

aloft

Volume 34, Number 3

May | June 2012

THE MUSEUM OF FLIGHT
MAGAZINE



Soyuz TMA-14 Descent Module

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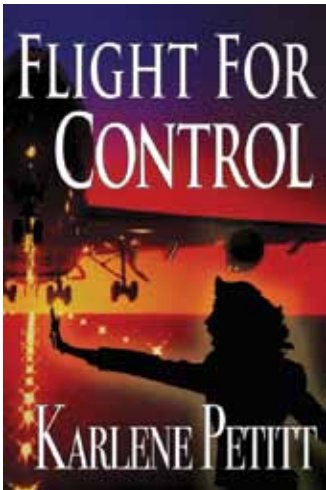
BEARS

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Frequent Flyers

Member Event | Book Club “Flight for Control”



Saturday, July 14, 2012 - 9am - 10am
Murdock Theater

Join The Museum of Flight Book Club! Each *Aloft* issue, we'll highlight a book available for purchase in the Museum Store. Read the book—then meet the author at our Book Club gathering!

Our first book is the novel “Flight for Control” by pilot and author Karlene Pettit. Karlene will join us for our Book Club discussion on Saturday, July 14 at 9 a.m. in the Murdock Theater. To RSVP for this event, e-mail rsvp@museumofflight.org or call 206.768.7221.

Kathryn Jacobs was on a fast track in a career that she loved with the National Transportation Safety Board until her life took a different direction. Now, ten years later, she lives with her husband, Captain Bill Jacobs, and their twin daughters in Seattle, Wash.

Haunted by her past, and yearning for the career she'd given up, Kathryn's offered an opportunity of a lifetime—to return to the N.T.S.B. to investigate a series of airline accidents.

Unfortunately, Bill has other plans. While her husband is campaigning for his airline pilots' union presidency, Kathryn secretly investigates the mystery of these unexplained crashes. And the only thing stopping her from discovering the truth is a trail of deception paved by her husband.

About the author:

Karlene Pettit is a pilot for eight airlines, has seven type ratings, and two masters degrees. “Flight for Control” is her first novel.

BEHIND-THE-SCENES

Taking Care of Your Family Heirlooms

Saturday, June 2, 9:30 and 11:30 a.m.
Murdock Theater

Museum of Flight Assistant Registrar Kathrine Browne and Photo Archivist Amy Heidrick will share great ways to use museum methods at home to care for family heirlooms including photographs, garments, and paper materials.

Seating is limited to 35 Members per presentation. RSVP to Sandra Ewing at 206.768.7221 or rsvp@museumofflight.org. Program is for Museum Members only (no guest passes please).

Military Fly Moms—Sharing Memories, Building Legacies, Inspiring Hope

Reception with Author Linda Maloney
Saturday, June 9, 1 p.m.
Weyerhaeuser Room

“Military Fly Moms” is a biographical collection of the inspiring true stories of more than 60 women who shared the same two dreams—becoming aviators in the military and being moms. Meet author Linda Maloney before her 2 p.m. presentation in the William M. Allen Theater.

GOING ON VACATION?

Don't forget that your Museum of Flight membership card gets you free admission to these other great air and space museums throughout the West.

Aero Space Museum of Calgary
Calgary, Alberta, Canada | asmac.ab.ca

Canadian Museum of Flight
Langley, B.C., Canada | canadianflight.org

Olympic Flight Museum
Olympia, Wash. | olympicflightmuseum.com

McAllister Museum of Aviation
Yakima, Wash. | mcallisttermuseum.org

Pearson Air Museum
Vancouver, Wash. | pearsonairmuseum.org

Oregon Air & Space Museum
Eugene, Ore. | oasm.info

San Diego Aerospace Museum
San Diego, Calif. | aerospacemuseum.org



The Museum of Flight is affiliated with the Association of Science-Technology Centers ASTC Travel Passport Program
astc.org

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On the cover: The Soyuz Capsule returning to Earth
Photo: NASA



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THE MUSEUM OF FLIGHT
MAGAZINE



Backdropped by the blackness of space, the Soyuz TMA-14 spacecraft departs from the International Space Station.

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Smithsonian Institution
Affiliations Program





One of our goals here at the Museum is to always offer something new to see when you visit. Some days it's a Fighter Ace telling the thrilling stories of dogfights during WWII. Other days, it's an astronaut talking about time on the International Space Station. Still others it might be vintage airplanes flying in to give visitors a close-up look, a Boeing 787 in the parking lot, or a FIRST Robotics team revving up its latest creations in the Side Gallery.

But this spring and summer, even by our own standards, there's going to be a lot going on at The Museum of Flight, so you're going to want to mark your calendars to make sure you don't miss a thing.

We're kicking off May with Space Day on the 3rd, a Free Thursday event featuring a world of family activities and presentations from 5 to 9 p.m. On the 19th, we'll once again be hosting an Armed Forces Day celebration and flag-raising, this year with Chinook, Blackhawk, and Kiowa helicopter fly-ins and a special presentation by USS *Nimitz* Strike Group Commander Rear Admiral Peter A. Gumataotao. That same day, we'll be presenting a B-17 Flying Fortress Ground School with our own "Boeing Bee" in a starring role, and the next week the B-17 "Aluminum Overcast" will arrive for those who want to actually fly! Next, on Memorial Day, May 26th, we'll be joined by Medal of Honor recipient Gen. Patrick Brady and the Boeing Employees Concert Band for a day full of activities and the official unveiling of our Vietnam-era Huey helicopter in the Great Gallery.

June gets even more busy as we introduce visitors to a new-look Airpark on the 1st – with special games and activities for kids and adults alike. On June 2, we'll be a major participant in the new Seattle Science Festival at Seattle Center and the week of June 3rd through 10th, we'll help bring the Festival to the community with activities all around the city and here at the Museum. And on the evening of the 22nd, we'll host a "Space Luminaries" event, featuring astronauts Dr. Bonnie J. Dunbar and Dr. George "Pinky" Nelson and Mark Sirangelo of Sierra Nevada Corporation.

The day we've all been waiting for, though, will come on June 16th. That's the day that the crew compartment of the eagerly anticipated Space Shuttle Trainer will make its way to Seattle. Stunning in size, it will arrive aboard the only plane large enough to carry it: the NASA Super Guppy. For those of you who have never seen the Guppy in person, it will be a sight to behold – a whale-shaped craft with wings that you will hardly believe can fly. It will circle Seattle, land at Boeing Field, and deliver what will be the newest and most impressive must-see attraction in the Pacific Northwest.

