tracked through the Past Perfect Inventory System software. This is why it is very important that all display changes or relocations are communicated to Collections.

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An Introduction to Collections

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Textiles are also essential items for display to help “tell the story” in a museum display. Collections has over 70 linear feet of various uniforms hung on the wall as well as racks of boots, backpacks, hats, goggles, and helmets (even a WWI German helmet). Additional racks of items, such as stewardess uniforms, are also stored. How about a fire-retardant outfit and a firefighting outfit and a high-altitude flight suit- Collections also has them.

When people look at the enormous Hughes Flying Boat (HFB) compared to the other aircraft on display, they are amazed. If you look in Collections, the items on the HFB are just as daunting. Over 7,000, 8x10 B&W photographs on the concepts, building facilities in Culver City, design configurations considered for the HFB,

manufacturing the famous Duramold skin, building the HFB, building the hangar in Long Beach, moving the HFB to Long Beach, assembling the HFB, flight of HFB, the 1953 flood that damaged the HFB, repair, move to Long Beach Dome, and the move to EASM are in Collections. Along with the photos are over 4,500 (and counting) original engineering drawings. Another 400 linear feet of blueprints have not been inventoried yet (contents unknown). Add all the testing and official reports on the systems that were being invented, designed, and tested, and you have a nightmarish amount of reading to do. I have addressed just a little of the “Goose” material. Although no other item in the museum has that much documentation, there is a substantial amount of information on most of the aircraft and artifacts.

Whether I have piqued your interest in Collections or scared you away, you are most welcome to contact me or my wife, Jean, for a tour of Collections and further explanation of the museum’s inventory of artifacts. We would be happy to invite you into Collections if you would like to do research on an aircraft or artifact for personal interest or to share your interest through an article in the Flight Plan. Visit us on Wednesdays or contact me for another day. ➤



Dead Letters Have Returned to Life!

JEAN HERKAMP

LEAD COLLECTIONS VOLUNTEER

Editor's Note: This EASM Collections project was recently featured in Smithsonian Magazine. You can link to it [here](#).

How did letters and postcards from 1945 end up in EASM Collections rather than being delivered? In 2010, a donor brought a mailbag to the museum and donated it and its contents to the museum. We were informed by the donor that her father had somehow obtained the mailbag from the dead letter file of the Monson, Massachusetts, Post Office. It is unknown how or why the bag of mail ended up at this particular post office. Following the death of the donor's father, any specific details he might have known went with him to his grave. However, the donor felt it was important to donate the letters to a museum and was hoping they could be translated and possibly even returned to the senders. Her wish is now being granted!

Forward to 2025, and 80 years after the contents of the mailbag were originally mailed, the Collections staff, Barb Pittman and Jean Herkamp, were working

on cataloging the backlog inventory of donated items. During this process, an old tattered Japanese mailbag was found full of letters and postcards, sixteen of which had been translated – by whom is unknown. It was obvious mothers, sisters, and wives had written to their husbands, brothers, and sons. The mailbag contained 129 pieces of mail written in various versions of Japanese. Our first question was: How do we figure out what the letters and postcards are about? The mail had been posted and only made it to Yokohama. One explanation might be that when the Allies arrived, a soldier took the bag home. Another reason could be that after the Japanese surrender, the mailbag had been confiscated. We will never know! The immediate thought in Collections was that this mail needed to be translated and ultimately returned to the Japanese government. Second question: Where do we go from here?

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Dead Letters Have Returned to Life!

JEAN HERKAMP

LEAD COLLECTIONS VOLUNTEER

(CONTINUED FROM PREVIOUS PAGE)

Luckily a previous Collections Volunteer, Gayle Downs, was very familiar with the Obon Society, which had been founded 15 years ago with the specific purpose of returning WWII items such as flags, personal items, and mail to the Japanese owners or their families or descendants. The Obon name suggests reverent remembrance and is based on an ancient Japanese tradition. Obon season is three-days in summer dedicated to honoring the memory of ancestors (in 2025 this was from August 12 – 15). This is a time of “feasting, dancing, cemetery visits and placements of flowers and lanterns, as those ancestors’ spirits return to this world”.

