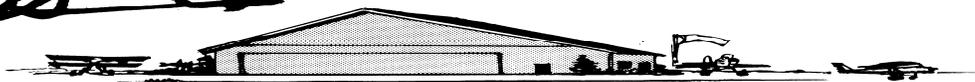


CHAPTER 55 EXPERIMENTAL AIRCRAFT ASSOCIATION

SEPTEMBER 2012



Meetings are the 2nd Saturday of each Month

EAA Chapter 55 Hangar-Mason Jewett Airport-643 Aviation Drive, PO Box 443, Mason, MI 48854

Pres: Ken Vandenbelt 589-5051 Vice Pres: Joe Madziar 676-4341 Treas: Al Spalding 676-3370

Secr: Jack Voss 708-7079 Editor: Warren Miller 214-2656 (all Area Code 517) www.EAA55.org



Climb and Maintain Flight Level 55

This past month was a very busy one. Unfortunately, the weather took its toll on our August Young Eagles Rally due to low ceilings and rain. But, all was not lost.

Terry Lutz was on hand and he was able to do a great impromptu presentation about the A380 testing program.

Another Mason Aviation Day is behind us once again. What can I say. The weather was perfect. We had airplanes everywhere. The ride planes and the helicopter were busy, the food lines were steady. The people attending were having a good time. Dan Schiffer did a great job with the public address and many folks stopped by to compliment the information that Dan was providing. I'm hopeful that the "bad weather curse" has finally been put to rest (knock on wood).

Many thanks to all the workers who made the event fantastic - good job!!

**Board of Directors Meeting
September 5, 2012, 7:00 pm
Chapter Membership Meeting
September 8, 2012
Breakfast 8-9 Meeting 9:30 am**

And, I was thrilled to be able to accompany Dan and the other T-6s on the flyover at MIS. That really made my day - Thanks alot, Dan.

Many THANKS to Joe & Cecile Pirch for hosting our Labor Day weekend potluck. They provided the fried turkey dinner and it was OUTSTANDING with all the food that folks brought. The only complaint heard was from eating too much !!

We need a Nominating Committee to canvas members for the Directors election to take place in November. Paula Corsi has stepped up as the first but we need two other members to assist her. Would you consider volunteering for the Nominating Committee? Would you consider being a Director?

On a sad note, the world received news that Neil Armstrong (EAA#301581) passed away in August. Mr. Armstrong had a remarkable career and was a hero to aviators around the world.

Share the passion,
Ken Vandenbelt, President

Breakfast Teams

<u>September</u>	<u>October</u>
Dick Bacon	Rosemary Duckworth
Barb Bacon	Fred Honhart
Ron Goodnoe	Greg Hover
Mike Franzago	John Karlen
Ernie Lutz	Terry Lutz
Mike Lutz	Roger Reeve
Ronald Pearce	Drew Sequin
	Connie Stewart
	Craig Tucker



July Breakfast Team: Gary Bauer and Paula Corsi



August Breakfast Team: Pete Chestnut, Greg Rheeder, Bruce VanFarowe and Bruce Thorburn.

EAA Chapter 55

Board of Directors Meeting, August 8, 2012

Called to order 7:00 pm. Present: Ken Vandenberg, Al Spalding, Bill Purosky, Steve Houghton, Jack Voss, Joe Madziar, Dave James, Vickie Vandenberg, and Jim Spry. Absent: Ed Search and Warren Miller. Guests Margie & Bob Clark. ** ** Committee & Other reports: Young Eagles (YE) – Bill Purosky reported that we have pilots and aircraft available. ** ** Membership – Vickie Vandenberg reported about one, new, student member. ** Fly Outs – Posters are in the Chapter Room on the N'ly wall. ** Programs – Vickie reported that this month is YE. In October, is Tom Krashen from MDOT speaking about “Legal – But safe?”, and maybe the new Pilots' Bill of Rights. ** YE Updates – Bill Purosky reported that \$250 we had donated for candidates at the Academy had been declined and returned. ** ** Old Business: LCC construction : Let's keep our eyes open for construction activity and trenches for water & power lines. It is scheduled to start after the Mason Aviation Day (MAD). ** RC flights at MAD: they declined. ** YE: Food is stocked, and we always welcome volunteers. ** YE Credits: We have \$965 in credits, and \$167 expenses, so far. New tables, discussion of these was tabled until October (no pun intended, but there anyway). ** ** New Business: Nominating Committee – we will need one to help select candidates to serve as directors. The election is in November. ** Our property insurance renewal has been paid. ** Filing fee with the State of Michigan for non-profit was \$20. ** ** Adjourned 7:30 pm. ** ** Respectfully submitted, Jack Voss.

