

THE LANDINGS

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Newsletter of Chapter 75
Quad-Cities of Illinois and Iowa, USA

March 2019

THE EXPERIMENTAL AIRCRAFT ASSOCIATION

From The Desk of the President



Work has been slow this winter, which is why I'm surprised I was so busy in January and February. I took six days off in January to visit friends in the keys and Fort Meyers. When I returned with my Lancair 360 I removed my cowl to start my annual. Well, the plane is still sitting there without a cowl. With the crappy weather I haven't been flying anyway. I've been drawn to my warm shop to work on the Lancair Four. I'm actually not a big fan of owning two airplanes. One problem, the money it takes to keep both going. One needs gas and upkeep the other needs parts. The second problem, the time it takes to keep both airworthy. If I was affluent I would hire a mechanic to keep them both in the air. The problem with that is I don't have the money and I want to do the work. I like working on the flying Lancair because I like the peace of mind it is safe to fly. I like working on the newly started Lancair because I like bringing the dream to life. Give me a warm dry place to work on them and it's hard to keep me away. In February I had the Home Show which is the big kick off for my construction year as I'm a "Design Build Remodeler". The end of February I went skiing with friends for 5 days. I'm back now so I need to spend the next few weekends getting my flying Lancair going so it's



ready for nice weather. I also want to keep the Lancair IV going forward. So much to do so little time, oh and I need to make money too.

On my way back from skiing in Colorado I stopped

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Next Meeting-Saturday, March 9th 7PM - Quad Cities Intl Airport Fire Station
The Location is NOT at Deere-Wiman (See the Next Page for Info)

March 9th Chapter Meeting

Our regular meeting for Saturday, March 9th, will not be at the Deere-Wiman House. It will be at the fire station at the QC International Airport in Moline. The time will be 1900 (7pm). We will be treated to a presentation by the professionals of the airport Public Safety (Fire) Department. There will be no business meeting.

Topics such as aircraft and hangar fire prevention, best response and actions by pilots who are involved in or come upon an aircraft accident, fire extinguisher types, uses and placement in hangars and aircraft, etc., will be discussed. We may also be able to view some of the equipment on hand and used by the MLI Public Safety personnel. Information on selection, initial and recurrent training and duties of their personnel will also be presented.

This is a special program for our chapter, and not an open house. Parking and space may be limited. Visitors are welcome, but don't plan to bring the whole neighborhood. Some of the personnel are also involved in law enforcement, so camera use will be at the discretion of the chief.

To get to the facility, drive south on the airport entrance road from the traffic light at the end of I-74 and turn left off the four-lane road as it curves following the sign to the Public Safety facility to the right front. If you get to the cell phone lot, you have gone too far and have missed the left turn. Park in the lot on the east side of the building. If the lot is full, use the lot just to the east at the ground maintenance facility building. Enter the facility at the east side turn style gate. Buzz the operator, or one will be on hand to help us. Try to be at the building by 7 pm.

If there is a weather emergency, all bets are off, but think 40's and dry. Check your email for any last minute notices of changes, but there should be none.

Questions, call Richard Lowe at 563 355-3424 or email to vicriclowe@aol.com.

From The Desk of the President

(Continued from page 1)

to visit a new friend in Windsor to look at his Lancair IV-P project. He bought a fast build project two years ago from an engineer. The engineer was so anal he couldn't get started building the IV. He had the manual color coded and all the hardware was perfectly organized. When Lancair offered more fast build options he would send the kit back for that. Perfection



can kill a project. I don't care if your talking airplanes or construction. Perfection is a slippery slope.

Rest assured I don't have that problem. My bench is cluttered and disorganized because I don't want to take time to clean it. My building practices are not perfect. I like my lines to be straight, my contours to be smooth, and the plane is light for performance. There are many parts of the plane that don't need to be perfect, the trick is knowing where it matters. The directions say you need to be + or - 1/4". The plane doesn't know the difference. I have little interest in

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From The Desk of the President

(Continued from page 2)

winning an award. Having said that I do like a good looking airplane, just doesn't have to be perfect. What makes me a poor hobby guy, as I finish one item I see two more to finish. I'm driven by unfinished business and this causes me stress. Sometimes I just need to walk away knowing I left that item unfinished to focus on other things.

Since I have the floor I'll tell you what state my Lancair IV project is in. Two months ago I took it from the jig and rolled it over to work on the main gear doors. During that time I installed the nose gear and gear doors. I extended the main gear and temporarily bonded the doors flush to the fuselage skin. A month ago I reached a milestone, we set the fuselage on the landing gear so I could lay fiberglass in the inside on the gear door edges. In affect I'm building my door stops. That was pretty cool. When I sweep I can roll the plane out of the way. It's the little things in life. The next step is to roll the plane over to break the doors free and trim the door stops. After that I check the door operation as it pertains to the landing gear. Next but not least is the underside body work. Once I'm done with making it smooth I'll prime it. Then I can roll it over on wheels for the last time.