I invite you to join us for all of these events and many, many more you can find on our calendar. Don't miss out – it's going to be a tremendous couple of months.

Sincerely,

Douglas R. King
President and CEO

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Space Shuttle Trainer Delivery Begins; Crew Compartment Due June 16

The delivery of what has become one of the Northwest's most eagerly anticipated new residents - the NASA Space Shuttle Trainer - has begun. The first parts of the Trainer to be delivered - the engine bells - arrived via truck April 16 and the crew compartment is due for delivery on June 16.

The three engine bells, each one weighing more than 800 pounds and 9 feet in diameter, will be reunited with the rest of the Trainer over the course of the summer, with the delivery of the crew compartment in three separate flights aboard the NASA Super Guppy. Manufactured by Airbus Industries, the unmistakable Guppy, designated 377SG-201, has a cargo compartment that is 25 feet tall, 25 feet wide and 111 feet long. It carries a maximum payload of more than 26 tons and has a unique hinged nose that can open more than 200 degrees, allowing large pieces of cargo to loaded and unloaded from the front. Following the June 16 delivery of the crew compartment, two other delivery flights will be made in July and August.

Be sure to mark your calendar for the arrival of the Guppy and a fly-in unlike any you've ever seen and visit www.museumofflight.org for Trainer-related news.

Clockwise from top: NASA's Super Guppy Turbine cargo plane (NASA); Muesuem President and CEO Doug King welcomes the Space Shuttle Trainer's engine bells on April 17; The Trainer crew compartment being lifted off its base at Johnson Space Center in Houston (scheduled to arrive at the Museum on June 16); one of the three Space Shuttle Trainer engine bells; A full view of the Space Shuttle Trainer (Photo by Dr. Bonnie Dunbar).



THE MUSEUM OF FLIGHT DISPLAYS A PIECE OF ISS HISTORY

by Ron Hobbs



Seated left to right, spaceflight participant Guy Laliberté, Russian cosmonaut Gennady Padalka, Expedition 20 commander, and NASA astronaut Michael Barratt, Expedition 20 flight engineer, sit in chairs outside the Soyuz capsule just minutes after their landing near the town of Arkalyk, Kazakhstan on Sunday, Oct. 11, 2009.

On Feb. 10, the Museum took delivery of its first large artifact for the new Charles Simonyi Space Gallery, the Descent Module of the Soyuz TMA-14 spacecraft. On loan from Hungarian-born software entrepreneur Charles Simonyi, for whom the gallery is named, it is the craft in which he launched on his second self-financed voyage to the International Space Station in 2009. This piece of human spaceflight history will be an important addition to the Museum's collection, helping to tell the stories of the building of the Station, of the beginnings of commercial space tourism, and of the first half-century of human spaceflight.

Though the term 'venerable' is often overused, the Soyuz spacecraft is truly venerable, providing access to low Earth orbit for almost 45 of the first 50 years of human spaceflight. Originally designed by the Korolev Design Bureau in the 1960s as the vehicle that would take cosmonauts to the Moon, Soyuz first flew in 1967. It was

a premature and tragic flight that killed cosmonaut Vladimir Komarov when the landing system failed. By the time Soyuz became operational 1969, the "Moon Race" was all but over, so the Soyuz, the first Russian spacecraft capable of active maneuvering, rendezvous and docking, has spent most of its tenure as a ferry to a variety of space stations, starting with a flight to the world's first station, Salyut 1, in 1971. That flight also ended in tragedy; the three cosmonauts of Soyuz 11 became the first, and so far the only, humans to die in space. The capsule depressurized during preparations for re-entry and the crew was asphyxiated. Since then, the Soyuz spacecraft has an exemplary safety record for travel into space.

The Soyuz spacecraft has been modified and updated numerous times over the years. The TMA version is the latest modification, incorporating changes requested by NASA for better service to the International Space Station. TMA, from the Russian, means Transport

Modified Anthropometric, and it is better able to accommodate variety in the size of the crew. It is also the first expendable spacecraft to utilize a "glass cockpit."

The Descent Module on display at the Museum is the only part of the entire spacecraft that survives re-entry and returns to Earth. During flight, the module is the central part of the entire spacecraft. Behind it is the Service Module, containing facilities for life support, instrumentation and propulsion. Two solar panels generate electricity for the spacecraft. In front of the DM is the Orbital Module, providing an extra 230 cubic feet of living space. At the front end of the Orbital Module sits the docking mechanism for connecting to the Station, as well as the rendezvous antennae. These two modules are jettisoned prior to re-entry and burn up in the atmosphere.

Soyuz TMA-14 (ISS Flight 18S) was the 46th human spaceflight to the ISS and delivered members of Expedition 19

and 20, Commander Gennady Padalka and Flight Engineer Michael Barratt. Of the four different Soyuz spacecraft that Charles Simonyi flew on, TMA-14 seems perfect to display at The Museum of Flight; Charles was not the only person from the Northwest to fly in it. Michael Reed Barratt, who served as flight engineer aboard the spacecraft and sat in the left seat, was born in Vancouver, Wash. and graduated from Camas High School. He obtained a B.S. in Zoology from the UW before studying medicine at Northwestern University. Dr. Barratt is board certified in Internal and Aerospace Medicine, and currently manages the Human Research Program at NASA Johnson Space Center. This program guides applied research oriented toward mitigating the most prominent health and performance risks associated with human spaceflight. He is married with five children.