EAA Chapter 55, General Membership Meeting, August 11, 2012

** ** Called to order at 09:15 by Ken Vandenberg. ** National Anthem ** “Thank you!” to the breakfast team (applause, and a couple of cheers). ** ** Next month's breakfast team is: Dick and Barb Bacon, Ron Goodnoe, Mike Franzaga, Ernie and Mike Luts, & Ron Pearce. ** ** I counted 32 members and 6 guests. Some guests were already EAA members in other chapters. WELCOME! ** ** Secretary's report was referenced and accepted. ** Treasurer's report was read and accepted. ** We have a nominating committee to select candidates for election to directorship at the annual meeting. ** Young Eagles (YE) was a weather cancellation. ** Dan Schiffer announced the EAA Adult Eagle program that kicked off at Oshkosh. This is for adults who are interested in aviation and want to take flying lessons. It isn't to just give someone a ride. The same insurance program that applies to YE applies to this program as well. ** An event planning meeting for Mason Aviation day (MAD) is set for Wednesday, 15 August at 7:00 pm. ** MAD set up on Friday, starting at 1:00 pm. ** MAD sign up sheet. We need volunteers. ** At our September meeting, Tom Krashen will speak on “Legal – But Safe?”. And, hopefully, he can enlighten us on the recent “Pilots' Bill of Rights”. ** Adjourned at 09:48. ** Respectfully submitted, Jack Voss Doing what you like is **FREEDOM**. Liking what you do is **HAPPINESS**



TIDBITS

By Vickie Vandenberg

JACK TOMAN'S KITFOX: Jack sold his Kitfox to Dan Steffen of Crosslake MN. Jack had several conversations with Dan, who informed him that he just loved the plane. Subsequently, Jack received news that Dan Steffen was killed when the small plane went down on Upper Whitefish Lake on 7/22/12. Copies of the articles Jack brought in are posted on the board.

WINGTIPS ON THE WEBSITE: Our newsletters are now open to viewing by anyone who accesses our website. They are located under the INFORMATION tab.

NOMINATIONS FOR OFFICERS: Chapter 55 is seeking nominations for Directors. It is the duty of the Chapter Board of Directors to conduct and control the business and property of the chapter. Directors are required to attend the meetings of the Board which are held at 7:00pm on the Wednesday immediately preceding the second Saturday of each month. Meetings generally last one-two hours depending upon the amount of business. The nominations will be presented to the membership at the October meeting & posted on the bulletin board. Elections will take place at the November meeting. Our chapter Secretary, Jack Voss, will develop and implement a process that will offer absent eligible voting membership opportunity to vote by proxy, if necessary. All newly elected Directors shall assume their responsibilities at the December Chapter membership meeting. Paula Corsi has agreed to be on the nomination committee and we are looking for two other members to work with her. If there is a member that you feel would be a good candidate for Director, please encourage him/her to be nominated. If you would be interested in serving your Chapter, contact Paula or any board member.

LOST & FOUND: We have a collection of glasses, sunscreen, & other items plus four jackets that have been left behind after MAD and meetings. Are you missing anything?

RETIRE OLD FLAGS WITH DIGNITY:

The Browne/Cavender American Legion Post 148 of Mason has installed a refurbished old mail drop box on the north side of the Mason Historical Museum at the corner of Barnes & Oak Street for people to drop off their faded and tattered American flags. The Legion will retire the flags with dignity at a special ceremony. If you leave them at the Chapter, I will see that they get to the drop box also.