Obon members, Rex, Keiko, and Yuki, visited EASM and reviewed the contents of the mail bag, they expressed their desire to assist EASM in translating and delivering the mail to the families or descendants. The Obon Society contacted the Consul General of the Consular Office of Japan, Yuzo Yoshioka, about the EASM find. He was very pleased and supported finding and returning this mail to the appropriate people.

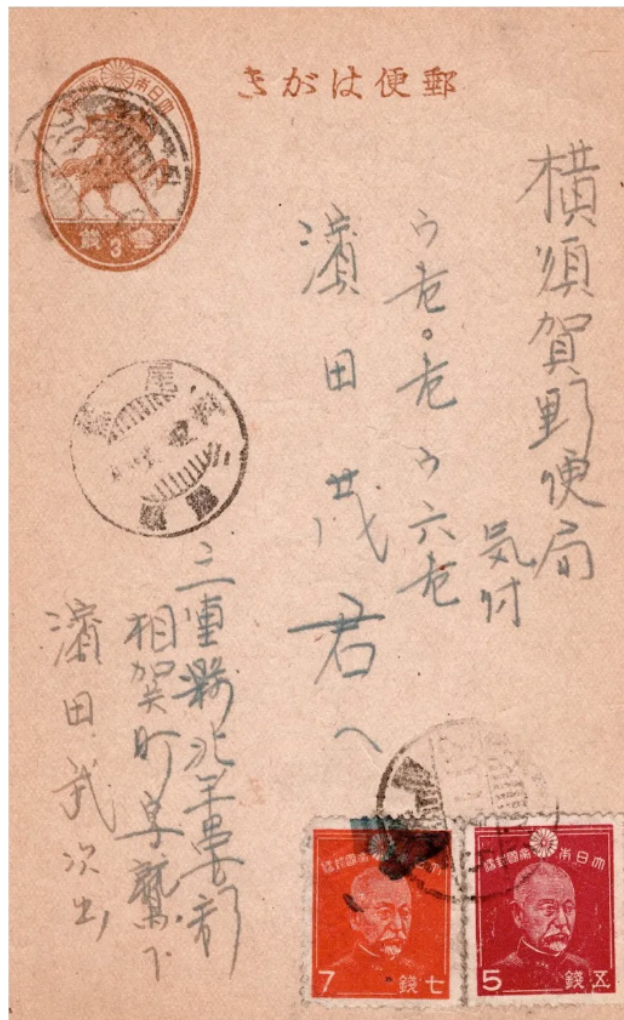
On Wednesday, January 15, 2025, a formal ceremony to repatriate this mailbag and its contents to the Obon Society and the Consul General of Japan was held inside the West Pavilion of the Evergreen Aviation and Space Museum.

UPDATE - The Obon society, with the support of the Japanese government, continues to translate these letters and postcards and attempt to return them to a family member. Currently, 26 families and 44 postcards and/or letters (some families had multiple letters in the batch) have been translated, returned to the families, and the results

shared with EASM’s CEO and Collections. Primarily written in the September to December 1945 timeframe, after the war was over. The American government has the surrender documents and has disbanded the Japanese military. The contents of the

majority of the letters have been to express their love, their everyday happenings, their loneliness for their time apart, their anxiety in not knowing where they might be, and their anxiousness for their safe return. So far, all the soldiers have been found to have died during the war, thus never to return home to their loved ones. However, in the Japanese culture, such items are not just items; they talk to them like a person who has come home. The spirit of the person is in that item. These will not just be letters; it’s like the person coming home. The remaining family members who have been located/ contacted have been gifted these letters and/or postcards and have been overjoyed, delighted for their return, and thankful that EASM and Collections have honored the people who came before us. The Collections staff are dedicated caretakers

of each and every item donated and treat each one with respect and honor. Our wish is that more relatives are located, which can be a long and arduous process, as well as possibly forming a relationship with those who have been affected by our actions. ➤



The Story Behind the Picture

ALLYN VANNOY

WEDNESDAY COLLECTIONS

Found in Collections, a lithograph of a daring sea rescue carried out during World War II

Flying his OS2U Kingfisher floatplane off the battleship USS North Carolina (BB-55) on April 30, 1944, Lt (jg) John Burns, pilot, sighted fellow airmen in the waters near Truk atoll.