The Soyuz TMA-14 spacecraft commander, Gennady Ivanovich Padalka is a pretty significant figure in the history of spaceflight as well. He is the veteran of three long-duration

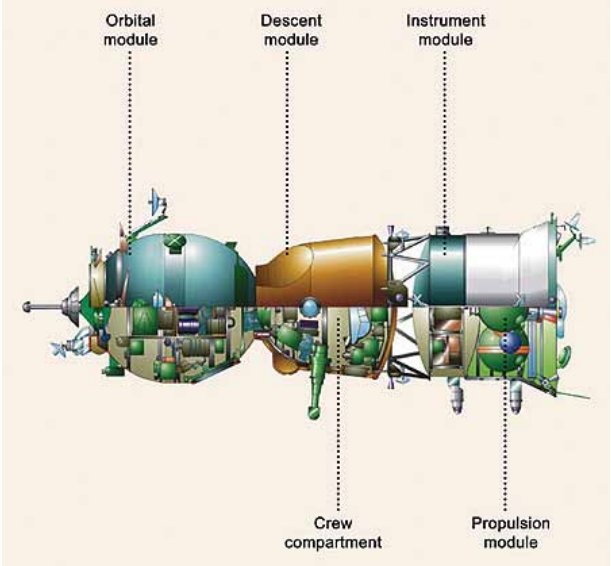
spaceflights, one on Mir and two on the ISS, ranking sixth in total time spent in space. He is the only person of any nationality to so far command multiple expeditions aboard the ISS (Expeditions 9, 19 and 20) and is scheduled to return to the Station in May. After serving as flight engineer for Expedition 31, he will graduate to command Expedition 32. As part of Expedition 20, he was the first to command a six-person crew. Gennady was born and raised in Krasnodar, a city in the south of Russia, near the Black Sea. He became pilot in the Russian Air Force, retiring as a colonel. He is a master pilot, having logged 1500 hours in six types of aircraft and he has performed more than 300 parachute jumps. He is married with three daughters.

Charles Simonyi returned to Earth with the members of Expedition 18 aboard Soyuz TMA-13. The TMA-14 spacecraft remained attached to the ISS, serving as a lifeboat for

the Expedition 19 and 20 crews. Cirque du Soleil founder and CEO Guy Laliberté, on the final self-financed trip to the ISS, returned with Padalka and Barratt at the end of their space station increments.

Though the Soyuz never carried people to the Moon as it was designed to do, that may change soon. Space Adventures, Ltd., the Virginia-based company that acted as the agent for Simonyi's and Laliberté's flights to the Space Station is advertising a trip around the Moon aboard a modified Soyuz which they expect may fly before the end of the decade. The next lunar trip may very well be made by a cosmonaut and two spaceflight participants aboard a venerable spacecraft that has been flying to space for 50 years.

Ron Hobbs is the Public Programs Assistant for The Museum of Flight and a Solar System Ambassador for NASA's Jet Propulsion Laboratory.



Russian engineers prepare the Soyuz TMA-14 spacecraft and boosters for mating on March 23, 2009 at the Baikonur Cosmodrome in Kazakhstan. The Soyuz launched the crew of Expedition 19 and a U.S. spaceflight participant on March 26, 2009.



The Soyuz TMA-14 launches from the Baikonur Cosmodrome in Kazakhstan on March 26, 2009.



U.S. spaceflight participant Charles Simonyi (left), cosmonaut Gennady Padalka (center), Expedition 19 commander, and astronaut Michael Barratt (right), NASA Expedition 19 flight engineer, shake hands after an inspection of their Soyuz TMA-14 spacecraft March 12, 2009.

Attack on Dutch Harbor

by Ted Young



National Archives



National Archives

Seventy years ago, on June 3 and 4, 1942, aircraft of the Imperial Japanese Navy attacked the Naval Air Station at Dutch Harbor, on the island of Unalaska in the Aleutians, and Fort Mears, the nearby U.S. Army base.

The Imperial Navy's General Staff intended the attack on Dutch Harbor to serve as a diversion in support of the Imperial Navy's large operation against Midway, scheduled for June 4, 1942. The planned invasion and seizure of the islands of Attu and Kiska at the western end of the Aleutian chain, to follow the Dutch Harbor Attack, was a pre-emptive move to prevent American forces from using these islands as bases for air raids against the Japanese home islands. The Imperial Navy hoped to base long-range sea planes at Kiska to patrol the northern Pacific Ocean, thereby extending Japan's defensive barrier. Responsibility for the Aleutian Operation was given to the Imperial Navy's Fifth Fleet, and consisted of an invasion force of troop transports and their escort, and the Second Strike Force, composed of two light aircraft carriers, the Junyo and the Ryujo with two heavy cruisers and three

destroyers. Opposing the Japanese forces were the ships of the U.S. Navy's Task Force 8, 20 PBV Catalinas from Patrol Wing 4, P-40 fighters, B-26 medium bombers, and B-17 and LB-30 heavy bombers from the 11th Air Force. The Americans had been alerted at the end of May that a Japanese attack was imminent.

The appalling weather around the Aleutians hindered the efforts of both sides, making it difficult for American B-17 and PBV patrol planes to track the movements of the Japanese attack force, and disrupting the initial Japanese attack. At first light on June 3, the Japanese carriers launched the first of two planned waves of airplanes, six A6M2 Type Zero Fighters and 14 B5N2 Type 97 Carrier Attack Bombers (Kate) from the Ryujo, with nine Zeros and 12 D3A1 Type 99 Carrier Bombers (Val) from the Junyo. Weather forced the Junyo's airplanes to turn back, while only the six fighters and 13 of the bombers from the Ryujo made it to Dutch Harbor, arriving around 5:45 a.m. Finding no American fighters over the harbor, the six Zeros dived down to strafe, catching a PBV on the water that was about to take off. The

PBV pilot managed to beach his heavily damaged airplane on a spit of land across the harbor. The Zeros then turned to strafing other installations while the Kates carried out a level bombing attack on Fort Mears from higher altitude, destroying two barracks buildings, two warehouses, and a long-range radar site. An attack on Navy installations damaged the radio station, but other bombs overshot their targets.

The Japanese returned the next day. Fifteen Zeros, nine Kates, and six Vals arrived over Dutch Harbor at 5:55 p.m., the Zekes shooting down a PBV on their way to the target. The Val dive bombers hit four large fuel oil tanks, setting them on fire, then bombed the transport Northwestern, and demolished a nearby warehouse. The Kates were less effective. One flight aimed at the fuel tanks, but missed. A second flight targeted the facilities at the Naval air station, but fortunately most of their bombs fell harmlessly into the bay, only one bomb hitting an uncompleted hanger. An attempt to bomb the ammunition storage area also missed the target, the bombs falling on open ground, with one bomb knocking out

an anti-aircraft position, killing the gun crew. As the Japanese planes reached their rendezvous point to return to their carriers, six P-40s from the 11th Fighter Squadron jumped them, shooting down two Vals and a Zero for the loss of two P-40s. Two more Vals, damaged by anti-aircraft fire, failed to make it back. One other Zero, damaged by ground fire, crash-landed on Akutan Island, providing the U.S. Navy with its first intact Mitsubishi fighter.

The attacks on Dutch Harbor cost 78 American lives, but did comparatively little damage. So began the Aleutian Campaign, which would last until August 15, 1943.

