Flyboy News

http://39.eaachapter.org

Volume 23, Issue 3
March 2020

Top 10 Greatest Pilots Throughout History

Selected buy All Care Ambulance

#9: Florence 'Pancho' Barnes
Country: United States of America
Listed: 1901-1975

Florence 'Pancho' Barnes established her place in aviation history not only as a skilled aviator, but also she was the first woman to fly as a movie stunt pilot. In 1928, she bought a Travelair biplane for her first aircraft and participated in flight instruction for only six hours before soloing. She was adventurous with her flying maneuvers, but became an expert pilot along the way. She flew in the Women's Air Derby in 1929, which was a cross-country competition that began in Santa Monica, California and ended at Cleveland Ohio. She led the pack, but had to withdrawal after a collision with a truck on the runway. The next year, she competed once again and set a new women's world speed record of 196.19 mph which knocked Amelia Earhart out of the top spot. Later in her life, she performed aeronautical stunts in Hell's Angels, a Howard Hughes movie, to become the first female stunt pilot for the motion picture industry.

Ed. Note: More to follow in future issues. Do you have any nominations you want to make?

Thanks to Jim Hayward

Since Milo and Betty moved to their new digs, they no longer have access to the internet. **Jim Hayward** graciously agreed to take over the responsibility of printing and mailing the Flyboy News to those members who don't have the internet. Many thanks to Jim.

Take a run out Beaver from the desert in AZ back to Canada and rebuilding it to new. What else do you have to do? Click here.

Submitted by Al Neal

Next Meeting:
Tuesday, April 14

Meeting Cancelled

If anyone has ideas for programs, please contact Josh jscott_09@iCloud.com or Arie ariemichael1@aol.com

Upcoming Events

AOPA Fly-In
Postponed until 2021Casper WY

Let Freedom Fly " Air Show
July 4th Pierre Regional Airport
Royal Canadian Air Force Snowbirds (and others) will be performing

Ellsworth AFB Air Show
July 25 & 26
The Thunderbirds will be performing.

(more details will follow)

Officers

President	Josh Scott
Vice President	Arie LaCroix
Secretary	Gary Schroeder
Treasurer	Dan Benkert

Volunteers

Newsletter	Molly Benkert
Web Manager	Molly Benkert
Young Eagles	Darrel Sauder
Safety Officer	Jerry Densmore
Tech Advisor	Jerry Densmore

President's Corner

By Josh Scott

As I sit here and try to wrap my brain around how the world has changed over the last month, I can't help but think about how each of us is having to adapt to the situation! For some, you are considered essential and must continue to go to work. For others, your work has found a way for you to work from home. And others yet are having to wait this out at home possibly with careers in jeopardy. Those that are retired...I envy you! Take the time to reach out to one another and check in and help each other get though this trying time!

It seems like now is a great time to self-quarantine to our shops and start knocking out those tasks we've been putting off on our projects...myself especially!! There was a time I thought my RV-14 would build itself each night when I turned the lights off in the hangar. I have accepted the fact that it will not. Please take pictures of yourself and your project as you go along and feel free to send them to Molly or I to use in the newsletter and our upcoming new social media platforms! Speaking of new web content, our new website goes live today, 1 Apr 2020! You can find it here: https://chapters.eaa.org/eaa39 In addition to the new website, we will be getting the Chapter 39 Instagram page going and also a new Chapter 39 Facebook page going. Look for those this month!

A few things to note, we will NOT be holding our regular meeting this month due to COVID-19. In addition, we will not be doing any Young Eagles events or any other events until the state leadership has given the all clear to congregate in large groups again. EAA HQ has passed along some useful options regarding monthly chapter meetings such as online meeting platforms. We will look into some of these ideas and determine if any will work for our chapter. Don't forget, you can always join other EAA chapter members online with any one of EAA's webinars that they host!

Email me at jscott_09@icloud.com, text me, or call me at 478-918-6494 with your questions/concerns or ideas on how to take our chapter to the next level! Stay healthy and safe out there!

VTail Hard Landing at Oshkosh, 2019
Open Discussion

March Minutes

by Gary Schroederr, Secretary

he meeting started at 6:59 pm

The meeting started with the EAA video magazine.

Sean Milke flew his first flight in his Cassatt.

April program may be Jerry Densmore advising what we need to do to get our aircraft ready to fly this season.

Burger burns will start in May and Arie will take us over to see the National Guard Blackhawks.

The Arizona Commemorative Air Force are bringing a B 25 to Rapid City regional Airport July 20th thru 23rd. Will we be able to help with security at the airport well they are giving rides? They will be flying the B 25 over to Ellsworth for the airs how as well.