The nose gear is mounted and operational, while I was visiting my new friend he showed me a modification the company recommended to the engine mount. I need to weld some gussets in the corners above nose gear. If you didn't know it, the most stable shape in engineering is a triangle; the engine mount above the nose gear is square. Apparently there was a nose gear collapse when the side load was too great. Jim is going to help me improve my welding skills, while we burn off my beautiful paint job. Two steps forward one step back.

My carbon fiber cowl was perfect and ready to go, till a friend made fun of the Dolly Pardon look. There are two large scoops on bottom of cowl for the turbo chargers. I don't have turbo chargers so I'm making them smaller for more stream lining.

Well back to work, see you at the meeting. Jerry

February Board of Directors Meeting Minutes

CALL TO ORDER: The meeting was called to order by Chapter Vice-President Ron Franck at 6:06 pm.

MEMBERS PRESENT: Ron Franck, Don Fey, Ed Leahy, John Riedel, Nick Anagnos, Jim Skadal.

THOSE NOT PRESENT: Jerry Coussens, Ron Ehrecke, Marty Santic.

OTHERS PRESENT: Rich Lowe, Tom Sheldon

TREASURERS REPORT: The treasurer's report was delivered via email by Ron Ehrecke. A motion to accept the treasurer's report was made by Nick Anagnos and was seconded by Ed Leahy. Approval by the board was unanimous.

APPROVAL OF MEETING MINUTES: A motion to approve the November meeting minutes as published in the last newsletter was made by Ed Leahy and was seconded by Nick Anagnos. Approval of the board was unanimous. (The last regular board and general meeting was last November.)

OLD BUSINESS:

Additional tool expenses, which were unanimously approved by the board via email, were discussed.

NEW BUSINESS:

Rich Lowe reported that our March meeting may be "replaced" by a visit to the MLI Airport Fire station for a tour and mutual information exchange. This tour would "replace" our regular chapter meeting, and there would be no March board meeting. Upon confirmation with the Airport Fire Department, Rich will advise, and notification of this change to members would be disseminated in the newsletter.

Tom Sheldon reported that the new Airventure Fulfillment System (AFS) will "go live" on Feb. 27th. Both he and Bernie Nitz, 2019 EAR co-chairman, will attend a briefing on same on Feb. 26th.

Jim Skadal reported that we have two attendees approved for the 2019 Air Academy:

Sam Bevans who will attend the intermediate session, Trevor Christoffersen who will attend the advanced session.

Jim also asked for suggestions for attracting Young Eagle candidates, such as Local CAP commanders, Local high school teachers, etc.

A motion to adjourn the meeting was made by Jim Skadal and was seconded by Ed Leahy. The meeting was adjourned at 6:35 pm.

These minutes respectfully submitted by Don Fey.

February General Meeting Minutes

CALL TO ORDER: The meeting was called to order at 7:04 pm by Chapter Vice President, Ron Franck.

VISITORS AND NEW MEMBERS: 25 members present.

TREASURERS REPORT: The treasurer's report was presented by Ron Franck. The treasurer's report was approved at the Board of Director's meeting.

APPROVAL OF MEETING MINUTES: The minutes of the last meeting as published in the last newsletter were approved at the Board of Directors meeting.

TOOL LIBRARY:

We now have three "Gator" tool boxes, and six tire change kits – one for each Gator and three for the tool window. Need to purchase some tire patch cement for each kit because, once a tube is opened, its "shelf life" is limited.

Thanks for the sale of surplus tool crib items, \$315.50 was collected, which can be used for additional purchases.

TECH COUNSELOR REPORT: Nothing to report.

FLIGHT ADVISOR REPORT: Nothing to report.

REPAIR BARN: Tom Sheldon reported that the new Airventure Fulfillment System (AFS) will "go live" on Feb. 27th. Both he and Bernie Nitz, 2019 EAR co-chairman, will attend a briefing on same on Feb. 26th.

YOUNG EAGLES: Normal first event of the year is Father's Day at Geneseo Air Park, but may try to schedule a Young Eagles day at DVN in April.

Members who participate in Young Eagles need to take Youth Protection training, and register with EAA.

PROGRAM COORDINATOR:

Rich Lowe reported that our March meeting may be "replaced" by a visit to the MLI Airport Fire station for a tour and mutual information exchange. This tour would "replace" our regular chapter meeting, and there would be no March board meeting. Upon confirmation with the Airport Fire Department, Rich will advise, and notification of this change to members will be disseminated in the newsletter.

AIR ACADEMY ADVISOR:

Jim Skadal reported that we are seeking additional applicants for both the Air Academy and the Ray Scholarship Program. To that end, he's looking for suggestions for reaching potential applicants. We currently have two approved Academy candidates, and one likely Ray Scholarship applicant.