EAA EAGLE FLIGHTS: EAA has launched the new Eagle Flights program to spur adult interest in aviation. Many pilots currently take family, friends, co-workers and/or meeting guests for flights. And, we often get inquiries about how to get started in flying. This program involves in depth mentoring and follow thru with participants. National is asking for a goal of 10 Adult Eagles per year. Chapter 55 is very proud of our Young Eagle (YE) numbers and this program could become equally important.

Would you be willing to do the registration paperwork and mentor your "Eagles"? If so, I can resend you the FAQs email

and you can request your Pilot Guidelines & Registration Packet. So far, Deanna McAlister, Dan Schiffer & Ken Vandenberg have expressed interest.

SENT TO ME BY FROM RICK ANDERSON OF THE FAA:

FAA Safety Team: Safer Skies Through Education
Maintenance Safety Tip Notice Number: NOTC4046

Who Do You Trust?

According to Webster's, trust is the "firm" belief or confidence in the honesty, reliability, justice, etc., of another person or thing. When it comes to maintenance and inspections, a question you should ask yourself is, "Do I trust or have confidence that the previous maintenance or inspection was properly done?" Sadly, too many problems and accidents prove otherwise.

When removing and replacing a component, don't "trust" that it was properly installed previously. This is especially true if a component requires bench tests, clearance or tolerance checks prior to installation. READ, UNDERSTAND, and FOLLOW the manufacturer's instructions and other Instructions for Continued Airworthiness (ICA) rather than installing as previously installed. We are human and as hard as we try, we all make mistakes.

When it comes to inspections, carefully and thoroughly inspect every item required by the manufacturer's inspection checklist rather than being pressured to take shortcuts or cut corners. Do you have the firm belief or confidence that all the covers and panels were opened and/or removed and areas behind insulation properly inspected during previous inspections? The truth is, you don't know for sure! Here is a hypothetical example: Someone replaced missing upholstery screws in an interior side panel. It should be documented...but it might not be. Nevertheless, was the screw too long and is it now chaffing against a fluid line, hose, or electrical wire behind that panel? You don't know unless you inspect. The "firm" belief or confidence in reliability comes only after YOU have performed maintenance and inspections per manufacturer's instructions and data.

Back in the '80s, Ronald Reagan had a phrase he used when dealing with the old Soviet Union: "Trust, but Verify." Good advice for all of us!

KEY CHAPTER EMAILS:

President: ken@eaa55.org
Vice President: joe@eaa55.org
Secretary: jack@eaa55.org
Treasurer: al_spalding@eaa55.org
Newsletter: warren@eaa55.org
Membership: vickie@eaa55.org
Webmaster: craig@eaa55.org
Young Eagles: phil@eaa55.org

Contact info for other members; phone numbers etc. are available in the Members List available on the chapter website.

MASON AVIATION DAY

What a great day we had!! The weather was just right - not too hot, not too windy, no fog or low ceilings !!

I would like to personally thank all the members who came out to Mason Aviation Day to volunteer their time to make our event a success. I especially thank our core group of Event Planners who spent countless hours with pre-event planning and tasks: Bob & Margie Clark; Doug Koons; Joe Madziar; Bill Purosky; Al Spalding; & Ken Vandenberg. And our Team Leaders who spent the better part of event day in the cafeteria or out on the field: Margie Clark, Dave Cook, Doug Koons, Joe Madziar, Karen Meirndorf, Warren Miller, Bill Purosky, Al Spalding, & Ken Vandenberg. And many thanks to the great group of "grunts" who helped do the set up on Friday and the tear down late Saturday (by 5:30 no one could tell there had even been an event on the field). And, Dan Schiffer as our public address speaker was outstanding!! What an asset and informational spokesperson Dan is for our group. Dan also orchestrated the T-6 group fly-out from Mason.

