COMBAT AIR MUSEUM + + + Plane Talk + + +

The Official Newsletter of the Combat Air Museum

Topeka Regional Airport Topeka, Kansas

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Guest speaker discusses B-29 "Doc" that was salvaged from the scrap heap but may fly again soon



Jim Murphy, restoration manager for the B-29 "Doc" By Dennis Smirl

The weather cooperated just enough that the February Membership Luncheon was huge. Every seat was filled, and a few extra chairs had to be brought in to accommodate the crowd. There was more than enough food on the buffet table and the desserts were plentiful. With food service starting at 11:30, there was plenty of time to eat and socialize before the business meeting and the presentation.

Gene Howerter called the business meeting to order at 12:20, and started with a description of the successful program the Museum has enjoyed in partnership with Dillons Groceries. More than 40 of our members signed up in 2015. Gene reminded us that members need to sign up for 2016 to keep the program going.

Gene and Dave Murray worked together to design a new CAM pin for hats or lapels. The pins are available in the Gift Shop, along with patches made from the same pattern.

Following that, Gene told us about the Chocolate Festival Run scheduled for September 24th and sponsored by Mars Chocolate North America and Visit Topeka. Everyone expects this to be a very large event. Dave Murray told us he'd suggested using a photo of the Jenny with Mars Guys on the wings for a custom CAM T-Shirt.

Gene reminded everyone of the Annual Pancake Feed, scheduled for April 30th. A list was passed itemizing needs for the sale, and of course, baked goods are always welcome.

Work continues on the EC-121 restoration project. As the spring returns, two big jobs that include the deicer boots and the radome should get off to a great start. For those that help, 50 hours of donated labor gets the helper a custom T-Shirt and a hat.

Several attendees of the Oriskany reunion wrote letters praising the Combat Air Museum for hosting the reunion, and heaped praise on those who helped make the event a success.

With the business out of the way, Gene introduced Jim Murphy, restoration manager for the B-29 "Doc" which should be flying soon. Jim's presentation was lively and interesting, and filled with interesting facts.

Starting in 1987 "Doc" was purchased by a private owner, making it the only privately owned B-29.

Interestingly enough, all other B-29s are owned by the U.S. Navy. After being owned by a single individual for years, "Doc" was purchased by a group known as "Doc's Friends" five years ago.

"Doc" con't. on page 4

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Combat Air Museum

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Museum Hours

January 2 - February 28/29 Mon. - Sun. Noon - 4:30 P.M. Last Entry Every Day is 3:30 P.M. March 1 - December 31 Mon. - Sat. 9 A.M. - 4:30 P.M. Last Entry Every Day is 3:30 P.M. Closed New Year's Day, Easter, Thanksgiving, Christmas Day

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Plane Talk, the official newsletter of Combat Air Museum of Topeka, Kansas, is published bi-monthly. Your comments are welcomed.

From the Chairman's Desk

Gene Howerter, Chairman, BOD

I wish all of you would have been able to attend our February 8 membership meeting. Our presenter was Mr. Jim Murphy, Project Restoration Manager for the B-29 "Doc" which has been under restoration to full flying status in close proximity to the Kansas Aviation Museum in Wichita, Kansas. Jim related that when this restoration project was announced a decade ago, hundreds, if not a thousand, mostly-retired Boeing Wichita production workers volunteered to lend their support. Jim also reported that over the past decade many of these people have now passed on and will not see the maiden flight which should take place this spring if all goes well. I understand that feeling as our museum has experienced a similar fate over the past almost forty years.

"Doc", the B-29 Superfortress, is a Wichita-built aircraft, one of 1,644 manufactured there during the WW-II war production years. In 1987 a gentleman by the name of Tony Mazzolini discovered "Doc" sitting and rotting away in the Western Mojave Desert (Naval Air Weapons Station China Lake, California) and eventually purchased the remains and moved them to the Boeing Wichita facility with full flying status in mind. It now looks as if that plan is going to be carried out. As Jim told Museum members. the plane will be test flown this Spring. The plane will take off at McConnell Air Force Base, Wichita, flying south and east before returning to McConnell. Jim says there is a lot of paper work to be signed in order to use the McConnell facility. The group of happy volunteers and workers affectionately known as "Doc's Friends" successfully started all four engines during a test on September 18, 2015. The restored plane has been fitted with four newly modified, super Wright R-3350 Duplex-Cyclone engines which produce a whole lot more horse power than the original R-3350 engines. However, Jim said it still costs \$8,000 to \$10,000 an hour to fly this monster. We will be watching the outcome of flight testing and cheering for a successful flight. It is our hope to see "Doc" flying into Forbes and parking at the Combat Air Museum sometime in the future.