AirVenture starts July 26th, if you are interested in camping with the chapter contact John to reserve a camp site.

The South Dakota Air Museum at Ellsworth is having the World War II speaker group giving presentations about the war. If you have Facebook you can look up The South Dakota Military History Forum for more information.

Bert advised that the Airport board will be talking about hanger rates and leases at the next meeting, if anyone has complaints or comments they need to be sent to them by Friday march 13th.

Bert advised the general aviation committee will meet March 21st and they need new members on the committee because some committee member terms are coming to an end.

May 16th is Learn to Fly Day, are we interested in doing an event for this? John advised he will get the materials and report at the April meeting. We will need pilots to help with this.

Al advised he has his collection of sport aviation magazines and aviation books available if anyone is interested contact him.

There is a suggestion to have a Young Eagles event in June. We will discuss it more at the next meeting.

8:09 PM meeting adjourned

Editor's Note: I'll be sending a new members' roster out next week. If any of your information has changed, please let me know ASAP. Thanks.

Buffalo Fly-In

Photos by Arie LaCroix

Building the CP-750 "Beryl", Part 5 Landing Gear and Fuel Tanks

By Scott Christainsen

By the time I needed a landing gear to set the airframe on, I was an accomplished gas welder and I knew I could build it. The basic design was simple and was proven many times over by builders of the popular Claude Piel's Emeraude. No hydraulics just two heavy duty springs, one to support the aircraft weight and to take up the shock of landing forces; a smaller spring for rebound movement and to keep the wheel assembly from falling out after takeoff. Two steel plates are welded to the top part of the large tube and go around the wing spar with four long bolts. The lower end of the large tube has a strap with ears that hold the scissors assembly in place so that the landing gear always points forward. A brass bushing is bolted to the bottom of the large tube to keep the springs inside and allow the lower gear to move up and down during landing. The lower half has a smaller tube that has the axle fitting, lower scissors attachment and a brass fitting at the top so that it will slide up and down inside the larger tube attached to the spar. This top brass bushing is placed between the two springs inside the larger tube and transmits the up and down movement of the gear to the inner springs. The large tube has two grease zerks to lube the brass bushing after the aircraft is completed and flying. Due to proper design, there is no need to compress the springs in order to bolt the lower brass bushing during final landing gear assembly. The landing gear has proven itself to be sturdy, reliable and maintenance free for 40+ years.

The difficult parts of building the landing gear turned out to be honing of the large tube to get rid of welding scale so that the brass bushing would slide freely inside the tube. The lower half of the landing gear was chromed for corrosion protection and longer wear but it was not perfectly round so it had to be machined so that it would slide through the brass bushing on the lower end of the large tube. This was work I could not do myself. Once all the brass fittings fit and would slide easily, the inner parts were greased thoroughly and assembled for the last time. The wheel assembly did not point straight forward the first time I was able to move the aircraft on its wheels. I was using Cleveland axles that had thick mounting ends and I was able to cut away excess material once I determined the proper angle using taper shims. The four bolt holes had to be slightly enlarged to fit the new angle of the axle, but so far the gear has held up through off field landings and through landing/takeoffs from strips that I would not even want to walk upon.

The tail wheel spring turned out to be an easy project. I found a business in Denver that bent spring steel and I left them with the blueprint from the Beryl plans. They called me a short time later and for $15.00 I had a finished tail wheel spring the matched perfectly to the blueprint. They provided the riveted strap around two of the springs and drilled the holes for the fuselage mounting and for bolting the Maule tail wheel. This was probably the easiest project of the landing gear and I was very thankful for my luck.

The fuel tanks (four each) were made with aluminum that could be gas welded. The two wing tanks (10 gals each) are airfoil shaped, triangular, and filled the gap between the landing gear and the fuselage. The fuselage tank (10 gals) fits aft of the firewall and the rear aux tank (12 gals) fits behind the baggage compartment and was intended for long cross country trips (when I was younger). After I completed the Beryl I used to say that building the wing tanks was the hardest project of all.