Ted Young is a volunteer at The Museum of Flight

» Clockwise from upper left

Smoke rises from burning barracks and warehouses at Fort Mears, bombed during the first attack on Dutch Harbor, June 3, 1942. • The Val dive bombers caused more extensive damage during the second attack on June 4, 1942. Black smoke rises from the fuel oil tanks in the background while smoke pours from the transport *Northwestern* in the center of the picture. The seaplane ramp at the Naval air station is on the right. • Bombs from the Kate carrier bombers falling harmlessly into the harbor on June 4, missing the Naval air station, their intended target • On June 4 the P-40s of the 11th Fighter Squadron intercepted the Japanese attack force on its withdrawal, shooting down two Vals and a Zero. Following the attack, the squadron painted a tiger head on the nose of its P-40s. The squadron's commander was Major Jack Chennault, son of the famed leader of the American Volunteer Group, Claire Chennault. • The PBVs of Patrol Wing 4 flew continual searches for the Japanese fleet in awful weather, loosing several airplanes to the Zero fighters.



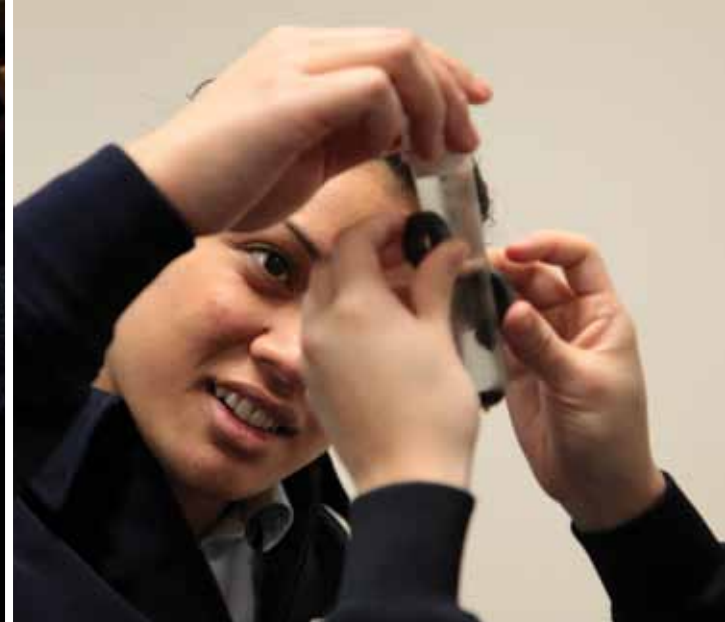
National Archives



National Archives



Museum of Flight



Clockwise from top left:

Teachers have some fun with a simulated space-based "glove box" at the Circus-themed Educator Open House staged in the Charles Simonyi Space Gallery on February 16. Museum Education Department Volunteer Sandra Snyder (right) directs the activity. • Edwina Tinatali and a teammate investigate the properties of heavy metals during a WomenFly! workshop in March. Over 100 young women participated in the day-long program, which offered opportunities to meet and learn from dozens of women aerospace professionals at the event. • Museum Educator and NASA Solar System Ambassador Ron Hobbs was one of the experts interviewed for a new episode on the Travel Channel's "Mysteries at the Museum" TV show (seen here in the shadowy Personal Courage Wing basement). Hobbs described an incident that occurred in the Destiny module, which was attached to the International Space Station. The Museum's Destiny mock-up was also photographed for the story, which will air in the summer. This was the fourth story "Mysteries" has produced at the Museum. • Retired US Navy Vice Admiral Gerald L. Hoewing, currently the President and CEO of the Naval Aviation Museum Foundation in Pensacola, Florida, visited the Museum on March 12. Chief Curator Dan Hagedorn (right) gave him a tour of the Library and Archives. • Teammates investigate the world of robotics during one of many workshops during the annual WomenFly! event in March. Over 100 young women participated in the day-long program, which offered opportunities to meet and learn from dozens of women aerospace professionals at the event.

Photos by The Museum of Flight



May

FLIGHT PLANS



Thursday, May 3 | 5 to 9 p.m.

Wells Fargo Free First Thursday Space Day

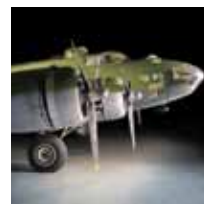
Once a month, the Museum stays open late—for free! Enjoy Museum exhibits and galleries from 5 to 9 p.m., courtesy of Wells Fargo. The Museum celebrates Space Day. The Museum's education department will present a variety of fun, space-related activities.



Saturday, May 5 | 2 p.m.
William M. Allen Theater

"Flying the Friendly Skies of Saturn's Largest Moon"

Dr. Jason W. Barnes is part of a team that is developing a NASA proposal to fly a robotic airplane on Saturn's large moon Titan with a mission called Aerial Vehicle for In-situ and Airborne Titan Reconnaissance (AVIATR).



Saturday-Sunday, May 19-20 | 8:30 a.m. to 5 p.m.

"Boeing B-17 Ground School"

Museum B-17 experts and pilots will conduct a 2-day course in the history, design, construction, operation and performance of the Boeing B-17 bomber. Registration is limited, fee is \$750.



Thursday, May 24 through Monday, May 28

Aluminum Overcast: The EAA B-17 Bomber Tours and Rides

For several days in May, the Museum will be the proud host of the Experimental Aircraft Association's popular B-17, Aluminum Overcast. Museum visitors can tour, or even fly aboard this historic aircraft. For costs, reservations and more information, please call the EAA at 1-800-359-6217 or visit www.b17.org.



Saturday, May 26 | 9 a.m. to 3 p.m.

Cascade War Birds Fly-In

Visitors can view a wide variety of beautifully restored vintage military aircraft representing several nations' armed forces from World War II through the Vietnam conflict. Operating under the motto "keep 'em flying," the Cascade Warbirds work to preserve history by maintaining important military aircraft.



Saturday, May 26 | 11 a.m.
T.A. Wilson Great Gallery

Opening Ceremony for Bell UH-1H "Huey" Helicopter Exhibit

Following a lengthy restoration, the Museum's Vietnam veteran Bell Huey helicopter takes a place of honor in the Great Gallery. This new, permanent exhibit will be officially opened during a brief ceremony near the exhibit.



Sunday, May 27 | 1:30 to 3:30 p.m.