After Jim Murphy's program I thought back to a now deceased Combat Air Museum member whose career was intertwined with Boeing Wichita and B-29 production, as well as the flight test B-29 program. Most folks have never heard of Elton Holcomb Rowley. Yes, he was the real deal, even though he never got as famous as Chuck Yeager or Neil Armstrong and many more of other well-known test pilots. On the other hand, he never lost his life test flying an aircraft. Among his peers he ranked at the very top of the lot. Born in 1911 in upstate New York, Elton and his cousin, Clark Holcomb, built their first glider and test-flew it at age fourteen. Elton began flying in 1936. In his book I learned that he flew the mail, ran a flying service, and designed airplanes, including the high performance Greve-class racer. Elton barnstormed and was one of the most weather-wise pilots in the Army Air Corps. In the last few weeks of his military service Elton had some great stories to tell from his up-close and personal relationship with Gen. George Patton. It was Elton who convinced Gen. Patton to never be without a personal weatherman in his unit. At Curtis-Wright he rescued the lagging Curtiss SBC-4 Helldiver modification program, and at Spartan he saved the Navy NP-1 primary trainer which later was canceled, but is a great story in itself. You may know that J. Paul Getty purchased Spartan at a time when Mr. Bill Skelly, head of Skelly Oil Co. was leading the company. Elton was a VIP in the eyes of

both of these gentlemen and held a valued role within the company. You can read all about this in his book 'Time Before Space", if you can find a copy. Elton was a worthy master working with some of the biggest names in the aircraft industry in the thirties, forties, and fifties.

Let me share with you just a little sketch of Elton H. Rowley and his career with The Boeing Company, Wichita Division. In the late thirties and early forties Mr. Earl Schaefer, Senior Vice President in charge of the Boeing Wichita plant, realized he needed someone who had a lot of expertise in aircraft development and testing if the B-29 was ever going to be a great airplane. On February 18, 1943, Eddie Allen the "Dean" of all bomber test pilots was killed test flying the B-29 prototype. From past experiences, and word of mouth, Boeing Wichita felt that Elton Rowley was going to be that person. Schaefer called upon the management at Spartan Aircraft Comany to see if there was any possibility of Elton joining Boeing and helping them get the B-29 project moving in the right direction. After some consideration Spartan Management (Getty) told Elton they were willing to release him to Boeing because the B-29 was a very real military war effort project and Earl Schaefer had called to say he needed Elton to head a new engineering flight test department for the B-29 in Wichita. On Wednesday morning Elton called Harold Zipp, at Boeing, to say he would arrive at 10 am, and he would have the tower operator call to let them know he was on final approach. Elton arrived on time and taxied to the front of the administration building and parked. To Elton's surprise a rather distinguished delegation greeted him on the front steps of Boeing: Harold Zipp, Boeing's chief engineer; Earl Schaefer, VP; Jack Clark assistant chief engineer; Ray Hoffman, head of engineering personnel; N.D. Showalter, B-29 Superfortress project engineer; and Earl Weining, chief engineer of the training project. Elton wrote they welcomed him like a long lost friend, took him to lunch, showed him a very large, totally empty engineering room, and then notified him that it would be his job to hire all of the employees for his new department. Perhaps this is a good place to say that one of the people Elton hired for Boeing some time in his tenure was "Tex" Alvin Johnson who was to become one of the best Boeing Seattle test pilots in the jet age. Elton related he was looking forward to being Boeing's chief of engineering flight test. He wrote it would be his job to explore the operational and flight envelope of the aircraft and to help work out and flight-test modifications, as required, for Boeing.

I would like to review as briefly as possible just a few of the accomplishments Elton was to achieve throughout the rest of his career at Boeing Wichita. The B-29 was only his first challenge. Testing the B-29 made pioneers of all of the flight test crews. Elton wrote they did not look for quick success; that came from steady solid work, day after day. The problems solved were many, and the B-29 had plenty of flight issues throughout its history. Elton Rowley played a very important role in solving many of the issues, but he would tell you he had an all-star team and they all worked together flying their test plane "Sweet Sixteen" at Boeing. In the next newsletter I would like to follow up by publishing the complete press release from Boeing detailing the history of "Sweet Sixteen" and its war role. When you read it you will become both educated and impressed with Boeing Wichita's involvement in developing the B-29 and their magnificent roll in WW-II.

Post-war, Boeing Wichita proved to be the start of numerous new advancements in the aviation industry and Elton was to be a part of it. One of the first was the Boeing XL-15 "Scout." Another valuable program in which Elton played a major role was the development of the "Flying Boom" program better known today as air-to-air refueling. Then before we knew it, the jet-age was underway at Boeing as the B-47 was to be their first major jet bomber. Elton would test fly a new and different concept plane which would plow its way into the future of aviation once again. Then its next achievement was the B-52 which is still flying today. This list could go on and on, but I think you get the point that Combat Air Museum member Elton H. Rowley was not your typical everyday pilot. He brought so much to the aviation age that it still makes one scratch his head in amazement. When I stop to think it was only by chance that I got to know Elton as a dear friend at the Museum, I am overwhelmed with affection for the man and his accomplishments.