MEMBERSHIP COORDINATOR: Nothing to report.

ACTIVITIES / FLY-IN/OUT COORDINATOR: Position vacant. Need a volunteer.

NEWSLETTER EDITOR: Nothing to report.

WEB EDITOR: Nothing to report.

IMC CLUB: Bernie gave a brief presentation on the operation and location of the IMC Club.

SCHOLARSHIP COORDINATOR: Included above under AIR ACADEMY ADVISOR.

OLD BUSINESS: None.

NEW BUSINESS: Keith described the Ray Scholarship Program to the members.

Deere has asked us to be out of the building by 9:00 pm, so the building can be secured.

A motion to adjourn the meeting was made by Nick Anagnos and was seconded by John Bruesch. The meeting was adjourned at 8:04 pm.

THE EVENING PROGRAM: Description of the VMC Club and a presentation of three typical scenarios.

These minutes respectfully submitted by Don Fey.

**PLEASE Take a Moment and Pay
Your 2019 Chapter Dues!**

**Still \$10 - Pay at the Chapter Coffee, at
the Next Chapter Meeting or Mail to Ron
Ehrecke - See the Final Page of this
Newsletter for Ron's Address**

February Coffee at Carver Aviation at the Davenport Airport (Photos-John Riedel)



Civil Air Reserve Fleet (from Richard Lowe)

When the U.S. emerged from WW II, we found ourselves as the only super power in the free world. Other countries, including our European allies, were pretty well beaten into the ground. With that status came the responsibility to respond to several incidents which came up around the world in the last half of the twentieth century. In order to do this, we had to have an ability to rapidly move lots of equipment and large numbers of people anywhere in the world. Eventually, we formed the U.S. Transportation Command which is a joint command.

A joint command is one which includes personnel from more than one branch of our armed forces. The command headquarters is located at Scott AFB near St Louis. The commander wears four stars and may usually be from the Air Force or the Navy. Sub units include the Air Mobility Command (AMC) and the Military Sea Transport Service. (MSTS) The AMC is equipped with the specialized air lifters such as the C-5 and the C-17. Both are able to carry tanks, heavy armored vehicles and large helicopters. It is the fastest way to do it, but not necessarily the most efficient. The Military Sea Transport service has large ships called Roll On-Roll Offs which are like large ferry boats where the equipment is driven on and driven off. Gone are the days of swinging the tanks, one at a time, into the holds of the old Liberty ships. Movement by water is used if response time allows.

To meet the needs of moving lots of people, the Air Mobility Command uses a lot of commercial air carriers under charter rather than tie up its own air lifters thus saving them for movement of special cargo and large vehicles. In order to insure there is enough commercial capacity available for an emergency, the government came to an agreement with the airlines years ago to form the Civil Air Reserve Fleet. This consists of large airliners which are able to fly the oceans. Airlines and charter companies keep on hand, in their fleets, more capacity than they need for their scheduled operations, and the government agrees to charter them when ever they have a large troop move. If needed, the military will get first crack at chartering these planes to move personnel in an emergency. Years ago, some of the CARF was used to move replacements to and from overseas, not just whole units. Today, many of the replacements are moved in blocks of seats purchases by AMC on scheduled flights. Whole unit moves still make use of dedicated charters.

Some charter companies depend almost entirely on military contracts for their business. Names such as Overseas National, Omni, Flying Tigers and World



Airways come to mind. When I was on active duty, I rode on many of the CARF planes. I went to Germany on Seaboard World Airways in 1964 and came home on a Pan Am Clipper in 1967, Then It was off to Vietnam on TWA and home on Northwest. During my tour, I went down to Sydney and back on World Airways. Flying Tigers took me to and from Korea in 1973-74. Two or three times a week, we saw a NWA 707 on the ramp at Osan AFB, bringing in a load of green beans and taking out a load of short timers. Every veteran remembers the day he got on the "Freedom Bird". We were packed in like sardines with every seat filled. The cabin crew was often some of the best on the payroll who bid the flights out of a patriotic duty. I remember one of the TWA hostesses had dozens of donated military crests, jump wings, aviator wings, etc., on her apron. I heard that one of the aprons is in the 1st Cavalry museum at Ft Hood.

We were allowed 100 lbs of baggage each, so the planes always operated at gross weight. We made frequent fuel stops and had to deplane when ever we took on fuel. (MAC regulation) A trip to Korea started at Travis AFB, CA, and stopped in Alaska, Japan and then on to Korea. My trip to RVN was Travis to Hawaii, to Okinawa and into Bien Hoa. Coming home it was Cam Ranh Bay to Japan to McChord AFB, WA. A European trip was usually a non-stop to and from either Charleston, AFB, SC or McGuire AFB, NJ and Rhine-Main AFB near Frankfurt. It seems like we often left at O dark thirty. Maybe they needed the cool air to get the heavy 707's and DC-8's off the runway. As I recall, the food was simple, but always great. Maybe it was because we were always so hungry. The cabin crew almost cried when we unloaded in Bien Hoa. Although they assured us they would be there to meet all of us in a year.

