HANGARTALK

Newsletter of Chapter 84 of the Experimental Aircraft Association at Harvey Field in Snohomish, WA **February, 2007**

G O N E W E S T

HARLEY ELDON BEARD
(1924 – 2007)

Harley Eldon Beard, Air Force and Boeing Test Pilot, passed away at his home in Lake Stevens on January 3, 2007. The oldest son of Harley Orestus Beard and Katherine Mildred Diehl, he was born in Detroit, Michigan on February 2, 1924. He resided for many years in Bellevue and on Mercer Island.

He graduated from Dearborn High School in 1941, and enrolled at Wayne State University. He enlisted in the U. S. Army Air Corps in 1942. He earned his pilot wings and was commissioned as a Second Lieutenant on February 8, 1944. He served a WWII combat tour in Europe as a B-24 Liberator pilot with the 831st Bombardment Squadron (H) and was awarded the Distinguished Flying Cross, four Air Medals, and the Purple Heart. After the war, he was stationed abroad in Guam and Korea. He was a graduate of the Air Force Experimental Test Pilot School. In 1957, he joined the Boeing Company as an experimental test pilot. He served Boeing as a Test Pilot and Flight Crew Training Instructor around the world until his retirement in 1984. He flew developmental work on the Boeing B-52, KC-135, the 707 prototype, 707,727,737, 747, and 767. In retirement he continued his involvement in aviation and was building his own airplane at the time of his death.

Harley was a Fellow of the Society of Experimental Test Pilots, a member of the Quiet Birdmen, The Fifteenth Air Force Association and the Experimental Aircraft Association, serving as the President of EAA Chapter 84.

Harley married Berniece Sophia Menze on July 8, 1944, the couple divorcing in 1962. In 1970 he married Janet Veljer Wolf and remained married until her death in 2003.

He was preceded in death by his parents, his wives, a brother, Kenneth, and two great-grandchildren. He is survived by his brothers Ronald of Dunedin, Florida, and Lee of Ridgeville, Indiana, four children, Gary of Bellevue, Neal of Vancouver, Washington, Nikki of Mt. Angel, Oregon, and Scott of Indian Trails, North Carolina, nine grandchildren and one great-grandson.

Throughout his life, Harley was an avid hunter and fisherman. He loved music and archeology. He loved to cruise, crab and fish in the San Juan Islands.

A funeral service was held at 3:00 p.m. Sunday, January 14, 2007 at Pilgrim Lutheran Church, 10420 SE 11th St., Bellevue, WA. A graveside memorial service with military honors was held at 1:30 p.m., Tuesday, January 16, 2007 at Tahoma National Cemetery , 18600 240th St ., Kent , WA .

The family suggests remembrances to the Museum of Flight, 9404 E. Marginal Way S., Seattle, WA. 98108-4097 (www.museumofflight.org); (206)764-5720.

The following article appeared in the January 13th edition of the Seattle Post-Intelligencer, and was briefly edited for space considerations:

SEATTLE POST INTELLIGENCER

Saturday, January 13, 2007 (Re-printed with permission)

Harley Beard, 1924-2007: Veteran pilot a part of Boeing, aviation legacy

By LEVI PULKKINEN, P-I REPORTER

He'd risked his life flying for his country and for The Boeing Co., for aviation playboy Howard Hughes and for Libyan dictator Moammar Gadhafi. Well into his 82nd year, former test pilot Harley Beard had been working toward a final aerial milestone -- to build and fly a plane of his own. "He'd started on it in 1994," said Gary Beard, Harley's son. "When we asked, it was always going to be done April 1." But Beard's final flight in a plane of his own never got off the ground. He died suddenly at his Lake Stevens home January 3rd.

Beard spent 40 years piloting aircraft through the sky, first as an Army Air Corps flier, then as a commercial test pilot. He was part of the team that tested the Boeing widebody airplanes that helped make the company a world leader in aviation. Like so many pilots of his generation, Beard earned his wings with the Air Corps after enlisting in 1942. During World War II, the Detroit native piloted B-24 Liberator bombers on combat runs over Europe. In December 1944, Beard and his flight crew were forced to bail out over the Adriatic Sea. While Beard survived to be rescued by an Italian fishing boat, three other men on board were killed.