Perhaps I should relate to you that I first got to know Elton when he called the Museum one day and asked for Gene. Of course I thought he wanted aviation official Gene Smith who was on the Board of Directors at the Museum. He said no, I want to speak with the curator Gene. Long story short that was the day he donated his handcrafted full scale replica of the "Curtiss Jenny" to our Museum. You can still see it today as you enter the Museum. Elton wanted a good home for it as it was a joint effort project with his son John. Elton also wanted to fly the Jenny. Yes, Elton wanted to fly the Jenny at various times and he did on several occasions. I can still see him several hundred feet above our Hangar 602, flying stalled into a stiff Kansas SW breeze, waving down at all of us spectators with that same gusto he displayed as a young pilot and aviation pioneer. Elton was the real deal, a good personal friend, and a gentleman.

On August 3, 1991, the State of Kansas honored Rowley with the Governor's Citation proclaiming "Elton Rowley Day" in the State of Kansas and he was inducted into the Combat Air Museum Hall of Fame that same day. Rowley held a commercial pilot's license from 1937 to 1985, when he made his last flight as a pilot during his 56-year accident-free career. Elton, you will always be remembered for what you contributed to the field of aviation and the Combat Air Museum. Rest in peace. \rightarrow



"Doc," con't. from page 1

"Doc" was found at China Lake, in the middle of an artillery range. Most of the other aircraft in the range had been damaged or destroyed, but somehow "Doc" remained largely unscathed. After an inspection, it was obvious that "Doc" could be, and should be restored. But getting her out of the artillery range proved much harder than it looked, and a 4-mile trip "as the crow flies" turned out to be almost thirty miles.

Once "Doc" was safely out of the China Lake range, it was disassembled and transported to Wichita. Then the real work began. Everything had to be cleaned and the instruments had to be "sanitized" as Jim Murphy put it. The engines looked to be a real problem, and the folks who were working on "Doc" contacted the Commemorative Air Force for advice. The folks at CAF had extensive experience with the engines for "Fifi" and their advice proved invaluable, allowing the "Doc" crew to get engines that are far more reliable and long-lasting.

Jim Murphy treated the members to an excellent slide presentation, and some background information of the whole B-29 program in WWII.

Currently, the "Friends of Doc" are working on a hanger for her and, at the time of the presentation, waiting for



Left: The photo does not show everyone in attendance. Above: Gene Howerter (left) presents a Certificate of Appreciation to Jim Murphy. photos by Dave Murray

good weather to fly. At first, aircrew sent from CAF will flyher, and then help pilots of "Friends of Doc" transition to the left seat.

The presentation ended with a Q&A session that involved several of the members. Jim Murphy fielded the questions expertly, and added any number if bits of information that added to the overall experience.

Along with all the other highlights, Dr. Jim Marshall, a former radio operator on B-29s during WWII was able to attend, and his comments were well received. After the meeting broke up, Dr. Marshall went back to the simulator, and once it was running the B-29 program, pointed out the navigation points as the program simulated a flight from Tinian Island to Japan.

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How fast is the Speed of Sound? Well, that depends.

The above question has probably been asked many times when someone says this or that airplane could fly faster than the speed of sound. The above answer, as truthful as it is, would likely put off the person asking that question, though.

There is no one-speed-fits-all answer for the speed of sound. The speed depends on something called a Standard Atmosphere. As the Earth's atmosphere never remains the same at any particular place or time, a hypothetical model, known as the Standard Atmosphere, is used to approximate what may be expected. Altitude, temperature, pressure, density, and viscosity of the Earth's atmosphere are all involved in the model. There are a number of equations involved, and thankfully, for those of us who are equation-challenged, a lot of folks have already done the equations and developed tables dealing with Standard Atmospheres.

"Sound" con't. on page 10



A graphic representation, from the Internet, of a US Standard Atmosphere, in the metric system

In Memoriam Gerald Sliter

1934-2015 October 3, 2015 Frederick, Maryland Membership Number 3670 14-year Member

In Memoriam Roger & Lois Miller

January 23 & 24, 2016 Membership Numbers #172 and #433 37- and 35-year members

Calendar of Events

2016 Events April

11 - Membership Luncheon 30 - Celebrity Pancake Feed June 6-9 - Young Aviators Class 13 - Membership Luncheon July 11-14 - Young Aviators Class August 1-4 – Young Aviators Class 8 - Membership Luncheon September 24 - Winged Foot Run/Walk October 10 - Membership Luncheon November 24 - Thanksgiving; Museum is closed December 12 - Membership Luncheon 25 – Christmas day; Museum is closed. $\mathbf{+}$

Update on Hangar 604 and repairs to the roof

We recently have had enough rain showers to get a good feel for remaining leaks in the roof of Hangar 604. There are still several, but the largest collection of water on the floor was about the size of a dinner plate. Danny San Romani marked the areas and as soon as the workers are free from other jobs will walk them through the hangar and show them the areas. It is nothing like it used to be in regard to the number of leaks and amount of water coming into the hangar.