I think they knew that some of us would not be coming home.

From the Golden Age of Aviation: A Barrel-Chested Little Airplane Called the Monocoupe

(from Daniel Murphy)

Preface:

This past summer I flew into the Waterloo, Iowa Airport (Livingston Betsworth Field) and saw a copy of the book “Jonathan Livingston Seagull” sitting out on a table. I was given a copy of this by an English teacher as a teenager. I picked it up to thumb through its pages. Remembering that the book was named after John H. Livingston, a famous aerobatic, racing and Waco Aircraft Company test pilot. I Googled his name when I got home to explore what kinds of airplanes he flew. I was surprised to learn that he flew the Monocoupe while winning many races. Given the connections to the Quad City area I chased down some of the Monocoupe’s history. Factually, the Monocoupe is a famous pylon racing machine.

I hope you enjoy this short account of the Monocoupe’s history.

The Barrel-Chested Little Airplane:

Conceptualized in 1926 by Donald A. Luscombe to take the place of his Curtiss Jenny, the Monocoupe design was revolutionary. (*Donald A. Luscombe would go on to design a second notable aircraft; this one would bear his name “The Luscombe”.*) Unlike other planes of its day, the Monocoupe had an enclosed cabin with seating for two side by side. Luscombe’s colleagues of the time in the Davenport Iowa Flying Club were convinced to put up seed money to fund what would become the Central State Aero Company, Inc. at Wallace Field, Bettendorf, Iowa. As Luscombe was not an engineer, he hired Clayton Folkers, who later became famous for designing race planes in the ‘30s, to design a buildable airplane. From the beginning, the intent was to create a strong, enclosed, fast airplane that would also be cost effective and allow Luscombe to travel in dress clothes while talking with customer passengers. All aircraft for sale at this time were subject to federal certification and required engineering analysis and testing before an approved type certificate (ATC) would be granted. Passing a review by a degreed engineer, the early Monocoupe (Mono 22 – ATC #22) was the first monoplane of its class to be issued an ATC.

Remarkable Performance:

With a range of 400 miles and utilizing a 60 hp Anzani radial, it reached a top speed of 80 mph. In addition, the Monocoupe sported great visibility, was fast, and a responsive airplane to fly. Early variants were produced with 55 -75 hp engines. While successful,



Model 22 Central State Monocoupe, Photo attributed to copyright holder “Aeronautical Digest Publishing Corp” - Attribution: Reproduced from Aero Digest Magazine

early engine problems forced continuous trials with alternative power plants. The A V-5 radial produced by Velie Automotive provided reliable performance and, with Willard Velie’s capital, Central State Aero Company moved to Moline in 1928 as the Mono Aircraft Corp.

According to the EAA AirVenture Museum, by 1929, an estimated 10% of the licensed U.S. aircraft were Monocoupes. Even through the 1929 depression, the Monocoupe’s reputation of affordability, reliability, speed and rugged construction kept sales moving. One very popular variant was the Monocoupe 90 that had a Lambert 90 hp radial and earned the Monocoupe recognition as a high performance airplane at a price that the flying public could afford. It also propelled the Monocoupe in the ‘20s and ‘30s into pylon racing.



Monocoupe 90A, Photographer unknown, Photo courtesy of FlugKer12, Wikimedia Commons, free media repository.

A variant of the Monocoupe 110 was fitted with a 145 -hp Warner Scarb radial, a 32 foot wing span and at, 23 feet in length, would reach speeds of 200 mph.

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From the Golden Age of Aviation: A Barrel-Chested Little Airplane Called the Monocoupe

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Johnny Livingston of Waterloo, Iowa, was one of the Midwest's most famous air racer and acrobatic pilots. In 1930, Livingston took possession of a Moline factory built stock long wing Monocoupe 110 (NC501 W, s/n 533). He flew NC501 W over the next few years winning an impressive number of air races often outperforming racers with twice and, sometimes, three times the horsepower.



Monocoupe 110 Special N36Y "Little Butch" at the National Air & Space Museum, Washington DC, Photographer unknown, *Photo courtesy of RuthAS, Wikimedia Commons, free media repository.*

Monocoupe's Many Homes:

While Monocoupe production fell in and out of receivership, it emerged and moved with its purchasing companies. Reorganizations included:

- 1928: Reorganization of Central States Aircraft Co as the Mono-Aircraft Corp, Moline, Ill. (D. A. Luscombe, president - production leaves Wallace Field, Bettendorf, Iowa.)
- 1930: Incorporates as Mono Aircraft, a Division of Allied Aviation Industries Inc. (W. L. Velie, president)
- 1931: Reorganized as Monocoupe Corp/Lambert Engine & Machine Corp, Lambert Field, St Louis, Mo.
- 1932: Purchase of company by Phil Ball (owner of St Louis Browns baseball team) after the death of Velie.
- 1933: Don Luscombe leaves to form his own company.
- 1940: Name changes to Monocoupe Aeroplane & Engine Sales Corp.
- 1941: Reorganizes as a division of Universal

Molded Products, Orlando, Fla.