Brien Wygle met Beard at the U.S. Air Force test pilot school in 1953. Wygle would go on to serve as Boeing's vice president of flight operations. At the time both men were brash, young test pilots. Nearing the end of their training, Wygle and Beard arranged to meet at 15,000 feet over the Mojave Desert for a mock air battle. Wygle said he decided to cheat a little and climbed his jet to 20,000 feet, hoping to get the drop on Beard, but Beard was waiting for Wygle at an even higher altitude. "He came swooping down on me from out of the blue," Wygle said. "I always accused him of being a bigger cheat than me."

Beard remained in the military until 1957, when he went to work for Boeing. At the time, Boeing was developing what would become the first commercially successful jet airliner -- the 707. And Beard was tapped to be one of the test pilots for the aircraft. The plane had caught the attention of Howard Hughes, who owned Trans World Airlines at the time. Hughes wanted a chance to fly the plane, and Beard was sent along to chaperone the eccentric millionaire. Beard served as Wygle's co-pilot when they were called on to spend 10 days showing Hughes a prototype 707. Behind the stick of the 707, Wygle said, Hughes gave his test pilot passengers a rough ride. "He didn't take instruction very well," Wygle said. "And jet flying was different than what Howard was used to." Flying with Hughes proved to be a dangerous assignment. As Beard told the story, Hughes managed to shear off one of the jet's flaps during a particularly rough landing. Another time, "the Aviator" ran out of the cockpit because he suspected -- correctly -- that his wife was smoking cigarettes at the tail of the plane, said Rand Martin, a friend of Beard's, and fellow member of the Experimental Aircraft Association's Snohomish chapter.

In May 1980, Beard was serving a 30-day rotation in Libya for Boeing when he was called on to fly Gadhafi to the funeral of Yugoslavian strongman Josip Broz Tito.

By the time he retired four years later, Beard had test-flown eight different wide-body planes for the company. He'd rolled a 707, circled the globe in a 727 and taught dozens of flight crews around the world how to pilot Boeing planes. Rand Martin, a fellow member of EAA Chapter 84 said Beard often shared stories of his exploits with other pilots, helping many connect with the wilder days of aviation. "Harley is part of an aviation legacy, and it's going to go away."

Gary Beard said his father took pride in the life he'd lived, and had hoped to finish his own aircraft. "He was certainly looking forward to flying that airplane".

From the President's Corner

As you can see from the front page, we are trying to honor our late good friend, Harley Beard, in this edition of our Newsletter. We hope to have a picture montage of Harley's life to present at our February meeting. This will give those of us who did not know Harley well a chance to experience what he was like and how he got that way.

I would like to propose that we further honor Harley Beard's passing by placing a plaque honoring him on The EAA Memorial Wall at Oshkosh. As you know, the cost of a Memorial Plaque is $350, so we are setting up a Fund to collect the necessary funds to purchase the Memorial. We will be asking the Members for donations in the near future, so please consider making such a donation to honor Harley, who has meant so much to the success of our Chapter and who made each of our lives a little better for having known him.

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Technical Article

Do not use fuel containing ethanol in two-cycle engines

There are two major effects from using fuel that contains ethanol. The first is water solubility. Ethanol is a polar solvent so it absorbs water. This is a big concern for airplanes because when the ethanol absorbs water from the bottom of a tank, it also picks up all of the dirt that was in the water. This leads to problems in the fuel system and can result in a pilot getting some dead stick landing practice, which may not be at a clear landing location.

The other major concern with ethanol is that it contains oxygen. This means that the stoichiometric air fuel ratio (the ideal for complete fuel burn) will be lower than for a straight hydrocarbon fuel. Therefore, a fuel containing ethanol will effectively lean out the air fuel mixture. Most modern auto engines have oxygen sensors, which can richen the mixture when an ethanol blend fuel is used. Additionally, almost all auto engines are water cooled and operate at fairly low power settings most of the time.