Lt. Burns and his radioman, Aubrey J. Gill, had been patrolling the Truk lagoon and saw another OS2U Kingfisher capsize during an attempt to rescue a downed pilot. Burns landed and helped the downed pilot and the two crew members of the Kingfisher aboard his plane. Overloaded, Burns was unable to take off and so moved to rendezvous with the USS Tang (SS-306) submarine which had been assigned lifeguard duty.

Having delivered the three airmen, Burns then was able to get airborne and continued searching for three life rafts which were reported drifting east of the atoll. The first he spotted belonged to a lone fighter pilot. Burns was able to land safely; the pilot was able to climb aboard and shared radioman Gill's small compartment. Taxiing for two hours, Burns found the three-man crew of a downed torpedo plane. The Kingfisher, though small, could takeoff with three men in a pinch, but not six.

As Burns taxied back to the Tang, he came across a third raft and three more downed airmen. According to one of the three, who reported afterwards, the tide and wind were carrying them toward the atoll—with the possibility of capture or death; they had been paddling hard for two hours when they saw the Kingfisher approaching. Once picked up, Burns told them to tie their



raft to the Kingfisher's main pontoon. He then taxied for three hours before rendezvousing with the Tang.

Most of the time there were two men on each wing in order to balance the plane, the others were hanging on the fuselage. The plane took a beating in the choppy sea, the main pontoon springing a leak.

When the Kingfisher reached the sub, it was listing severely, nearly out of fuel. The submariners helped the airmen off the Kingfisher and then sank the plane with gunfire.

The Vought OS2U Kingfisher was an American catapult-launched observation floatplane. It had a large central float and small stabilizing floats. Performance was modest because of its low-powered engine. It served on battleships and cruisers of the US Navy and with the US Marine Corps.

For his actions that day, Lieutenant, Junior Grade, John A. Burns (NSN: 0-145323), received the Navy Cross. ➤

The Ford Flivver

ALLYN VANNOY

WEDNESDAY COLLECTIONS

Found in Collections, a toy version of the Ford Flivver

If you should get to Detroit, Michigan, and have a chance to visit the Henry Ford Museum in nearby Dearborn, be sure to check out the Ford Flivver.

In 1926, Henry Ford decided to build a small personal aircraft. It was to be a single-passenger airplane, “safe, inexpensive, and reliable.” Ford wanted an airplane that could be mass produced at low cost and suitable for the average citizen. It was to be the Model-T of the air.

The “Flivver” was a low-winged monoplane powered by a 35-horsepower three cylinder engine. The design incorporated a number of “firsts”. The framework utilized steel tubing, the landing gear were well separated to stability and the tail had a wheel instead of the usual skid. The wings were semi-cantilever to alleviate drag and rigging problems.

The first test flight was on July 30, 1926, at Ford Airport in Dearborn. The test pilot, Henry Brooks, began the flight from inside the hangar and was airborne by the time he exited the hangar.

An improved model was readied two years later. This Flivver had a 36-hp two cylinder Ford-made engine. It proved flyable while carrying more than twice its weight in ballast and fuel.

In 1928, Brooks attempted to break the non-stop distance record for light planes. On January 24, bound from the Ford Airport to Miami, Florida, he was able to get as far as Asheville, North Carolina, over 470 miles, before being forced down by bad weather. On a second attempt on February 21, he reached Titusville, Florida, nearly 1,000 miles—a world’s record for light planes. But Brooks was lost five days later after crashing in the Gulf of Mexico. Soon after, Ford canceled the program.

Only one other man flew the Flivver, Charles Lindbergh, in August 1927.

Ford Model 2A Flivver

Length	15 ft 6 in
Wingspan	21 ft 9 in
Empty weight	500 lb
Max speed	90 mph



When I Say Bombsight, You Think Norden

You Know You Do

ALDEN SKINNER

TUESDAY & WEDNESDAY COLLECTIONS, SATURDAY DOCENT

When most people think of U.S. bombing in the Second World War, the Norden bombsight inevitably dominates the conversation. Lauded as a technological marvel, the Norden became the symbol of daylight strategic bombing. Yet, in the shadow of its fame, another bombsight quietly equipped hundreds of American bombers and patrol aircraft. Less glamorous than its Norden counterpart, it nonetheless played a critical role in the early years of the war and in specific operational niches where simplicity and ruggedness mattered as much as theoretical accuracy.