1946: Monocoupe Airplane & Engine Corp acquired and renamed Monocoupe Aircraft of Florida (R. Sessler president), Melbourne, Fla.

1992: Reorganized as Mono Aircraft Inc. in Cheney, Kan.

Reportedly in the '90s then sold to Saturn Aircraft & Engineering of Oxnard, California, who manufactured the Acrobatic 110 Special powered by a modern 200- hp flat-four engine manufactured by Aviat in Afton, Wyo..

Examples of original Monocoupes hang in museums and airports including the Peoria Ill. Airport, St. Louis Airport, Smithsonian National Air and Space Museum and Moline, Ill. Airport.

Acknowledgements:

Author Unknown, on EAA Museum, Collections, "1928 Monocoupe 114 - N7808" Location: Pioneers of Flight website, 2018, online at: <https://www.eaa.org/en/eaamuseum/museum-collection/aircraft-collection-folder/1928-monocoupe-113---n7808> (general history and sales numbers)

Harris Richard, Monocoupe: Speed for the Common Man, American Aviation Historical Society Journal, Winter 2011 (with detailed history of the Monocoupe's design, variants, manufacturing and continuing societies)

Author Unknown, on Aerofiles, "Mono, Monocoupe" online at: <http://www.aerofiles.com/mono.html>, (with detailed history of ownership)

Book Review – A History of Aircraft Piston Engines (from Dennis Crispin)

A friend was cleaning out the attic and came across a rather unusual book. Such things have a way of finding their way to me.

A History of Aircraft Piston Engines is a rather large volume first published in 1981. The third printing of the corrected paperback edition was in 1991 at the Sunflower University Press.

Herschel Smith, the author, states that he waited for years for someone to write this book, then decided to write it himself.

The book is well written and an easy read, especially for subject matter that is potentially a lot less than exciting. It is well illustrated with photos and detailed

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Book Review – A History of Aircraft Piston Engines

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cutaway drawings. There are sketches to show engineering details. There is a wealth of information on the application of the many engines and the problems encountered in manufacture. Extensive tables detail the data on almost every piston aircraft engine ever built. It must have taken a great amount of time and effort to compile this information. It will be a great resource for anyone researching older aircraft.

If you have any interest and/or knowledge of aircraft from the antique and classic eras, you will find this book quite fascinating.

The book points out that the successes of airframes and engines were intertwined. Great aircraft like the J3 Cub and the DC-3 were only possible because their designs coincided with the development of compatible engines. Conversely there were some potentially good aircraft and some fine engines that were not successful because their timing was wrong and the right motor or airframe was not, at the time, available. Lindbergh's Atlantic flight came about only because of the then new Whirlwind engine – the only engine with the reliability needed for extended hours of operation.

In the early days of aviation, American technology lagged far behind that of Europe. Going into WW-1, the US had only two engines suitable for extended production. Both were already a bit behind the development curve. The OX-5 was a water-cooled V-8 that powered the famous "Jenny" trainer. The engine was so primitive that you had to lube the rocker arms with an oil can during preflight. The larger "Liberty" engine was intended to be built in inline 4- & 6-cylinder versions as well as V-8 and V-12 layouts. The 4 and 6 never made it beyond the development stage and the V-8 was discontinued after a short production run. Many thousands of the V-12 engines were built by Packard, Ford and Lincoln with just a few manufactured by General Motors. The Liberty engine had the best power to weight ratio of its time.

After WW-1 the development of new powerplants was hampered by the vast number of OX-5 and Liberty engines available on the surplus market. However, the presence of cheap engines inspired the creation of many new airframe designs.

WW-1 in Europe saw the development of many different types of aero engines. The most interesting ones were the rotaries, a radial design, usually five cylinders, where the crankshaft was bolted firmly to the firewall and the entire engine spun around with



This beautifully preserved Curtiss OX-5 is in the collection of the Kansas Aviation Museum at Wichita.

Type: 8-cylinder water-cooled 90-degree Vee piston engine

National origin: United States

Manufacturer: Curtiss Aeroplane and Motor Company

First run: 1915

Number built: 12,600

Bore: 4.0 inch

Stroke: 5.0 inch

Displacement: 503 cu.in.

Dry weight: 390 lb.