In most two-stroke engines, the metering is fixed, so when an ethanol blend is used, the engine will run leaner unless the carburetor is re-jetted. Almost all carbureted two-stroke engines are jetted to run on the rich side of stiochiometric. This is needed for power and proper engine cooling. Therefore, if you use an ethanol-blended fuel, it can lean out the mixture, which in turn will raise the temperatures in the cylinders, which can lead to a scuffed piston and possible engine failure.

My primary concern is not for the mechanical well being of your leaf blower, but for the many ultralight aircraft that use two-cycle engines. Almost all of them are designed to run on auto fuels and most of the time they are operated at or near full power. Since they are usually air-cooled, they tend to run near the maximum allowable piston temperatures. If an ethanol-containing fuel is used in one of these applications, it would be necessary to re-jet or adjust the carburetor for the lower energy containing fuel. Failure to do so could lead you back to the dead stick landing exercise - and we all know how some of those turn out.

It is also important to remember that in many areas of the country all auto fuels contain ethanol - and the fuels may not be labeled as containing ethanol. If this doesn't worry you enough, there is a bill in Congress that would require all auto fuels to be blended with at least 10% ethanol in a few years.

EAA Chapter 84 Meeting Minutes Tuesday, January 9, 2007

Submitted by Harold Shoemaker, Chapter Secretary

President Rand Martin, called the meeting to order at 7:04 pm. 26 members present.

Visitors: None present.

Presidents Report: Rand made the announcement to the members that Harley Beard had passed away. Several members, including Rand Martin, Rex Smith, Jim Davison, Tom Mahon, Chum Shoemaker, Doug Medema, and Dan Thomas talked about Harley, and some of their thoughts and comments about their interaction with Harley, that were quite entertaining. Harley was well thought of, and will be missed by all who knew him.

Treasurer Report: Nick Gentry reported that we have $353.57 in petty cash, $123.38 in savings.

Secretary Report: There wasn't a meeting in December; however, the Christmas Dinner events were published in the news letter.

New Business: Rand Martin stated that the chapter was looking at the New Year with high expectations. Nick Gentry reported that he had sent in the annual dues to the EAA.

Project Visit: The project visit will be at Steve Mauler's hangar. It is located on the East side of the small runway at Paine Field, 10:00 AM January 13, 2007. Tom Williams has offered to have the February project visit.

Safety Report: Rex Smith talked about fueling from plastic gas containers and the danger of static electricity and the chance of a fire.

Meeting Program: No program tonight. Rand reported that the guest speaker that was scheduled for tonight's meeting was rescheduled to April because of bad weather

Meeting adjourned at 8:30 pm.

EAA Membership Benefit Update (From EAA HQ)

Introducing a new EAA Member Benefit launched this year-The EAA Finance Program (administered by AirFleet Capital, Inc.) The EAA Finance Program was unveiled at Sun-N-Fun and EAA AirVenture Oshkosh during 2006. AirFleet Capital staff was on hand to meet and greet pilots in EAA's Member Village at both events, answering questions and providing information to members. The staff from AirFleet Capital also attended the 2006 NBAA convention in Orlando, Florida, assisting EAA in reaching out to the business aircraft market.

The EAA Finance Program provides a wide array of programs to meet the needs of our members. It's currently able to finance experimental aircraft (kit & airworthy), light sport aircraft, piston, helicopter, and jet aircraft. With their extensive knowledge, passion, and experience in general aviation, EAA and AirFleet Capital have created a program that offers a variety of options that are constantly changing to meet the needs of members. This was evidenced by a new program launched by the EAA Finance Program that allows for financing of progress payments for the new very light jets (VLJ's) which have recently been certified. There are many pilots looking to purchase an aircraft in this new class, but who have to make payments as the aircraft progresses in its manufacturing process. The EAA Finance Program is able to help those who are in a position to order their VLJ with the progress payments.