Memorial Day Weekend Programs

Memorial Day Weekend activities continue with a concert directed by the renowned musician and orchestra leader, Fred Radke, followed by a lecture and autograph session with author and Medal of Honor recipient retired U.S. Army Maj. Gen. Patrick Brady.



Monday, May 28 | Noon

Memorial Day Programs

The Museum of Flight honors military service with patriotic music and ceremonies on Memorial Day, May 28. Veterans and active U.S. Military personnel receive free admission to the Museum with identification.

Calendar subject to change.
Visit museumofflight.org for updates.
9404 E Marginal Way S. | Seattle, WA 98108
206.764.5720

THE MUSEUM OF FLIGHT

THE MUSEUM OF FLIGHT

Huey



The Museum of Flight



The Museum of Flight



The Museum of Flight



The Museum of Flight

Often referred to as “second generation” Huey’s, the UH-1D and UH-1H series started arriving in Vietnam in 1965. Bigger and more powerful than their predecessors, the advent of the definitive combat versions, like the Museum’s veteran aircraft, set the legend in motion that led to the Huey becoming the best-known helicopter series of all time. The United States Army alone procured not less than 9,440 UH-1 variants between 1958 and 1980. Originally designated “HU-1” it didn’t take GI’s long to derive “Huey” from that formal moniker.

FLIGHT PLANS



Thursday, June 7 | 5 to 9 p.m.
Wells Fargo Free First Thursday
 Once a month, the Museum stays open late—for free! Enjoy Museum exhibits and galleries from 5 to 9 p.m., courtesy of Wells Fargo. Explore the science of climate change through activities and presentations for the entire family.



Saturday, June 9 | 2 p.m.
William M. Allen Theater
The first female Marine Corps aviator: Sarah Deal Burrow
 Sarah Deal Burrow, the first woman to fly as a U.S. Marine Corps aviator, will talk about the centennial of Marine Corps aviation, her place in this history, and her personal story as a military pilot and a mother.



Sunday, June 17 | 10 a.m. to 5 p.m.
William M. Allen Theater
Father's Day Celebration
 Free admission for all dads. Family activities throughout the Museum.



Sunday, June 17 | 11 a.m. and 2 p.m.
Voyage to Mars: Space Travel for Families
 Be an astronaut for a day! In this mission to Mars, your group is traveling to the Red Planet to replace a crew of astronauts who have been living there for the past two years.
 Cost (Including museum admission): Member: \$7 youth (under 18); \$12 adult
 Non-member: \$10 youth (under 18); \$15 adult
 Audience: Ages 10 and up. Youth under 16 years old must be accompanied by adult participant. One adult minimum per 5 youth.
Pre-registration is required – 206.764.1384. Pre-register by June 8.



Friday, June 22 | 10 a.m. to 1 p.m.
East Parking Lot
Fire Department Day
 The King County Fire & Life Safety Association is hosting the Annual King County Fire Department Day at the Museum. On this day, kids of all ages can view fire equipment on display and meet the men and women who serve them.



Friday, June 22 through Sunday, June 24
10 a.m. to 5 p.m.
Wings of Freedom World War II Bomber Tour
 The Collings Foundation's Wings of Freedom Tour lands at Boeing Field, providing Museum visitors the unique chance to experience both of the American heavy bombers that helped win World War II. Flights and ground tours are available on the Boeing B-17G Flying Fortress and the Consolidated B-24J Liberator. Flight training is offered in a P-51C Mustang.
For flight reservations, call 800.568.8924 or visit www.collingsfoundation.org.

Calendar subject to change.
 Visit museumofflight.org for updates.
 9404 E Marginal Way S. | Seattle, WA 98108
 206.764.5720

THE MUSEUM OF FLIGHT

WEEKEND FAMILY WORKSHOPS

Sponsored by Bank of America

Every Saturday and Sunday at 11 a.m. and 1 p.m.

Explore the exciting world of flight in fun, hands-on workshops offered every Saturday and Sunday! Family workshops are free with Museum admission and open to all ages (kids six and under should come with an adult helper). When you arrive at the Museum, just sign up to participate at the workshop location. Groups with 10 or more children, please call ahead to find out whether we will be able to accommodate your group. Contact the Interpretive Programs Coordinator at 206.768.7187.



Apollo Program: Splashdown!
MAY 5, 6, 12, 13, 19, 20, 26, 27

Be a part of an Apollo astronaut recovery mission. Make your own space capsule then reenact a re-entry and splashdown!



STS Space Shuttle Service!
JUNE 2, 3, 9, 10, 16, 23, 24, 30, JULY 1

What flying machine launches like a rocket, flies like a space ship and lands like an airplane? That's right - a Space Shuttle! Learn about the stages of a shuttle mission. Then make your own Space Shuttle model!



Father's Day!
SUNDAY JUNE 17
11A.M.-2PM

Come to The Museum of Flight and celebrate the dads in your life!

TIP-TO-TAIL TOURS



Apollo 10 Mission

Sunday, May 20 | 11 a.m. and 2 p.m.
 Space Exhibit



F-4C Phantom II & the Russian MIG 21PFM

Sunday, June 17 | 11 a.m. and 2 p.m.
 T.A. Wilson Great Gallery

Aviation Jewelry: Hidden Treasures from the Archives

by Kathrine Browne

If there is one thing I have learned in my years of working at The Museum of Flight, it is that artifacts always have a story to tell. There is always a person, event, or tale to complement everything the museum acquires. This is no different for something as large as an aircraft or something as small as an aircraft model. The stories, in many cases, are just as important as the object itself, and give meaning to what we do here on a daily basis.

When a fellow staff member put forth the idea of organizing a small exhibit of some of the many pieces of jewelry we have in the collection, I thought it would be a perfect time to also tell the stories of some of our most cherished pieces. It was important for us to choose items from the collection that had a great story and in the process, share the care and devotion to service that many of these pieces represent.

Many people may not have heard the terms “sweetheart wing” or “sweetheart bracelet,” but anyone who wears the jewelry knows that it represents love,



Royal Air Force "sweetheart wings" circa World War I

loyalty, and in many cases an absent serviceman. The phenomenon of the sweetheart wing began during WWI, but really became popular during WWII. The wings we chose to display are all from the WWI and WWII eras. One pair is a stand-in for an engagement ring, while another is a more modest version that might be worn proudly by a mother or sister. A sweetheart bracelet and a pair

of sweetheart earrings are also shown, and both were made from small pins that were refashioned into something more feminine.