Power output: 90 hp. At 1,400 rpm

Fuel consumption: 8 gal./hr. At 75% power

Oil consumption: 0.5 gal./hr. at 75% power

Power to weight ratio: 0.27 hp/lb

the prop attached. The rotaries were comparatively light and powerful but had some distinct problems. The spinning mass of the engine created gyroscopic forces that made the plane difficult to turn in one direction. The motors were lubricated with castor oil which had an unfortunate laxative effect on the pilot who sat breathing the oil spray and fumes that came off the engine. The engines were difficult to start and were primed to a flooded condition. Often the engine belched out a bunch of burning fuel onto the ground under the prop. Whereupon the ground crew would simply pull the plane back and let the fire burn itself out. There was no way to throttle the rotary, so it ran at full power all the time. There was a "blip switch" in the cockpit which would momentarily short out the ignition to reduce power for landing. The unburnt fuel would then ignite in the exhaust stacks. Landings must have been exciting with a ring of fire encircling the engine. The hazards of flying these airplanes were far more than just the risks of combat.

In the years between WW-1 and WW-2, the piston aero engine underwent a great development. Many of the refinements, like turbocharging and fuel injection would not find their way onto automobile engines for

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Book Review – A History of Aircraft Piston Engines

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another fifty years.

Inline aircraft engines were built in 2, 4, 6 & 8-cylinder editions with V-8, V-12 & V-16 variants. The fine radial engines came as 3, 5, 7 & 9-cylinder models then expanded into “two bank” layouts of 10, 14 or 18 cylinders. A few were of “one piece” construction, but most used individual cylinders. One manufacturer built 4, 6, V-8 & V-12 inline and 5,7& 9 radials all using the same cylinder assembly. All the different formats were tried in both water-cooled and air-cooled variants. Several successful designs, needing speed reduction, drove the output from the camshaft instead of the crankshaft.

The small production numbers of aircraft engines allowed the builders to try some rather exotic engineering. Several designs used sleeve valves, which allowed the engine to produce more power and have greater fuel efficiency than that afforded by the common poppet valves. A few tried eliminating the crankshaft by using a barrel cam or wobble plate to transfer the linear motion of the pistons to the rotation of the output shaft. The opposed piston engine, with 6 cylinders, 12 pistons and two crankshafts found several successful applications.

Of course, there were many more failures than successes in the world of aero engine development. In a few cases an engine was put into production just to become an “orphan” when the aircraft it was intended for was canceled. An example of this is the inverted, air cooled, V-12 Ranger which disappeared into the surplus market and no one ever found a good use for it.

Packard developed a fine V-12 liquid cooled aero engine but found no one to buy it. It was modified for marine use and used, in pairs, to power the PT boats. The diesel engine had some success in aircraft use. In Germany, several large transports used diesel power where the added weight of the engine was more than offset by the lesser weight of the fuel needed for long flights. When faster aircraft like the DC-3 came along the diesel went out of style because it didn't have the excess power needed for takeoff with the higher wing loading. The last of the great Zeppelin airships used large, slow turning diesel engines.

The frontispiece of the book is a detailed cutaway drawing of The Napier Nomad engine. It is a geared, 12 cylinder, horizontally opposed, valveless, 2

-cycle, turbocharged, turbocompound, diesel. Try wrapping your mind around all that. The engine was claimed to produce 1,952 shaft horsepower.

By WW-2 most manufacturers had standardized on 5, 7, 9, 14 & 18-cylinder radials with just a few liquid cooled V-12 & V-16 types. It is an interesting note that most of the aero engines used by Germany, Japan, and Russia in WW-2 were copies or developments of designs licensed or stolen from U.S. or British manufacturers.

Many American design engines were licensed for manufacture in England, France, Italy, Spain, Germany Japan and such unlikely places as Poland, Czechoslovakia and Pakistan. Many of the off-shore efforts were hampered with the inability to control the quality of the product and the lack of appropriate materials. Several European designs found a production home in the U.S.

The most well-known was the Packard Motor Company building the Rolls-Royce Merlin. Most of the Merlin engines for the British Lancaster bomber, as well as those for the famous U.S. P-51 Mustang fighter, were built at Packard.

During WW-2 the government commissioned Allison, Pratt & Whitney, Chrysler and Studebaker to develop some extremely large engines. None of them were ever put into production because no one ever built an air frame suitable for such big piston powerplants. Allison produced a prototype 32 cylinder “W” engine that was basically two V-16s joined at the crankcase. Pratt & Whitney developed a 36 cylinder 4 row radial “corn cob” engine that produced 5,000 horsepower in test. Development stopped before the engine was taken to the projected 7,000 horsepower. One example of this engine still exists, in a crate, at the Smithsonian's Beacon Hill facility. The biggest engine was to be the one designed by Studebaker. The project was canceled while still on the drawing board when research showed that the cylinders were too big for effective flame propagation.

After WW-2 the big radial engines had a brief heyday in the first ocean hopping airliners like the DC-6 & 7, Constellation and Stratocruiser and military applications like the B-36, B-50 and KC-97. Then, the large piston powerplant disappeared into the dustbin of history as the turbine came onto the scene.