Say hello to the Sperry S-1. Developed by the Sperry Gyroscope Company in the late 1930s, the S-1 was designed as a competitor to the Norden. Both were stabilized; gyroscopically controlled devices intended to compensate for aircraft motion and allow bombardiers to calculate a release point based on speed, altitude, wind drift, and target movement. The difference lay in design philosophy. Where the Norden emphasized precision and incorporated an automatic flight control system that could even take over the bomber's course in the final run, the Sperry opted for a more straightforward approach. It was mechanically simpler, faster to train on, and generally easier to maintain in the field.

This made the S-1 particularly well-suited to medium bombers like the B-25 Mitchell and B-26 Marauder, as well as naval patrol bombers such as the PBY Catalina. These aircraft often operated at lower altitudes and on missions where flexibility mattered more than pinpoint accuracy. Many Naval squadrons in the

Pacific actually preferred the Sperry because it was more durable under the humid, salt-laden conditions that caused Norden sights to go out of calibration.

A good example of the S-1's service history comes from surviving units like the museum's example, SN AC41-497, an S-1 identified as part of the 1941 production run. 1941 units were rushed into service as America geared up for the rapidly expanding conflict. Though overshadowed by the prestige of the Norden, these Sperry sights were often the ones that bombardiers actually trusted in combat environments far from carefully maintained stateside bases.

By 1943, as heavy bomber campaigns over Europe intensified, the Norden largely displaced the S-1 in the Army Air Forces' strategic units. However, the Sperry remained a valuable tool in the Navy and in training roles, where its simpler construction meant fewer headaches for maintenance crews and instructors. Its contribution extended well into the war's middle years, particularly in secondary theaters.



Today, surviving examples such as ours are reminders of a technology that deserves more recognition. The Sperry S-1 may not have had the Norden's mythical aura, but it reflects a pragmatic side of American aerial warfare: equipment that worked reliably under pressure, even if it never claimed the headlines. The S-1 provides proof that the U.S. bombing effort depended on more than just one "secret weapon." It's one of the many treasures in Collections. ➤

What May Look Like Trash May Really Be Treasure

ALLEN HERKAMP

COLLECTIONS

When you see a field overgrown with weeds and brush (blackberries in Oregon), you never know what is under that mound of Oregon flora. Particularly, 33 years after the Hughes Flying Boat (i.e., HFB or “Spruce Goose”) arrived at McMinnville, OR, and parts and pieces were stored anywhere there was space available – inside and outside. What could survive under this mound of vegetation in this Northwest environment?

Several months ago, a vacant lot was cleared on the EASM Campus and - **“Surprise!”**. Large “Styrofoam bales” were uncovered. Since recovery, they have been sitting on the black top behind the West Pavilion (i.e., Air Museum). This is the **“treasure”**. This treasure is the missing link in my 2020 article on the beach balls found in the HFB’s interior.

To clarify an old misconception, let’s go to the HFB documentation about the added flotation to the HFB in case a float/pontoon breaks off during taxi or the hull takes on water.

Five years ago, I wrote an article on the beach balls found in the Hughes Flying Boat when it was moved to McMinnville, and restoration began. I listened to my tutor in 2008 and repeated the storyline I heard from him when leading a tour. What I had been taught was wrong. What is worse is that I was passing this to the museum visitors.

The colored beach balls are not original on the flight, and they are not filled with 1947 air. “Smokey white” 20-inch DuPage Vinyl-Lite Corp. beach balls were installed in the hull, wing tips, and the floats, held down with tennis nets, in October 1947. Just before the November 2nd, 1947, first and only flight.

Shortly after the flight (1950 - 1951), the DuPage beach balls in the hull were replaced with Styrofoam bales meticulously contoured to the hull and placed alongside the catwalk.