One problem we do have is having enough volunteers to staff the event all day. This year we were lucky to have so many boy scouts and a great group from the Civil Air Patrol willing to help. But, we need to get younger folks involved in the Chapter. And I don't necessary mean just the 18-30 crowd. We also need the 30-40; 40-50; and 50-60 groups. As I look around our core group, you have to admit (and I hate admitting it & I hope I don't offend anyone) but it's been a few years since the majority of us saw 50. And, for me, it's gets harder and harder to go full steam for the whole day. Maybe the Adult Eagle program will help us to foster and mentor the involvement of younger folks.

I know one of the first questions we will be asked is "Did we make any money?" In the 5+ years that I have been tracking our expenditures, we have never "lost" money on our events when looking at the annual numbers. We may not have made money on a specific event - but non-perishable supplies hold over to our monthly breakfasts, our snack sales, our MDOT seminars, our YE lunch foods, etc. This year, we had good weather for both our DP and MAD so the numbers should be good. And, donations go directly to our Newberry Aviation Scholarship Fund which are over and above our income and expenses.

For me, our events are a labor of love; an opportunity to share our passion for aviation - getting people out to experience a helicopter ride, putting kids into their first airplane ride, answering questions about getting involved in aviation. I think people enjoy the opportunity we provide. We had the CRAA fire truck on display. The Capital Area Radio Drone Squadron, AOPA rep, LCC Maintenance school and the Marine Corp. set up booths to meet with folks. Parking is free, admission is free, food prices are reasonable - and being able to see so many types of airplanes up close, flying in and flying out of the airport, and being able to talk us aviators is priceless !

We served 478 breakfasts and 317 steak/sandwich lunches. We had 84 pilots sign the airport register and I am sure that several did not stop by. We hope that a good many of those pilots also supported our airport with fuel purchases.

It was very rewarding to hear our visitors say how much they enjoyed the event. I hope you enjoyed the day as much as I did.

Thank you, again, for all your efforts. Give yourself a well deserved pat on the back!

Sincerely,
Vickie Vandenbelt

EAA55 - MAD SPONSORS

Chapter 55 owes a big "thank you" to the following local sponsors who made generous donations to our EMU - Newberry Aviation Scholarship Fund: **McLaren Health Care** (formerly Ingham Regional Medical Center); **AOPA** (Aircraft Owners & Pilots Assn); **QoE Consulting** - Lansing, MI.

We also thank the following for contribution of items for our use or for the attending pilots: **Capital Region International Airport FLYLANSING.COM**; **Aircraft Spruce & Specialty Company**; **Dart Container Corp**; **Great Lakes Air Ventures** - Charlotte, MI; **G. Pinnell, MD** - Michigan Aviation Medical Examiners; **Piper McCredie Agency, Inc.** - Flint, MI; **Trade-A-Plane Magazine**; **Wag-Aero Group**; & **Wicks Aircraft Supply**

When taking care of your personal needs, think of these folks and please thank them for their contributions to the success of our event.

YOUNG EAGLES

By Phil Tartalone



Although we were rained out in August, our Young Eagles flight tally keeps growing. Our pilots pitched in to give rides on Mason Aviation Day to some of the kids who were disappointed by the rain at our August rally. Ernie Lutz flew six, Bob Clark flew nine, and Pat Salow flew an additional three. Currently, our 2012 total is at 127.

Because of our summer activities, individual totals are becoming impressive. Ernie broke 400 kids flown in July and Pat Salow reached 50 kids flown in August (not bad for one at a time). But, the most suspenseful of all is watching to see if Doug Koons is going to top 300 this summer. Doug is currently sitting at 293. I think that he'll make it.



NOTES FROM CAPE JUBY

By Terry L. Lutz
Chapter 55 Flight Advisor

The desert sands of Arabia, from Cairo to the Persian Gulf, have always held a certain fascination. People live there, but how do they live? How do they handle the mid-day heat of the desert? What is their source of food and water? How do they travel? I suppose it doesn't help that I am reading the biography of Lawrence of Arabia. So put on the sound track from the movie of the same name, because we are about to take trip to the heart of the Arab world.



As you may be aware, we are testing a new engine. It's the Rolls Royce Trent XWB, which will power a new airplane, the A350, due to fly next year. A technique for risk reduction and flight qualification of new hardware is to rigorously test new systems. For the Trent XWB, we have built the exact engine pylon, hydraulic system, fuel system, and engine cowl that will be used on the A350. When mounted on the number 2 position of the prototype A380, we create a Flying Test Bed, or FTB.