In July of 2011, the museum helped honor Henry S. McMurray as he was publicly recognized as a Chevalier of the Legion of Honor by the Honorary



Claire Egtvedt, President and Chairman of the Board at Boeing from 1933 to 1966, commissioned this bracelet for his wife, Evelyn, as a way to display his collection of 25-year to 50-year Boeing service pins



Pilot's hat badge for Transcontinental & Western Air, Inc., circa 1930s

Consul of France. Mr. McMurray was a B-17 pilot during WWII with the 305th Bombardment Group, Eighth Air Force. He flew bombing missions over France and Germany, resulting in 25 missions over eight months. The Order is the highest decoration in France and the medal presented to him was then donated to the museum by himself and his family. We show the medal as a symbol of his dedication to his country. If you were to just view the medal in its case, you might think nothing of it, but there is always a story to tell.



A TWA "One Million Miles" pin awarded to TWA flight attendant Angela J. Gardner when she reached that milestone mileage in her flight career with the airline. Gardner was a TWA flight attendant from 1962 to 1987

Overall, the largest groups of items being displayed are service awards and pins belonging to Flight Attendants and Pilots. Many airlines reward their employees with small tokens for length of service and retirement. Some of the items we have chosen to display include several pilot hat badges from various airlines, flight attendant wings with added stones to denote length of service, and some of our more unusual flight attendant badges, such as the “Dove” badge

from Braniff, originally designed by Alexander Girard and the “1,000,000 Miles” pin donated by Angela J. and David Gardner. The pin may be noticeably small, but Ms. Gardner had to fly 1,000,000 miles as a Flight Attendant for TWA to receive it.

While some items on the surface are ordinary, we hope that you will see them as we see them, as more than just small tokens, but special pieces that represent a time when the new industry of aviation held a very special place in society. They are reminders of a new era of flying and the advancement of technology. They remind us of the people who worked hard to create something innovative, to defend their country, or to serve whole heartedly. With this small display, we hope you will understand just how much we appreciate their efforts and work daily to make sure their stories are told.

Kathrine Browne is the Assistant Registrar for The Museum of Flight.

THE MUSEUM OF FLIGHT



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This sterling-silver men's ring features a Boeing 314 aircraft and is possibly a commissioned piece from a member of the engineering or design team

Museum News



2012 PATHFINDER AWARD WINNERS ANNOUNCED; MARK YOUR CALENDARS FOR OCT. 20

Each year, The Museum of Flight Pathfinder Awards recognize individuals with ties to the Pacific Northwest who have made significant contributions to the development of the aerospace industry. This year, three honorees will be celebrated at the October 20 award presentation.

Bill Ayer, former chairman of Alaska Air Group, will be recognized for his leadership at Alaska Airlines and Horizon Air and for his passionate support of Aviation High School; Barbara Morgan, teacher

and astronaut, will be honored for her vision and leadership in promoting STEM education; and George Mueller, former Associate Administrator of the NASA Office of Manned Space Flight and the “Father of the Space Shuttle.”

For more information about this year’s awards program or to purchase tickets for this historic event, please contact Alison Bailey at 206.764.5715 or email abailey@museumofflight.org.



MUSEUM WELCOMES NEW LIBRARIAN

The Museum is proud to announce that Meredith Lowe is our new Head Librarian, having assumed the post on April 16. Lowe is originally from McMinnville, Ore.. There she attended Linfield College and received a BA in History. During college she interned in the Collections Department at McMinnville’s Evergreen Aviation Museum and contributed in the creation of a documentary about Howard Hughes. After college graduation she pursued her love of travel and aviation as a flight attendant for Horizon Air. While flying she worked on her Master of Library and Information Science from the University of Washington, and worked as a librarian for a local technical college before hearing of the position of Head Librarian at The Museum of Flight. Lowe sums up her next step with “I jumped at the once in a lifetime opportunity to combine my love of libraries, museums and aviation.”



TUSKEGEE AIRMEN CELEBRATE “RED TAILS”

On Dec. 6, 2011, The Sam Bruce Chapter of the Tuskegee Airmen and friends of the Museum, celebrated the release of the George Lucas film “Red Tails” with a special screening of the movie at the Tuskegee Airmen Aviation Youth Flight Camp at the Naval Air Station in Oak Harbor, Washington.

In attendance were “Red Tails” producer Rick McCallum, actors Elijah Kelley and Marcus Paulk, and 400 young aspiring aviators from across the state, as well as Tuskegee Airmen Col. Ed Drummond and Capt. George Hickman, Chapter President Tommie Lamb, and NAS Base Commander Capt. Jay Johnston.

For more information about Tuskegee Airmen events in the Pacific Northwest go to www.tuskegeearmen.org.

MUSEUM CELEBRATES SEATTLE SCIENCE FESTIVAL, JUNE 2 THROUGH 8

As part of the Seattle Science Festival celebrating the 50th anniversary of the Seattle World’s Fair, The Museum of Flight will make science soar. The Seattle Science Festival is the region’s first large-scale community-wide celebration of science and technology that will bring hands-on exhibits, shows, demonstrations and performances to venues throughout the Pacific Northwest. All events will provide experiences that educate, engage and inspire an interest in science and technology and stimulate imagination and innovation.

In addition to performing educational stage shows at the Seattle Center on June 2, the Museum will host its own Science Festival Week, June 3 through June 8, with its special Science that Soars! program series. Programs feature interactive activities, planetarium programs, and special tours. All programs/activities run between 11 a.m. to 2 p.m.

June 3 – EVA: Walking in Space

Learn what it takes to go for a walk in space, design a space suit, and enter our planetarium for your own 21-minute trip to outer space!

June 4 – Full of Hot Air: True Tales of the Montgolfiers

Hear the amazing history of the founding fathers of the Hot Air Balloon and learn the science behind their aircraft.

June 5 – The Relaxed Astronomy of John Couch Adams

Explore the stars in our planetarium and go on a tranquil trip through the astronomical world of this low-key, yet important astronomer.

June 7 – 6/7 777

Learn what makes the Boeing 777 unique, discover the role of the HUMOD in the design process, and take a tip-to-tail tour of our 777 design exhibit.

June 7 – Seattle Middle Schools Science Fair

During the evening of June 7, the Museum will host the Seattle Middle Schools Science Fair. During this Science Festival signature event, visitors can view the projects in The Museum of Flight’s main gallery and talk with students about their projects.