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In Memory of Roger & Lois Miller

by Gene Howerter

Saturday January 23, 2016 and Sunday January 24, 2016; the Museum was saddened by the news of the passing of two longtime members. Both 84 years in age, Roger and Lois Miller passed away within hours of each other. As a local television station reported it was a romance which lasted sixty-two years. The Capital Journal said the couple worked to enrich the community around them. Lois took on the task of Membership Chairman for the Museum shortly after joining in September 1980 (#433) a task she performed until 1995. Along with that job she always maintained the Roll Call of Member's plaques which hang permanently in the Museum Chapel. These boards prominently display names of members who are deceased and the dates of their passing. Now both Lois and Roger will have their names engraved and placed there as part of a salute which honors past distinguished members.

Roger Miller joined CAM (Combat Air Museum) in September 1978 (#172) shortly after its inauguration. In 1981 Roger was elected the Museum's treasurer, a job he held until July 1988. On January 4th 1988 Roger was hired after a vote of the CAM/BOD as CAM's Executive Director, a job he held until resigning in December 1993 after four years and seven months of service. The January 1994 newsletter reported the atmosphere was decidedly festive as a large number of members and friends gathered at the Forbes Field Terminal to celebrate Roger's retirement. Before retiring Roger introduced the "Above and Beyond" award which was created by member Jim Leighton and Roger to recognize more tangible contributions to the Museum by members. Roger's second love was the Museum and he always put his heart and soul into his position as Executive Director of CAM.

Survivors include daughter Janet Miller of Topeka, son Philip Miller and daughter-in-law Kiki Petrosino of Louisville, KY. At the funeral Kiki read a most appropriate writing; Tale of Baucis & Philemon from the Metamorphoses of Ovid. It is a beautiful story of two people who share death as they had lived and loved and shared life. Roger and Lois now share one casket and will always be together eternally.

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The Celebrity Pancake Feed is almost here. There are a number of ways you can help make this important fundraiser a success

April 30 marks the last Saturday in April 2016 and also our 23rd Annual Celebrity Pancake Feed and Fly-In Market. It starts at 7 a.m. that morning in Hangar 602 and runs until 12 p.m. For a \$6 admission, folks can have all the pancakes they can eat with an initial serving of sausage links, orange juice, and coffee. This admission fee also covers admission to the Museum that day, so it is a two for one deal. Seconds of sausage can be purchased for an additional charge.

This is the first of our two annual fundraisers for the Museum. The funds from this and the annual fun-run are used through the year for Museum operations.

Gene Howerter and Deloris Zink have extended the invitations for Celebrity Flippers, and we have been getting calls back from people accepting the invitation and telling us when they want to flip. Gene always goes for a mix of Celebrities, including city, county, state, and national office holders, local television personalities, law enforcement and military members, Washburn University faculty, administrative, and sports representatives, and corporate and public personalities from the metro area.

Advance tickets for the Feed can be purchased in the Gift Shop, from members, or by calling Gene or Deloris. Members have picked up blocks of tickets in the past to sell outside the Museum. Call Gene or Deloris for more information. Ticket purchases can be made with cash, check or credit card.

Bob Carmichael of Perkins Family Restaurant will be Chargé d'affaires of the pancake grills and Master Flipper. His roles include coaching the flippers, quality control of the product being served, and all around Goodwill Ambassador. Bob provides the pancake batter, sausage, syrup, and butter. We provide juice, coffee, the plates, eating utensils, cups and napkins.

Our entertainment lineup this year includes young people from the Beverly Bernardi Post Conservatory of Dance, "The Soul-full Singers" from Countryside Methodist Church, the "Blumont" musical ensemble, and a KC-135 Stratofortress Tanker from the 190th Air Refueling Wing, Kansas Air National Guard. Beverly Post will also bring Miss Topeka, Michelle Page, and Miss Capitol City, Cari Ann Cashon.

Washburn University School of Nursing students and staff will be in the Bob Dole Education Center to administer free blood pressure and blood glucose screenings.

This will be the third year for our Fly-In Market Sale with Marlene Urban heading this popular segment of the Pancake Feed. The Sale runs in conjunction with the Feed. We are currently collecting smaller, new (unused) items and estate sale type items for the Sale, placing them on tables in the Gift Shop office space. No clothing will be accepted.