Light aircraft engines became standardized on air cooled, horizontally opposed, 4 & 6-cylinder designs and have been unchanged in basic design (but with considerable refinement) for 75 years.

EAA Chapter 75 Congratulates Our Newest Private Pilot

Ed Leahy passed his flight check ride a few weeks ago. Congratulations Ed!!



Flying to Breakfast to KMUT



w/ Tom Shelton, Tim Toal & Craig Olson

Chapter 75 Flight Instructors

Per a member request, am including a listing of Chapter 75 members that are flight instructors and would be willing to help with primary flight instruction, your next BFR or other. *If you are a Chapter member and a flight instructor please let me know and will include your name in the listing. Additions/Corrections are welcome!*

CFI / CFII	Phone	New Students	CFII	BFR	IFP	Airports	Plane
Mike Nass	563-357-6068	No, Booked	Yes	Yes	Yes	CWI	Owners Plane
Tim Leinbach	309-781-9585	Yes	Yes	Yes	Yes	DVN MLI	Owners, FBO, Club Plane
Tim Toal	309-235-0087	Yes	Yes	Yes	Yes	DVN MLI	Owners
Barry Logan	309-303-0211	Yes		Yes		C75	Owners, Club Plane
eMail - Marty Santic to add your Name to the list							

EAA AIRVENTURE OSHKOSH 2019 CELEBRATES 50TH ANNIVERSARY OF BOEING 747 JUMBO JET

The 50th anniversary of the Boeing 747, the iconic wide-body jetliner that has carried everything from heads of state to the space shuttle, will be celebrated at EAA AirVenture Oshkosh 2019. The 67th annual Experimental Aircraft Association fly-in convention is July 22-28 at Wittman Regional Airport in Oshkosh, Wisconsin.

It is expected that several Boeing 747s will make an appearance at AirVenture during the week, with fly-bys and displays on AirVenture's showcase Boeing Plaza. It will extend a legacy of the airplane's appearances at Oshkosh that include jumbo jets from as far away as Australia, New Zealand, and Iceland in past years.

"There is probably no modern commercial airliner that is as well-known as the Boeing 747, with its distinctive hump at the front of the fuselage," said Rick Larsen, who coordinates AirVenture features and attractions. "For a half-century, the 747 has allowed people to reach destinations around the world in ways that were unimagined when commercial air travel began more than 80 years ago."



EAA Chapter 75 IMC Club
 "To promote instrument flying, proficiency, and safety"
<http://eaa.org/imclub>

Meets First Tuesday of each month at 18:00
 Lindquist Ford, 3950 Middle Rd., Bettendorf, IA

For more information contact:
 Paul A. Fisher - rv7a.n18pf@gmail.com
 Bernie Nitz - bernien@visioncrest.com
 Ron Franck - ronaldfranck1@gmail.com

Local Calendar of Events

For many other Aviation Related events, visit the following websites. Click on the following links. Will only list events submitted to the editor and other most local events here.

[EAA Aviation Calendar of Events](#)
[AOPA Calendar of Events](#)
[Iowa DOT Office of Aviation Calendar](#)
[Wisconsin Fly-Ins and Airshow Event Calendar](#)
[Fly-Ins.com Calendar Website](#)
[Fun Places to Fly Website](#)
[Social Flight Calendar](#)
[Midwest Flyer Magazine Calendar](#)

Upcoming EAA Webinars

Go to www.eaa.org/webinars to view the schedule and to register.

An IA's Dilemma
Wednesday, March 6 at 8 p.m. CST
Presenter: Mike Busch

First Flight, No Fright: All About Discovery Flights and Introductory Lessons
Wednesday, March 13 at 7 p.m. CST
Presenter: Prof. H. Paul Shuch

Temporary Flight Restrictions, Airspace, and ADS-B
Wednesday, March 20 at 7 p.m. CST
Presenter: John Townsley

Avoiding Stalls and Spins
Tuesday, March 26 at 7 p.m. CST
Presenter: Gordon Penner

Send event information on those activities that would interest the membership. Will be delighted to include any information on aviation related activities, fly-in breakfasts, etc. e-Mail your information to marty.santic@gmail.com

Classified Ads

DAR Services: Amateur Built/Light Sport Airworthiness Certification Inspections, Ferry Permits (Certified and Experimental), Replace lost/damaged Airworthiness Certificates (Certified and Experimental). Call Ross Carbiener (A&P) at 309-738-9391.

Hangars Available: At the Davenport Airport!! Call Tom Vesalga at 563-326-7783.

For Sale: One share in the Four Seven Jays Flying Club. The club plane is an extremely well maintained 180HP 1973 Cessna 172M hangared at MLI. IFR equipped. Paint and interior new 2003. The following avionics were installed in 2010: Garmin GMA-340 Audio Panel/ICS/Marker, Garmin GNS-430W WAAS GPS/Garmin GI-106A CDI, Garmin 496 GPS, panel mounted, coupled to 430, Garmin GTX37 Transponder. Dan Murphy 309-752-3887, Ron Ehrecke 309-236-9785, or Ralph Stephenson 309-737-6902.