After one wing tank was finish welded, I decided not to weld the remaining tanks. I used rivets and Burt Rutan's fiberglassing techniques to finish the other tanks. I also used tank sealant to take care of small leaks. While fitting the wing tanks to the fuselage I discovered the tank outlet fittings were inline with the steel tubing structure of the fuselage. I had to relocate the fuel outlet fitting to the top on the gas tank. Since this is NOT where gas is supposed to be except when the tank is full, I installed an aluminum tube that was a half-circle (180 degrees) from the top of the tank to the bottom of the tank I would not know if this was going to work until I started flight testing. (It worked OK.) The forward fuselage tank was built with two outlets, top and bottom. The plane is stressed for aerobatics and needed a fuel supply for inverted flight. Instead of installing a flop tube inside the tank, I chose to have a top and a bottom outlet connected together with aluminum tubing on the outside of the tank This probably works OK, but the aircraft has never been upside down because I outgrew the idea of being an aerobatic pilot.

The rear aux tank was designed to fit in the baggage compartment I made by using empty space between the rear seat baggage and the vertical fin. I cut out the wood stringers and made an access door with a piano hinge at the top. The baggage floor was ¼" plywood and was valuable space for light weight items for years of trips to Oshkosh. I later modified the plywood floor by installing two fabric bags on both sides of a diagonal steel cross tube of the fuselage structure. This space was used for aircraft tie downs and other miscellaneous light weight items. I have photographs at Oshkosh after unloading the plane and bystanders wondering how all that stuff fit into the small plane. It was even more unbelievable when I had a rear passenger. I admit that the rear aux tank was not used for trips to Oshkosh or when I had a rear passenger. The rear tank has not been installed for years, but does slide in sideways and is bolted to the plywood floor. It has its own sending unit for knowing the gas quantity and the electric fuel transfer pump is installed on the fuselage structure for quick fuel line attachment. Fuel is transferred to the forward tank when space is available or the engine can use fuel directly from the aux tank. When transferring fuel to the forward tank, you know when to stop when fuel starts appearing on the windshield. One time on my way to Sun-N-Fun I was in the air for seven hours enjoying the tailwind and not wanting to stop for gas until I had to.

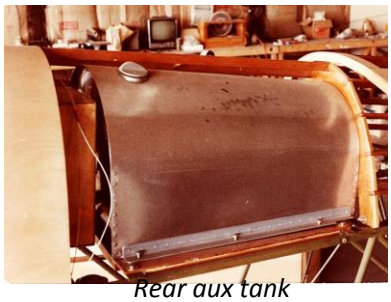
Regarding 'Systems' in the Beryl, I will mention only two. The IO-320 requires high fuel pressure for the Bendix Injector. I couldn't afford any of the standard aircraft pumps but I did find a Holley electric pump used on cars that provided 25 psi. These pumps run continuously on cars so my use for engine starting and for emergency backup should be OK. All I had to do was figure out how to allow fuel flow to the engine when turned off. I had already installed one-way check valves in the wing tank fuel lines so that fuel

would not gravity feed from the higher fuselage tank. So for the electric fuel pump I built a bypass around the pump using a one-way check valve so that fuel could flow around the Holley when not turned on. When the pump was turned on, the check valve stopped the fuel from going back into the tank and on to the engine. This has worked fine for 40+ years. Holley even offers a rebuild repair kit in case it starts to leak. (Bought one sometime ago here in Rapid City.)

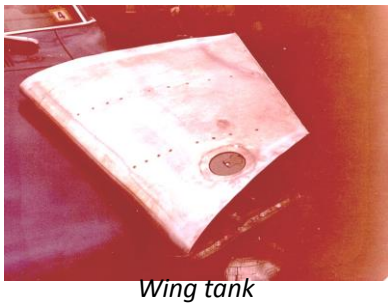
The last 'System' of interest was the pre-oiler I installed after moving to Hawaii. I still wanted to fly to Oshkosh each year so I left the Beryl in Ken Post's hanger and asked Richard Brandiger to fly it on occasion to keep the engine healthy. I found a pre-oiler built in Denver and asked Richard to check it out. He bought one for me and one for himself. (I bought Richard's pre-oiler years later and installed it in the Ellipse.) The Beryl was a hanger queen during my 11+ years in Hawaii. The pre-oiler has two functions: oil the engine prior to each start and acts as an emergency backup during flight in case of engine oil pump problems. It has kept my engine healthy during long periods of nonuse. It does have a disadvantage in that you carry that extra weight on every flight. Oh well, it was cheaper than an overhaul.

Forward fuselage tank

Top outlet & sender forward tank

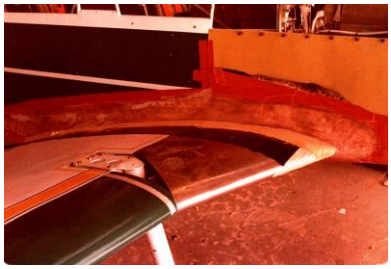


Rear aux tank



Wing tank

Wing tank



Installed wing tank