June 8 – Cassini Royale

Commemorate the birth of Giovanni Domenico Cassini and learn about this famed astronomer, mathematician and engineer. Throughout the day, festivities will include astronomical

activities and games, presentations about NASA’s Cassini mission, and planetarium shows!

June 8 – Regional Star Party

Visit museumofflight.org or seattlesciencefestival.org for Star Party locations.

Also, as part of the Science Luminaries Series of multidisciplinary evening events featuring the “rock stars” of science, technology, and engineering, the Museum will host the *Luminaries of Space* on June 22. This event will feature astronauts Dr. Bonnie Dunbar and Dr. George ‘Pinky’ Nelson as well as Mark Sirangelo of Sierra Nevada Corporation.

Event and ticket information at seattlesciencefestival.org.

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OUR ANNUAL VISITS BY VETERANS WITH ROUND ENGINES

by Ted Huetter

Every year it's the same drill – come springtime and summer the Museum hosts visits by some touring B-17s and the odd B-24 or other World War II bomber or fighter. Usually it's the same planes with the same, familiar droning of mighty Wright Cyclones, Allison's and Merlins. Month after month after month. Ho hum. Turn the station. Or rather, don't turn that dial!

Are not we lucky? There are only a handful of these remarkable, historic aircraft still flying. The arrival of any one of them in most cities is a rare event. Seattle – and the Museum of Flight - is one of only a few places in the world that hosts three different Flying Fortresses in a single year. Nowhere else can one experience the sights and sounds of these piston-packin' mommas complimented by the Museum's historic, Boeing Field location. Indeed, we are lucky. During Memorial Day Weekend we are home to the Experimental Aircraft Association's B-17 Aluminum Overcast; on the third weekend in June we have the Collings

Foundation's trio of B-17G Nine O Nine, B-24J Witchcraft, and TP-51C Betty Jane; and the Commemorative Air Force's B-17G Sentimental Journey lands in July. Rides and ground tours will be available in each plane.

The EAA has been flying Aluminum Overcast on national, "Salute to the Veterans" tour since 1994. The Collings Foundation "Wings of Freedom" tours began 23 years ago, and the Commemorative Air Force's Sentimental Journey was the first B-17 used to offer rides to the public, has been touring the United States since the mid-1970s.

For decades following World War II most of the flyable B-17s were work horses for the military, then in public service performing unglamorous jobs like hauling cargo and dropping fire retardant on forest fires. With each assignment the airplanes lost more of their military identity. Only relatively recently did museums and other organizations begin to restore these flyable planes to martial

specifications. Since then, flight crews of "the greatest generation" have been able to experience the bombers in ways unavailable to them since the War; for their families and others, the planes have provided a visceral connection to the history of the mid-20th Century, and to the brave people who maintained, fought and died in the planes.

The warbirds are flown around the country to honor our World War II veterans. Hunter Cheney of the Collings Foundation says "touring through and flying in these amazing, restored aircraft is – by far – one of the most effective means to engage people in World War II history." The EAA, with its mission to promote flying, also hopes that their tour broadens interest in aviation.

There are only a dozen or so B-17s still flying (and the Collings' B-24 is the only restored, flying B-24J). Keeping them airworthy is more expensive every year. B-17s burn about 188 gallons of fuel per hour of flight. The EAA

expects Aluminum Overcast to use 57,000 gallons of gas this year. Each flying group estimates that with gas, maintenance and other direct expenses the planes cost about \$4,000/hr to fly. With the exception of some mechanics, virtually all of the flight crew members are unpaid volunteers. The EAA crews receive small stipends for the crews while traveling. Nobody is out to make money with the tours; any profits are put back into the organization's aircraft and operations.

Note: If you have the appropriate flying or mechanical skills and can volunteer your time, contact one of the organizations to see if you can join the crew.



The late Bill Holloman, former Tuskegee Airman, was honored with a complimentary flight with local media on the EAA's B-17, "Aluminum Overcast," just weeks before he passed away in 2010.

Seattle's history in aviation makes it a favorite stop for the Flying Fortress tours. For some crew members the layover is more personal. Mike Walton will be flying Sentimental Journey during its July visit to Boeing Field, where he earned his commercial and instrument ratings in 1965 at Forest Taylor's Academy of Flying. Sentimental Journey pilots Rick Fernald and Neil Morrison live in Yelm and Port Townsend, Wash. Three different B-17s flying here three months in a row. Support the tour groups and book a flight. You know why.

» For more information or to book a flight reservation: Experimental Aircraft Association's B-17 *Aluminum Overcast*, call 800-359-6217 or visit www.b17.org Collings Foundation's B-17 *Nine O Nine* or other aircraft, call 800-568-8924 or visit www.collingsfoundation.org Commemorative Air Force Arizona Wing Museum's B-17 *Sentimental Journey*, call 602-448-9415 or visit www.azcaf.org

Ted Huetter is the Public Relations and Promotions Manager at The Museum of Flight.



The Collings Foundation's B-17G, "Nine O Nine."



ARMED FORCES DAY

Saturday, May 19
10 a.m. to 3 p.m.

10 a.m.-3 p.m.
Aircraft Viewing and Tours in Museum Parking Lot: Chinook, Blackhawk, Dolphin and Kiowa Helicopters; RB-S Harbor Patrol Boat; Stryker Vehicle

11-11:45 a.m.
Public Presentation:
Rear Admiral Peter A. Gumataotao
Commander USS *Nimitz*
Strike Group

Noon-12:40 p.m.
Flag Raising with the Five Branches:
Army, Navy, Air Force, Marines,
Coast Guard

This program is presented through a partnership with the Air Force Association, Navy League of the United States and Association of the United States Army.

THE
MUSEUM
OF FLIGHT

These BEARS Don't Hibernate

by Ted Huetter



"The Rays," Ray Fletcher and Ray McCaw, carrying a part to install on one of the 747 engine nacelles. The BEARS volunteered to help restore the prototype's cowlings and nacelles in 2010.

For years, the Boeing Employees Amateur Radio Society (BEARS) was based in some trailers at Boeing's old Minute Man missile mock-up site in Kent. The cargo container-sized trailers were used by the 120 members as a radio lab, meeting place, workshop and radio station for amateur radio (ham radio) operations. Then in 2009 the Boeing company informed the BEARS that they would need to find a new den; the company was not going to provide property for its employee clubs anymore. At about the same time, the Museum was expressing interest in expanding the technical capabilities of its educational outreach programs to enable video and ham radio communication with astronauts in space.