Official HAC photographs dated April 1953 show a small number of colored beach balls on the floor

of the Long Beach hangar after the 1953 flood. Written documentation states that colored beach balls, secured with a harness made of webbing, attached to a 40-foot line and 4-pound weights, were used as lane markers for the taxi area. No documentation has been found in the HAC file to verify that these were the same balls. Another official HAC document dated April 1957, states explicitly that Kestral 20B-H.D. “rainbow” colored beach balls were installed in each float. Note: this is 10 years after the flight. These are also the beach balls on display – they are not original to the flight.



The “treasure” I refer to are these Styrofoam bales, and they are the “surprise” found in the weeds in an overgrown field. The four Styrofoam bales are original from the 1949 to 1952 era and have miraculously survived 33 years in the “wilderness”. Yes, they show signs of neglect, but for the most part, they are still intact and waiting to be saved. These bales clarify the history of the added flotation done to preserve the Hughes Flying Boat if it broke apart during future flight attempts – none of which were ever performed.

Now it is time to preserve another historic piece of the world’s only Hughes Flying Boat – the anchor of Evergreen Aviation and Space Museum. ➤

The Mysteries at the Museum!

ALLEN HERKAMP

COLLECTIONS

I started volunteering at the Evergreen Aviation and Space Museum in 2008 as a Docent, when the air museum was the only part of the museum that existed. When the Space Museum (East Pavilion) opened, I volunteered to switch and be a Docent there. Then came the opportunity, during a museum Christmas party, to meet people in the Collections department. I became fascinated with the historic value of the artifacts in Collections and how few had been examined, let alone catalogued. I soon became a member of the Collections staff and have not been bored or without a challenge since. In fact, there are times I wish for a little reprieve and a slowdown of things to be done.

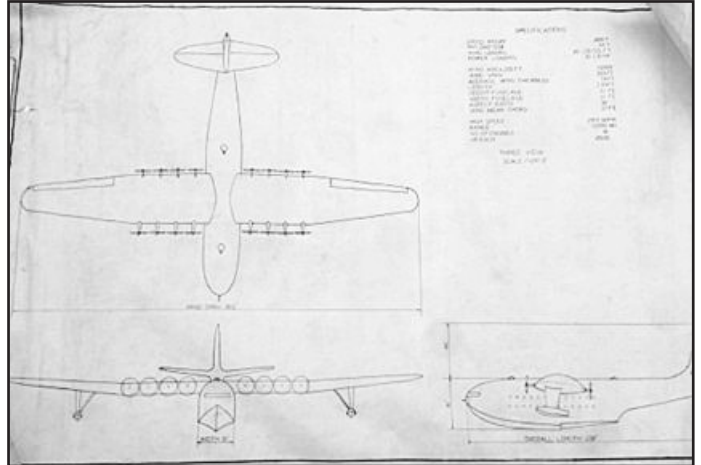
What I enjoy most is being exposed to the background material and history of each artifact in the museum. Aircraft, engines, missiles, spacecraft, uniforms, memorabilia, documentation, drawings, photos, stories, etc. The variety seems endless. The amount of information in Collections on the items in the museum is staggering. This information brings life and meaning to the cold artifacts on the floor. One can identify the aircraft, its history, who flew it, where, when, and why. What engagements was the plane in? The C-47 is being restored and brought inside due to its historical significance and importance in wartime. Everything on the floor has a history, and one can find out all about it from the material in the Collections. This is GOOD!

The material I have been associated with most are the huge Hughes Aircraft files on the Hughes Flying Boat. Nothing below the “water line of this iceberg” has been researched or catalogued at this time, even though the Hughes Flying Boat is the “anchor” of the museum and has been here for 33 years.

An example of two items in Collections that have perplexed me for years are unidentified engineering drawings that have no identifying information on them, and no documentation has been found in the files. This is the MYSTERY of the museum.