Smaller items may be brought in anytime before April 28th (Thursday). Large items can be brought in by April 29th (Friday). If you need to bring in a large item before the 29th, please check with Dick Trupp as to where it can be stored. If your donation does not sell and you would like it returned to you, please indicate on a note and attach it to the item with your name and phone number. Many of these items can possibly be marketed through the Gift Shop before the event, so please bring them in at any time, now. Take advantage of retail store sales, estate sales, etc., and purchase bargains for this event. Homemade baked goods are welcome and have been sold in the past. If you want to help but do not have an item to donate, we will be accepting cash donations to buy items. Questions? Call Marlene Urban at 379-5306 or email her at urban. marlene@att.net.

NOT DESIRED

Pictures or prints

Leftover garage sale

Out of date/obsolete

cracked, broken, dirty

electronic items

Anything chipped,

Clothing

Vases

items

or worn

DESIRED ITEMS Cash Theme baskets or items that can be used in such baskets Collectibles Jewelrv **Unique Gift Items** Gift cards Antiques Gift certificates Gift cards New or like new kitchen items New or like new baby items New or like new children toys Gardening items Potted plants Large lawn or garden items New or like new bikes New or like new tools New electronic/tech items New pet items Sports memorabilia

New or like new camping gear

Volunteers are needed before, during, and after the event. A sign-up sheet for the volunteers working on Saturday will be in the Gift Shop. The morning work requires volunteers to be at the Museum no later than 6:30 a.m. Bob Carmichael arrives earlier, bringing in the pancake



mix, butter, and syrup. He does final setups of the grills. The early arrivals will be preparing the ticket sales table, filling syrup bottles, putting butter patties on the tables, and setting up the beverage stations. As the event starts volunteers are needed to:

Sell tickets in the Bob Dole Education Center,

Work the Fly-In Market sale

Greet, welcome, and escort guest flippers to the grills,

One volunteer to take in tickets at the start of the food line Serve utensils, beverages (juice/water), and condiments at the end of the serving line,

Transfer juice pitchers and coffee urns to and from the kitchen,

Replenish syrup bottles and butter, clean table spills

Clean up any floor spills

Change out trash bags

Move four aircraft out of the hangar on Wednesday, April 27.

If it is ready, we will suspend the Airco DH.2 replica from the ceiling that day, too. Thursday will be spent sweeping and running the floor scrubber. Cleaning of other aircraft may also take place that day and Friday. Friday will be set up day for the tables and chairs and the Fly-In Market tables. Marlene Urban and her crew of ladies will set out the sales items for the Fly-In Market. Bob Carmichael will bring the gas grills and other items out later on Friday afternoon.

After noontime the day of the Feed, we need volunteers to take down the tables and chairs, help Bob Carmichael clear his gear out of the hangar, clean the food preparation and serving area and other areas as needed, and weather permitting, bring the aircraft back into the Museum. When we are done, the only hint of a pancake feed should be the aroma.

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Join the Combat Air Museum!



A rocker arm assembly and two cylinder halves in silver ABS. The rocker arm is stationary, but the spring is flexible. photo by Huw Thomas

Projects update

Airco DH.2 Replica

Huw Thomas continues to leave us in wonderment with his creations of 3D blueprints and 3D printed parts for the replica engine to mount to the replica DH.2 aircraft. We now have an example of a rocker arm/exhaust valve assembly, complete with valve spring, and Huw showed us how it will mount to the engine cylinders. The rocker arm does not move, but the valve's coil spring is flexible and does move.

Huw talked with Don Dawson during one of his visits about the dimensions for making the crankcase end plates and engine mounts so they match the pipe (propeller shaft) and flanges Don made for the engine and propeller. He also asked Don what materials we had to make the push rods. He described how he wanted to attach these to the rocker arms and to the crankcase, and we recommend using tubes rather than solid rods. Don and Danny San Romani found used assemblies of hydraulic tubing, and Don cut nine lengths of tubing from these materials that will act as push rods.

The School of Architecture and Design at the University of Kansas recently received two new 3D printers, and Huw felt this would speed the process of making engine parts. However, it has yet to proceed as planned, so Huw purchased a 3D printer using personal funds and will dedicate that to this project. We will purchase the filament needed for fabricating pieces and parts. Huw has also begun printing parts in a silver ABS (Acrylonitrile Butadiene Styrene) and it will make a great color for the engine.

Navy Carrier Training Aid

We need some help identifying an artifact acquired from the Old Olathe Naval Air Museum (OONAM) after it

"Projects," con't. on page 8

"Projects," con't. from page 7

closed in 2004. OONAM had a large scale aircraft carrier training aid on exhibit. It was over nine feet long. This carrier became the basis of the model of the USS ORISKA-NY currently on exhibit. The hull of the training aid was extensively rebuilt and modified by Larry Todd into the hull seen today in the ORISKANY exhibit. However, Larry felt it would be better to scratch build a new flight deck rather than rebuild the existing flight deck of the training aid. Ted Nolde made the same decision regarding the car-

rier's superstructure. It was too primitive to rebuild and use, so he scratch-built the superstructure seen in today's ORISKANY exhibit.