Word spread to Museum Director of Facilities, Clark Miller. Miller contacted Ray Fletcher, a retired Boeing electrical design manager who has been a BEAR since 1992. Fletcher contacted fellow BEAR Ray McCaw, a retired licensed electrician with a background in facilities design. Fletcher and McCaw—known collectively as “the Rays”—coordinated a

hosting agreement between the Museum and the BEARS. The agreement became official with a signing in fall 2009: The Museum provided space for the club's trailers, antennae and what-nots on the undeveloped lot adjacent to the north side of Airpark; in return, the BEARS were to establish an emergency radio and satellite communications center for the Museum, provide the technical expertise to operate them and perform other odds n' ends jobs if requested. “We didn't know if it was a good fit,” says McCaw, “so we tried a few jobs, and guess what? They liked us!” Thanks largely to the Rays, the Museum has struck gold.

The Rays bring well over 60 years of valuable Boeing know-how to the Museum. As a facilities designer, McCaw's experience includes being the prime electrical power designer for the Boeing Space Center in Kent beginning in the mid-1960s. Some of the projects there were the lunar rover, X-20 Dyna-Soar space plane, Boeing's huge vacuum chamber (for testing space vehicles and systems in an environment simulating the vacuum and temperatures of space), and the Apollo Lunar Excursion

Module and Command Module docking simulator (which used crane-like structures to provide a realistic, full-motion spaceflight experience for practicing docking the two Apollo modules). After he retired from Boeing, McCaw worked for Washington state, managing maintenance operations of the 520 bridge over Lake Washington.

The other Ray, Ray Fletcher, was with Boeing for 33 years, much of time in the management of electrical design (20 years with Boeing Black Box programs that he still can't discuss in detail). Fletcher was involved in the Sea Launch program, AWACS, Short Range Attack Missile, Air-Launch Cruise Missile, Inertial Upper-Stage program, and (get this) was one of the first people to work on the space shuttle Full Fuselage Trainer—installing a simulator for training astronauts to use the cargo bay manipulating crane.

Needless to say that obliging the original requirements of the hosting agreement were missions easily accomplished by the Rays and six other BEARS, who all have become official Museum Volunteers. They have continued to take on an assortment of tasks such as helping the IT Department with computer upgrades, and parts salvaging; video editing for Technical Services; installing security cameras for - guess who - the Security Department; and myriad jobs for the Facilities Department, including internal and external electrical repairs, designing power systems to the Constellation, B-17 and B-29, with upcoming systems to the 727 and 747.

The BEARS – including Chuck McGregor, Stu Tracy, Martin Wade, Larry Shirk and Paul Fieder - have volunteered thousands of hours to the Museum during the past couple years. Honorary BEAR Wayne Whitcomb's electrical design and carpentry skills have been invaluable. Rich Hand volunteered as a video editor and now is an employee in the Technical Services Department. But the two leads, Fletcher and McCaw, resplendent in their matching yellow jackets, are truly Rays of sunshine throughout the Museum.

IN MEMORIAM

The Museum of Flight offers its sincere condolences to the families and friends of departed Museum volunteers, members, and supporters:

<i>Juris K. Andreika</i>	<i>Andrew N. Hagen</i>	<i>Mary Ellen Rapp</i>
<i>Louis Bernstein</i>	<i>Donald G. Higgins</i>	<i>Gene Ray</i>
<i>Robert N. Bianco</i>	<i>Donald E. Hillman</i>	<i>Joseph E. Regan</i>
<i>Milton W. Bjorklund</i>	<i>James F. Hubbard</i>	<i>Edmund W. Rosendin</i>
<i>David M. Brockman</i>	<i>Richard M. Lunstrum</i>	<i>Paul Schneider</i>
<i>Mark W. Burns</i>	<i>James B. Morehead</i>	<i>Susan S. Schulz</i>
<i>Hugh T. Cole</i>	<i>John H. Newland</i>	<i>Gerhard Seidel</i>
<i>Arthur DiPietro</i>	<i>John T. Oglesb</i>	<i>Albert E. Seifert</i>
<i>Harry C. Eng</i>	<i>Daniel E. Parks</i>	<i>James M. Weir</i>
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<i>Leonard J. Faucher</i>	<i>Kenneth W. Porter</i>	
<i>Harold K. Forsen</i>	<i>Barbara A. Proehl</i>	

TRIBUTE GIFTS

Feb. 1, 2011 - Mar. 31, 2012

In Memory of James R. Anderson <i>Paula Clark Dennis M. and Paulette Cziske James Duffus Richard J. and Angeline F. Fontana Richard L. and Sylvia O. Hannula Edward S. and Jane E. Merlino Walter Mullikin Ted B. and Barbara H. Osborne Edward W. and Marna L. Pettigrew Mildred K. Sather John S. and Karol L. Satterthwaite</i>	In Memory of Orville W. McKee <i>Judy Berry Dennis C. and Nan Wheeler</i>	In Memory of Gerhard Seidel <i>Ralph and Marilyn Johnson Eric L. Roy and Julie Parisio Roy Keith Wiemann</i>
In Memory of Nemesio A. “Tony” Armstrong <i>Dorothy N. Armstrong</i>	In Memory of Marjory Munn <i>Robert and Paula R. Gibbs</i>	In Memory of Warren A. Skon <i>John “Mike” T. Wolf</i>
In Memory of Joseph A. Deichl <i>Edna Deichl Richard Deichl Robert Deichl Bruce Deichl Brian Deichl</i>	In Memory of Cecilia M. Nickel <i>Herman K. Nickel</i>	In Memory of Robert William Watson <i>Sandra and Patrick Brown</i>
In Memory of George C. Martin <i>Edith Martin Shreeve</i>	In Memory of John T. Oglesby, Jr. <i>Mark Oglesby</i>	In Memory of Michael Weinmann <i>Erik R. Kruse</i>
	In Memory of Daniel E. Parks <i>John W. Purvis and Nancy L. Wright</i>	In Memory of Roy T. Wise <i>Gloria Worland</i>
	In Memory of Richard W. Peterson <i>Mr. and Mrs. Phil Fredrickson Carolyn M. Hibler Howard G. and Elfriede A. LaPlante James L. and Gertrude M. Lingwood Kenneth R. and Jeanne Q. Lyon John O. and Sandra C. Oren Robert W. and Beryl Stinson</i>	In Honor of Glenn E. Gray's 70th birthday <i>Jere I. Thornton</i>

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