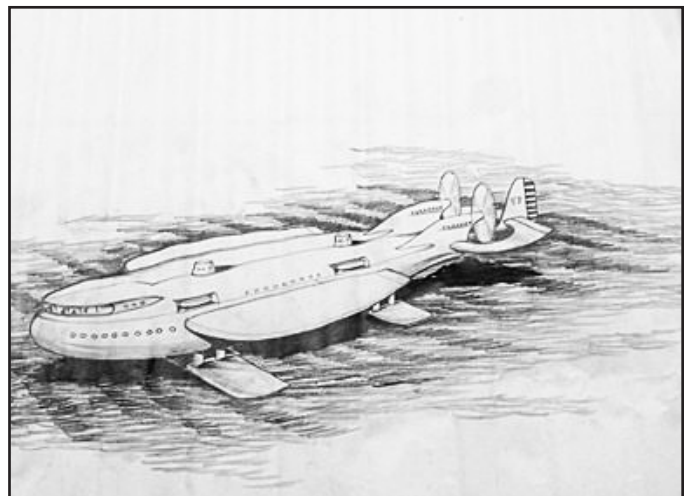
Mystery 1:

A Hughes Aircraft Company drawing (undated) of a flying boat configuration with 16 engines (eight tractors and eight pushers), a nose and tail gunner, and two dorsal gunners.



Mystery 2:

A Kaiser Company drawing dated 8/31/42, depicting a twin hull, twin pusher engines, on hydrofoils. This is from the period when Hughes and Kaiser were working together.



If you have a great passion for history and research, especially on items at the museum, talk to your Day Captain or visit Collections on a Wednesday. Collections is in the NE corner of the East Pavilion behind the SR-71. ➤

How The Goose Was “Plucked” But Never “Cooked”

ALLEN HERKAMP

COLLECTIONS

On November 2, 1947, the Hughes Flying Boat (HFB), aka Spruce Goose, flew for the first and only time. After the flight, it was kept stored under tight security, updated with new technology, and maintained in a temperature and humidity-controlled hangar at Pier “E” in Long Beach, CA harbor.

Next to the Hughes Hangar was a Naval drydock on which a Pacific Dredging Company’s dredge was pumping water and sledge into an artificial lagoon adjacent and south of Hughes hangar.



In September 1953, the seawall on the south end of the lagoon failed, releasing a flood of silt, mud, and seawater that inundated much of Hughes' property and buildings. This was made worse by dredging and oil well drilling on Terminal Island, which caused the island to sink more than four feet in eight years.

Inside, the hangar graving docks were filled with mud and seawater, causing the HFB to float off its cradle, causing damage to the hangar’s main gate, necessitating its replacement. The bulk of all damage was to the structure of the HFB.

The tail cone was severely damaged and required placement in the assembly jig for realignment and replacement of a large number of structural items. The starboard aileron flying tab and trim tab were removed and placed in a jig for realignment and repair. Many broken ribs and the trailing edge had to be repaired. The rudder was removed, placed in a jig for realignment



and repair. All fabric on the flying tab and rudder had to be removed for inspection and then replaced.



The Number 5 engine’s nacelle was removed and repaired. The port wing leading edge sustained punctures and many bruises. The starboard wing had six punctures in the top skin of the trailing edge and a puncture in the leading edge.

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How The Goose Was “Plucked” But Never “Cooked”

ALLEN HERKAMP

COLLECTIONS

(CONTINUED FROM PREVIOUS PAGE)

The hull sustained several breaks, punctures, and bruises, as did the port float strut. An extensive engineering study was conducted to determine if excess loads were applied to any part of the HFB structure.



Damage to the land consisted of mud, silt, and seawater covering approximately 62,000 sq. ft. in depths ranging from 3' to 4'. The five significant buildings on the property all sustained major damage due to the flooding. High water lines in these buildings were up to 3 feet, and the silt deposited was up to eight inches. The graving dock and float docks were completely filled.



Tools, electrical items, parts, shop equipment, building material, supplies, furniture, reports, drawings, engineering data, test data, etc., were

covered and saturated with mud, silt, and seawater. While the repairs to the HFB took over two years to complete, the battle between Long Beach and Howard Hughes took years. Hughes charged the City of Long Beach with causing the disaster and filed suit for \$12,000,000. In 1964, the HFB project was shut down and all personnel were transferred or let go, except a few to maintain the security, temperature, and humidity conditions, and tests were conducted in the hangar. It wasn't until 1966, nearly 13 years after the flood, that the matter was settled. Long Beach paid a substantial sum in cash and gave Hughes a ten-year lease on the harbor site. The City of Long Beach wanted to develop the land on which the HFB was stored, but Hughes continued to pay rent, no matter how much the rent was raised.