Want to RENT - Safety minded, conscientious, courteous, congenial 500 hour IFR and complex rated pilot is looking to rent a plane 20-30 hours a year; no weekends, only on weekdays. Would prefer an Arrow or similar type (all my hours are in Pipers), but

would be amenable to discussing other options. Mike Van Dyke 563-209-7752 mikel@cmeflow.com

WANTED: LongEze or Varieze project that needs a new home. Derelicts are also welcomed. Thanks in advance for your kind gesture. Contact Sam Ajayi at the North Little Rock Airport at soajay@hotmail.com

Hangar Space at Erie: Need hangar space? I have some ready to rent. \$100.00 a month 24 x 36 x 8 ft tall. These are private enclosed hangars. Electric. Hangar door and rear pass door. Club house privileges included, Fridge, refreshments, coffee, microwave, shower, and rest room. 89 fuel on site. Call Jim Robinson, at Erie Airpark. 3H5. 309 230 0944.

NEW For Sale: Bose A20 headset with Bluetooth \$750.00, One Telex ANR headset \$150.00, One Bendix KX99 handheld \$75.00, One Sporty's SP-200 handheld \$75.00 Offers considered. Call Rich Qualmann 309-235-9545

Have Anything to Sell? Will be more than Happy to List It Here!!

To place an ad: Submit requests for aviation related For Sale or Want ads to the newsletter editor. Ads are free to Chapter 75 members. Ads from nonmembers will be run on a space available basis. Ads will be run / re-run at the newsletter Editor discretion. If we run out of room, will make some more!!

Chapter 75 Merchandise Now Available

(from Marty Santic)

As mentioned at the meetings, baseball caps are now available with the new Chapter 75 logo.

The caps are of nice quality and the logo is embroidered, not printed. The caps are available for \$10 and are available now! Let me know and I can bring a cap to the chapter meeting or coffee.

I will ship in a Priority Mail package for an additional \$5.00, if you cannot make one of the meetings. The normal price from Vistaprint.com is \$16. I ordered 30 and received a discount.

If you would like a cap, please send me an e-mail. marty.santic@gmail.com If you would like me to ship, send a \$15 check to Marty Santic, 3920 E. 59th St., Davenport, IA 52807 (Still have a few left, then the chapter is undecided if we will order more.).



Baseball Cap in Light Khaki

Chapter Website: www.eaa75.com
 Facebook: <https://www.facebook.com/EAA75/>

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(Effective January 2019)

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Fly-Out Coordinator - ??
OPEN Position - Need a Volunteer! You can work with John Bender in Waterloo!

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**Always Remember.....
The Time Spent Flying is NOT Deducted
from Your Lifetime!**

Chapter Website
www.eaa75.com

QUAD CITIES CHAPTER 75 MEMBERSHIP APPLICATION/RENEWAL FORM

<p>New Member <input type="checkbox"/></p> <p>Renewal <input type="checkbox"/></p> <p>Info Change <input type="checkbox"/></p> <p>Membership dues for EAA Quad Cities Chapter 75 are \$10/year.</p> <p>Make checks payable to EAA Chapter 75</p> <p>Mail application/renewal to: Ron Ehrecke - EAA Chapter 75 1597 Deer Wood Dr Bettendorf, IA 52722</p> <p>National EAA offices: Experimental Aircraft Association EAA Aviation Center PO Box 3086 Oshkosh, WI 54903-3086 http://www.eaa.org</p> <p>National EAA Membership: 1-800-JOIN-EAA (564-6322) Phone (920) 426-4800 Fax: (920) 426-6761 http://www.eaa.org/membership</p>	<p>Name: _____</p> <p>Copilot (spouse, friend, other): _____</p> <p>Address: _____</p> <p>City: _____ State: _____ Zip: _____</p> <p>Phone (Home): _____ (Work): _____ (Cell): _____</p> <p>Email Address: _____</p> <p>EAA#: _____ Exp Date: _____</p> <p>Pilot/A&P Ratings: _____</p> <p>Occupation: _____ Hobbies: _____</p> <p>I am interested in helping with: _____</p> <p>_____</p> <p>_____</p> <p><input type="checkbox"/> Tool Committee <input type="checkbox"/> Tech Advisor <input type="checkbox"/> Flight Advisor</p> <p><input type="checkbox"/> Repair Barn <input type="checkbox"/> Young Eagles <input type="checkbox"/> Social/Flying</p> <p><input type="checkbox"/> Hospitality <input type="checkbox"/> Board Member <input type="checkbox"/> Newsletter</p> <p>What are You Building? _____</p> <p>What are You Flying? _____</p> <p>_____</p>
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