The original flight deckandotherremains

of the training aid were stored until a couple of months ago when Danny San Romani brought them over to the workshop and asked Don Dawson to reconstruct the flight deck back to what it looked like as a training aid – without having anything to really show him what that look was. In our collection of photographs from OONAM, we have a few taken of 1950s American pop singer Teresa Brewer during a visit to then Naval Air Station Olathe. We do not know the occasion or date of the photographs, but in the background of one photo, just behind Ms. Brewer, a small segment of the aircraft carrier can be seen. It does show a little detail, but it is only a small segment of the entire carrier.

During the construction of the ORISKANY exhibit, the flight deck was used as a stand-in for a period of time. Ted finished his superstructure and Darren Roberts had built most of the air wing for the exhibit. Ted and Dick Trupp modified the flight deck to resemble what the ORISKANY's looked like, and Danny removed a number of brass trim and fittings before Ted and Dick did their work. The flight deck, new superstructure, and air wing were then placed on exhibit to show visitors what was coming.

Why do we call this flight deck and the carrier a training aid? It once had a number of working parts. The carrier was outfitted with working lights that corresponded to navigation lights on an actual carrier. There is a phenolic plate labeled DK. EDGE CONT. PANEL and we have yet to find where it was installed. There are two hand cranks that operate chain-driven shuttles in each of two launch rail tracks built into the bow section of the carrier. A third crank operates a rack and pinion actuator that lowers and raises an elevator. Two knurled, brass disks raise and lower cables and a crash barrier on the flight deck. The former system works; the latter is broken and missing parts. There is a diagram on the bottom of the flight deck's aft section that shows a rather elaborate system for installing six arresting cables that would catch the tail





Top photo by Old Olathe Naval Air Museum How the carrier looked while still in the Old Olathe Naval Air Museum Center: The carrier's look as of February 27, 2016. Lower: The Pratt & Whitney J57 engine training aids. photos by Danny San Romani

hooks of landing aircraft on a real carrier. The diagram also includes the two wire barriers mentioned above. Six knurled, brass disks operate the arresting cables in a manner not yet clear. Three of the disks are missing, but Don fabricated wood replacements on the lathe from a garden tool handle.

Danny thought at first the aid was based on a World War II ESSEX class aircraft carrier. He was partially correct. It is an ESSEX class, but one that was modified with an angled flight deck. Fortunately, he found a series of six images on an Internet site that showed the progression of flight deck modifications to the ESSEX class carriers. He and Don were able to match one image to the shape of the flight deck we have that represents an SCB-27A + SCB-125 angled flight deck modification of the mid-1950s.

So, with no instructions or other diagrams specific to <u>"Project," con't. on page 9</u> this training aid, Don set to the task. The carrier is actually quite impressive for all its machinists' work. It has hundreds of machined brass and aluminum parts. The arresting cable system and associated trim uses some 280 parts by itself.

Danny labeled the parts he removed earlier as to location, and for the most part, these went back on without too much difficulty in finding their respective locations. He had removed some of these parts from the hull of the carrier, and since that was rebuilt for the ORISKANY, they had no where to be reattached.

Then Don and Danny went into a couple of cardboard boxes received from OONAM that held many parts for the carrier that had been removed when it was still at OONAM. In a much slower process, screw holes in parts were matched to screw hole patterns in the flight deck. Don was pretty successful with this work.

Over the Martin Luther King holiday, Darren Roberts drove over from Olathe for a visit. Darren is a long-time volunteer with CAM, especially as a model builder. He was also a member/volunteer with OONAM and had done some work with the carrier training aid over there. Danny thought Darren would be a big help in knowing where the parts from the boxes went. It was a good thought, but not accurate. He did not know. He told Danny at some point in time, members of a Sea Scouts unit had removed all the boxed items and added wood sections to the flight deck to make it look like the nuclear powered carrier USS GEORGE WASHINGTON (CVN-73). The original superstructure was removed and one looking more like a CVN installed. Darren looked at what Don had done so far, and said he was looking at things he had never seen before. We did peak his interest, and he will be searching to see if he can find somewhere else that has one of these aids restored and on exhibit.

Certain parts attached to the sides and bottom of the flight deck, like the operating elevator, required that the deck be placed on supports. Don built and installed these to the underside of the flight deck.

Danny searched Internet sites for photos and drawings that would help locate parts and pieces. He also found a plastic scale model of the USS WASP (CV-18) in our models boneyard that has been very helpful.