The U. S. General Services Administration had held Title on the HFB since 1949 but could not find a buyer. They tried giving it to the Smithsonian, but they had no place to put it. Finally, an agreement with the Summa Corporation in 1975 gave the Racer to the Smithsonian and the HFB to Summa. Plans for the final disposition of the HFB were to distribute pieces of it to the Smithsonian and eight other museums. Due to public pressure, a decision was made to delay this disposition. In 1976, Hughes died, and Summa turned to the U. S. Navy, which had expressed interest in it. In 1977, there was talk of the plane again, but funds dried up, and Summa started to talk to museums. In 1980, a committee was formed to save the HFB. The city of Long Beach, suffering from maintaining the Queen Mary, did not want to spend money on the HFB. Finally, the HFB was donated to the Aero Club of Southern California (ACSC). Summa, Wrather, and others loaned cash to the ACSC, Aero Exhibits Corporation (AEC), and Wrather took charge in 1982 by displaying the HFB in a dome next to the Queen Mary. In 1988, Disney acquired Wrather Corp. and the HFB lease. In 1992, Disney notified Long Beach and the Aero that it intended to relinquish its lease. Aero Exhibits requested bid proposals for acquiring the HFB. Michael King Smith submitted the winning bid, and the HFB became the property of Evergreen Air Ventures in July 1992.

This is how the Goose had its feathers “plucked” but avoided being “cooked”. It’s alive and well in the Evergreen Aviation and Space Museum in McMinnville, Oregon.

The A-10 Warthog: Close Air Support Icon

BILL KOLB

MONDAY DOCENT, EAST PAVILION

The A-10 Thunderbolt II, commonly known as the "Warthog" due to its rugged appearance and battlefield durability, is a twin-engine, straight-wing jet aircraft designed specifically for close air support (CAS) missions. Developed by Fairchild Republic to meet the U.S. Air Force's need for a dedicated tank-busting plane during the

Cold War, the A-10 first flew in 1972 and entered service in 1976. Its primary mission is to deliver precise, low-altitude support to ground forces, targeting armored vehicles, artillery, and other assets with exceptional accuracy in high-threat environments.



The A-10's design prioritizes survivability, incorporating a titanium "bathtub" armor to protect the pilot, redundant hydraulic systems, self-sealing fuel tanks, and the capability to operate with significant damage, such as the loss of one engine or portions of a wing. Powered by two General Electric TF34-GE-100 turbofan engines, each generating 9,065 pounds of thrust, the A-10 achieves a maximum speed of approximately 420 mph, a range of 800 miles, and a ceiling of 45,000 feet. With a length of 53 feet 4 inches and a wingspan of 57 feet 6 inches, it can carry up to 16,000 pounds of ordnance, including bombs, missiles, and rockets.

The A-10's defining feature is its GAU-8/A Avenger cannon, a 30mm seven-barrel Gatling gun mounted in the nose, around which the aircraft was designed. Weighing 620 pounds empty and over 4,000 pounds loaded, the hydraulically driven GAU-8 fires up to 4,200 rounds per minute, though pilots typically use 1-2 second bursts to conserve ammunition and prevent overheating. It fires a combination of depleted uranium armor-piercing incendiary (API) and high-explosive incendiary (HEI) rounds, with a muzzle velocity of 3,400 feet per second and an effective range against tanks of up to 4,000 feet. The cannon's recoil force averages 10,000 pounds, necessitating the aircraft's robust structure. Developed by General Electric in the early 1970s, the GAU-8 underwent extensive testing, including over 39,000 rounds fired in flight trials from 1974 to address issues like gun gas ingestion into engines. It carries 1,174 rounds, enabling devastating strafing runs that produce the iconic "BRRRT" sound.

In combat, the A-10 proved its effectiveness during the 1991 Gulf War, flying 8,100 sorties with a 95.7% mission-capable rate, destroying 987 tanks, 926 artillery pieces, and over 1,300 vehicles using its cannon and Maverick missiles.