The EAA Finance Program has also been aggressively supporting the special light-sport aircraft (S-LSA) market. As this new class has developed, EAA and AirFleet Capital have been right there, rolling up their sleeves, obtaining information and research on the various aircraft, and producing financing options for these aircraft to fit the needs of the sport pilot. As the light-sport aircraft industry continues to develop and change the face of recreational aviation, the EAA Finance Program will continue to review the aircraft entering the market in order to support those aircraft that have been accepted and certified by the FAA. This is all part of EAA's mission to make aviation more attainable and affordable to its current and future members.

To obtain more information on the programs offered by the EAA Finance Program, give them a call at 866-808-6040 and a representative will be happy to speak with you and answer any questions you may have.

SAFETY ARTICLE

Rex Smith, Chapter 84 Safety Counselor

Icing, Not only on Roads!!
The last few weeks have given us a taste of ice and snow and a chance to handle the adverse conditions on the roads and freeways. Aircraft that were flying IFR in western Washington were surely in, or passing through, layers of structural ice and hopefully prepared to handle these nasty flying conditions.

Most of us, with our experimental and other light aircraft, do not fly IFR but we still have to be aware as winter ice can be bad and summer ice can sneak up on an unsuspecting pilot. A discussion of the types of ice and forecasting methods is beyond this article. I just want to remind pilots that in winter the freezing level is closer to the ground leaving a smaller area of airspace free of ice. Also, frontal activity is more frequent in the winter. For structural ice to occur, two elements are needed. There must be moisture in the form of rain, wet snow, or clouds and the outside air temperature must be at or below freezing. It is not hard to be VFR and be in rain or snow, although it might be marginal. Temperatures between Zero and -20 degrees Celsius cause the most icing problems, but statistically the worst icing occurs between 0 and -10 degrees C. Also, about 85 percent of all icing occurs in the vicinity of frontal zones.

Avoiding ice is the best solution and that begins with a good weather briefing. This is the most important aspect of dealing with ice. Areas of icing can be predicted with a high degree of accuracy and if you have this information you can hopefully avoid these areas. Icing forecasts are available from area forecasts, AIRMETS, SIGMETS, and PIREPS. Checking the winds aloft forecast provides the temperatures at altitude and remember, the worst ice is between 0 and -10 degrees C. If freezing rain or drizzle is forecast or reported along the route, postponing the flight should be seriously considered. FAR 91.527 prohibits flying into known icing conditions unless the aircraft has “ice protection provisions”.

What do you do if you begin picking up ice? When flying a small airplane VFR the choices are limited. You can climb but this would most likely put you into the clouds and IFR. Also, a small airplane with a load of ice might not have the power to climb to an altitude that is ice free. Ice weighs approximately 50 pounds per cubic foot. Weight as well as reduced lift from disruption of smooth airflow across the airfoils will affect performance, especially the stall speed. Descending is another possibility but be sure that you will be descending into warmer air. If the ice does not come off, you are now closer to the ground and aircraft performance may prevent climbing back to a safer altitude.

If you are confident in the weather forecast and can divert from the icing area or land at a nearby ice free airport, go for it.
If you came from ice free conditions and make a quick decision to turn around, this may be the best choice for a small VFR airplane. Remember that the ice accumulation may be doubled by the time you reverse course and fly back to where the ice began.

There are many sources of information on airframe icing and some review is time well spent. Remember, if you begin to get airframe ice don’t just sit there and do nothing while time passes and more ice accumulates.

DO SOMETHING TO GET OUT OF THE ICE!!

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ANNUAL CHAPTER DUES

It’s that time of year, again. Your Chapter 84 Annual Dues need to be paid as soon as possible. See Nick Gentry to pay the low, low fee of only $20.00 at the February Meeting. There are already 14 members paid.

Welcome to new member Donald J. Veurink. Don is building a Chinook+2.

c/o Nick Gentry
12124 1st Avenue SE
Everett, WA 98208

Our thanks to the Folks at SNOHOMISH FLYING SERVICE HARVEY FIELD since 1945 SNOHOMISH, WA. *for the use of the Hangar*

**** * * See you at the Meeting on Tuesday, February 13th* * ****

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