A number of parts from the boxes, particularly 40mm guns and a couple of 5-inch guns, were mounted to the hull. Danny asked Don to mounts these on blocks of wood at about the height they would have been in relation to the flight deck, so they could be placed around and/or under the flight deck edge in their relative locations. This is completed. Four twin, five-inch gun mounts are mounted on the flight deck. Several barrels for the five inch guns were missing. Don replaced these with 3/32 inch aluminum tubing.

Currently, Danny is working on the rigging of the arresting gear cables. As written above, Don made the three missing disks needed for this, and there are at least a handful of other missing parts necessary to put his rig together. We will improvise something.

We have parts left over. Some we know were mounted to the hull and have nowhere to be installed. Others, particularly electrical items and wiring, were installed inside the hull. Then there is a small group of parts we just do not know where they fit. Their hole patterns do not match anything.

At this time we do not know what we are going to do with the flight deck. It is over nine feet long. A stand would have to be built, which we can do, but it would have to be covered for protection. Based on the clear plastic cover made for the ORISKANY exhibit, we would spend some \$2000 for a similar cover.

Spheron Images of the EC-121T Constellation

Huw Thomas has taken some great images of the EC-121 Constellation exterior and interior using his Spheron System camera. You can view these on the Museum's website. Go to www.combatairmuseum.org/aircraft/ lockheedec121warningstar.html.

This takes you to the Connie's page with nine images near the bottom of the page. Just above the nine images look for Take a Virtual Tour of the EC-121 under Restoration. Click on this. You get a nose-on image of the Connie. On the left side is a column of 10 thumbnail images. Moving your mouse over each will reveal a title for each. On the right side of the image is a vertical tool bar. Moving you mouse over each symbol will reveal what that symbol does. The Spheron system photographs from floor to ceiling and 360 degrees around. Using the toolbar, you can zoom in and out, look up, down, right, and left, set the view on an auto-rotation, and other things. It is a most impressive way to look at the Constellation. Huw's goal is to do this for other aircraft in the collection as well as the hangar interiors. Look this site up and just play with it.

Pratt & Whitney J57 Turbojet Training Aid

Don Dawson's current project involves two Pratt & Whitney J57 turbojet training aids we acquired about 11 years ago. They have been outside the south end of Hangar 604. We understand them to be ex-US Air Force classroom aids for Boeing B-52 Stratofortress bombers. Two prototypes and seven versions of the B-52 used J57 engines.

The engine casings have stator vanes but no internal moving parts. They are see-through engines. The exterior accessories are a mix of actual engine parts and wood replicas. There are different size tubing and pipe and cable harnesses. There are oil saddle tanks.

Don and Danny San Romani looked over both engine aids and selected one that had less damage to the individual and overall assembly. Don also looked over a homemade engine stand of iron pipe and a couple of parts from a real engine stand. He made several measurements of the stand and of the engine aid and determined the stand cold be modified, including additional bracing, and it would support the chosen engine.

Don currently has the stand in the workshop. He ground off some jagged metal, prepared and primed the piping, <u>"Project," con't. on page 10</u>

"Sound," con't. from page 4

For those of you who have Internet access, try looking up Standard Atmosphere, U.S. Standard Atmosphere, or International Standard Atmosphere. You can scroll through a multitude of sites addressing the various titles.

The US and Europe both began developing standard atmospheric models in the 1920s. There were slight differences between the models that were reconciled, and an internationally accepted model was introduced in the early 1950s by the International Civil Aviation Organization. The US Standard Atmospheric Model has been updated in 1962, 1966, and 1976.

For our purposes, this author used the U.S. Standard Atmosphere as published in a figure that includes a table in the Standard Aviation Maintenance Handbook, Revision 1, Revised 1985, by IAP, Inc., Casper, Wyoming, ISBN 0-89100-282-0. The handbook is about 4-1/2 inches wide X 7 inches high. The table for the U.S. Standard Atmosphere covers 2-1/2 pages. There are five columns in the table that include Altitude in Feet, Temperature in degrees Fahrenheit and degrees Celsius, Pressure in inches of Mercury, and Speed of Sound in Knots.

There are 73 rows of information, starting with an altitude of minus 2,000 feet and increasing in 1,000 feet intervals to an altitude of plus 70,000 feet. Over these 73 entries, the Speed of Sound changes 44 times.

From minus 2,000 feet through plus 37,000 feet the entries for the Speed of Sound decrease with increased altitude, from 666.0 knots at -2,000 feet to 573.3 knots at 37,000 feet.

At 37,000 feet, things change a bit – actually, they start to stay the same. The Temperature stays at -67.9 degrees Fahrenheit/-56.5 degrees Celsius and the Speed of Sound is 573.3 knots from 37,000 through 65,000 feet. Pressure, however, continues to drop throughout the increasing altitude. At 66,000 feet, Temperature and Pressure both drop, but now the Speed of Sound increases, from 573.4 knots at 66,000 feet to 575.0 knots at 70,000 feet.