Upgraded to the A-10C variant with digital avionics, precision-guided munitions, and helmet-mounted cueing, the Warthog remains in service as of September 2025. However, the Air Force plans to retire its approximately 260 aircraft by the late 2020s, favoring multi-role fighters, though congressional efforts may extend some units' service life.

Our Warthog

Our A-10C was deployed to Saudi Arabia for Operations Desert Shield and Desert Storm, where Col. D.E. Sawyer piloted it. On February 15, 1991, it was struck in the tail by an Iraqi SA-16 surface-to-air missile and sustained over 300 shrapnel holes. The aircraft was offline for 11 days, and after 139 hours spent on repairs, it rejoined air operations.

In a word: **Durable.**



German V-1 Buzz Bomb American JB-2 Loon

DAN GOODRICH

MONDAY DOCENT, EAST PAVILION

The bright yellow Loon hanging from the ceiling in the East Pavillion is one of the first artifacts visitors see when entering the building.

The JB-2 Loon (Navy designation LTV-N-2) was an American adaptation of the German V-1 flying bomb, originally deployed by Germany against England in 1944. Republic Aviation constructed the airframe based on technical drawings made by studying wreckage of the German V-1. The engine, replicating the V-1's 900-pound thrust Argus-Schmidt pulse-jet, was manufactured by Ford Motor Company. The Navy had developed plans to launch thousands of Loons from Navy submarines or other Naval vessels in support of an invasion of the Japanese home islands. The Japanese surrendered before the invasion so the Loon was never used in war.

I'd like to share with visitors that one of my first childhood memories was going to Point Mugu Naval Air Station, just outside of Oxnard, California, and getting to watch the launch of a Loon.

My father was in the Civilian Navy working as a fine Instrument Technician and an Electrician. As a young man, he became interested in aircraft instrumentation after seeing aircraft at Salem Airport,

now McNary Field in Salem. He took a series of courses and became certified to work on aircraft. His training proved to be valuable to him and to the Navy. When he tried to enlist in the Navy after Pearl Harbor, he was encouraged to sign up for the Civilian Navy by the recruiter who knew the Navy needed qualified workers to help in the maintenance and development of Sonar systems. He applied and was accepted.

When the war ended, he returned to Oregon but did not find satisfying work. He rejoined the Civilian Navy in 1949 to use his skills to work on guidance systems for the Loon, aka JB-2 (Jet Bomb-2), at Point Mugu.

During the period after the war and through 1953, the Navy worked to improve the Loon weapon system. Various launch systems were tested, including JATO rockets for faster launch speeds, improved gyro systems for launching in rolling ocean conditions, and even possible air launches from a PBY aircraft. The Pulse jet engine system was refined and tested to improve reliability, range, and accuracy. Continuing advances were made in radio-controlled guidance systems that were secure from enemy jammers.

The launch I witnessed was part of that development process. My father's role was as a member of a 20-person team.

I recall that the launch was considered very successful, and everyone was pleased. It was quite an experience for me. ↗



Band of Brothers



The McMinnville, Oregon Band of Brothers meets on the **first Thursday of each month** in the large glass-walled room to the left of the primary admissions desk in the West Pavilion (formerly the Aviation Museum). **Meetings run from 11:30 am to 12:30 pm**, with coffee and cookies served. More details can be found at the group's **Facebook page: <https://www.facebook.com/groups/838928846550343>**

JOHN BURLESON

COLLECTIONS & SUNDAY DOCENT

OCTOBER 2ND

Our speaker will be Art Pohl. Art is a U.S. Navy veteran who served during the Cold War/Vietnam Era. Art's presentation will entail a little-known story regarding Willamette University's football team and Pearl Harbor.

OCTOBER 29TH

The Band of Brothers will once again visit the Brothers Auto Collection in Salem. We are meeting up at 12:00pm.

NOVEMBER 6TH

Earl Kisler, who was on the USS Pueblo when it was captured by the North Koreans, will be our presenter.

MUSEUM MISSION

Evergreen Aviation & Space Museum is a force of curiosity and courage for kids of all ages to gain the confidence to take flight.



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