So, piece of cake. All you have to do with this table is memorize about 365 entries and hope no one asks you the altitude in meters, or asks, "What's a knot?" (A knot is a unit of speed for one nautical mile per hour, approximately 1.151 statute miles per hour.)

Looking through websites reveals different Standard Atmosphere tables. Many use the metric system. It may help some people to see the tabular data represented in a graphic form. The results are the same. Unless an aircraft is flying in that 37,000 – 65,000 feet envelope, the speed of sound changes with altitude.

A related term/topic is Mach Number. You read or hear about fighters and their Mach 1 or Mach 2 speeds, or the SR-71 Blackbird with Mach 3+ speed. The Mach Number is the ratio of a speeding body to the speed of sound in the surrounding atmosphere. Again, go back to the Internet, try entering Mach 1 = mph? and you will probably get a finite number. But is it really? Does that number represent a certain altitude? The Standard Atmosphere shows us that breaking the sound barrier is not always achieved at the same speed. A plane flying slower than the speed of sound at sea level can achieve Mach 1 flying the same speed at a higher altitude. For example, a pilot wanting to fly faster than the speed of sound while hugging the shoreline of the Dead Sea (-1, 371 feet), would have to fly better than 663.6 knots, or about 764 miles per hour. The plane might achieve Mach 1 at sea level, where sound travels at 661.2 knots, or about 761 miles per hour. Keeping the 663.6 knots speed from the Dead Sea altitude to an altitude of 37,000 feet would put the aircraft at about Mach 1.16.

For those of us at the Museum who may be asked the question about the speed of sound, it might be good to pick a particular altitude (perhaps sea level) and know the speed at that altitude, using knots or miles per hour or kilometers per hour. Then perhaps explain that as altitude increases, the speed necessary to break the barrier decreases, holds steady, then increases. \rightarrow

Learn more about the Combat Aír Museum at www.combataírmuseum.org

"Projects," con't. from page 9

and added four corner braces and two frame braces. The stand's legs each have a steel pad on the bottom that Don will use to mount heavy duty, swivel plate casters.

Don and Danny picked a spot inside Hangar 604 that they can move the engine to and set it upright on one end. The spot will allow Don to walk around the engine to get a better inspection. The second engine, although with some damage, can still be used to swap parts where needed.

The J57 was a popular military engine. Beside the B-52, versions of the J57 powered the Boeing C-135A Stratolifter and KC-135A Stratotanker until they were upgraded with turbofan engines, the Convair F-102 Delta Dagger fighter, Douglas A3D (A-3) Skywarrior attack aircraft, Douglas F4D (F-6) Skyray fighter, Douglas F5D Skylancer fighter, some versions of the Lockheed U-2 spy plane, the Martin RB-57D/WB-57D version Canberra, McDonnell F-101 Voodoo fighter, North American F-100 Super Sabre fighter, and the Vought F-8 Crusader fighter.

Convair's YB-60 swept wing bomber used J57 engines, but lost the bomber competition to Boeing's B-52, also using J57s. Then there was a ground-launched, intercontinental range cruise missile, the Northrop SM-62 Snark.

In our next issue, watch for The Airship Aircraft Carrier Exhibit.

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Upcoming Events

April Monday, April 11 Membership Luncheon **Bob Dole Education Center** 11:30 am Seaman Students History **Day Presntations** Mrs. Susan Sittenauer will bring some of her students out to present their National History Day projects.

Saturday, April 30 23rd Annual Celebrity Pancake Feed Hangar 602 7 am – 12 pm

> May No events scheduled.

There is no Membership Luncheon in May. The next luncheon will be Monday, June 13, 2016.

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Guest speaker for next Membership Luncheon

By: Dave Murray

The April Membership Luncheon will be another in our popular series of Topeka's Seaman High School student presentations as part of the State and National History Day contests. Mrs. Susan Sittenauer has brought some of her brightest and best to the Museum for our April luncheons. She has taught at Seaman High School since 1985 and instructs at the school in Advanced Placement History and Civil and Criminal Rights. This year's History Day theme is Exploration, Encounter, Exchange in History. $\mathbf{+}$

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CORRECTION: We failed to properly finish Dave Murray's KC-135 write-up in the last issue of *Plane Talk*. The article should have ended:

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"I know that I have a newly found respect for all the service folk of this great unit here in Topeka, Kansas, and, especially, for the very professional crew members of our flight. Hey! Air Force Base Realignment Committee, Hands-Off Our Guard Unit!" →

Visitors **During January** the Museum had 318 visitors from 15 states, and Czech Republic South Africa **During February** we had 478 visitors from 21 states, and

Canada Czech Republic Finland **Great Britain** Japan Saudi Arabia

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Come show us YOUR stuff at the Combat Air Museum





Master Madden Peterson, grandson of Steve and Denise Wishon of Topeka, knows how to dress for an aviation museum. photos by Dave Murray