First flown in February of this year, we have completed 125 hours of flight testing with 2 development versions of the Trent XWB. Testing to date has been very successful, and it was time to stress the engine to the upper limit of external temperature. The current mid-day temperature in Al Ain, United Arab Emirates, is 44C, or about 112F. Combined with low humidity, it was exactly the environment we were searching for.

Al Ain is located along the border between the UAE and Oman. It is roughly 100 miles from either Dubai or Abu Dhabi, which are modern cities on the edge of the Persian Gulf. The UAE is the combination of seven absolute monarchies. The Emir of Abu Dhabi (the region, not the city) is the largest landholder, and is President of the UAE. The significance of Al Ain to the UAE is that the President lives there, along with the royal family. As a result, Al Ain is a green jewel in the middle of a hot and sandy region of Arabia.

Our flight from Toulouse to Al Ain took us across the Mediterranean Sea and directly over Mt. Aetna on the island of Sicily. We crossed the Med and skimmed the northern coast of Africa until reaching Alexandria, Egypt. Turning more to the south to avoid the conflict raging in Syria, we crossed the Red

Sea at the southern tip of the Sinai Peninsula with a clear view of the Nile River, Gulf of Suez, and the Gulf of Aqaba.

Switching to Riyadh Control, it took nearly two hours to cross the desert region of Saudi Arabia. While the country appears bleak and barren from high altitude, there is ample evidence that people live there. The desert is comprised of small mountain ranges, sandy desert regions, and flat areas (called wadi) where water once flowed. In these flat areas, I could see numerous structures, either black or white. They were laid out to follow the contours of the wadi, and not in the form of villages. Leaving Saudi Arabian airspace, we were rerouted to a more northerly course, and passed directly over Bahrain and the peninsular country of Qatar.

The desert surrounding the airport at Al Ain is reddish in color, but more striking is that the airport perimeter is a 100 yard wide swath of date palm trees, with a total length that must be more than 10 miles. After a normal landing, we opened the cabin door and experienced 100F temperatures. Even with a 15 knot wind, there was no wind chill effect – it was simply a very hot breeze.

After a night in a modern hotel in the middle of Al Ain, we returned the next morning to meet with airport officials to discuss security, photography (there is a military installation on the airport), and air traffic control. Although the airport is large in size, it has only one commercial flight per day. We were able to travel through security in a normal manner, using metal detectors and by placing all our hand-carried items on a belt to be scanned. Everyone involved in security, law enforcement, or ramp operations were Emirati. The air traffic controllers were English speakers from Namibia, South Africa, and Michigan(!). The Tower Chief had been to AirVenture this year! How small has the aviation world become?

Since we wanted to test at the hottest time of the day, we had a staggered bus schedule that brought the maintenance team out at 11am, the engine team at noon, and the flight crew at 1pm. Briefings were conducted in the airplane, while seated in the first class seats on the upper deck of the A380.

We had specific test requirements for each day of testing. On the first day, we wanted to thermally stress the engine before starting by parking 90 degrees to the wind, and at the same time have the engine in full sun. After flight, we shut the engine down so that it was 90 degrees to the wind, but with the fuselage blocking the wind so the engine would not rapidly cool down.

The most difficult test we did is called a Lapse Rate Takeoff. The description of this test might curl the toes of airline pilots, but here goes. Once in position for takeoff, I would set 25% thrust on each engine (on the A380, the primary indication of engine power is % thrust, instead of rpm or EPR). Once all 4 engines were at 25% thrust, brakes were released and the airplane allowed to slowly accelerate to 40 knots. The reason was that the runway in Al Ain is 45 meters (150 feet) wide, and the outboard engines are actually over the edge of the runway (yes, it is a big airplane!). If we pushed the power immediately up to full thrust, it could blow a lot of dust and stones onto the runway.

At 40 knots, I would push engines 1 and 4 up to TOGA (TakeOff GoAround) thrust. Then at 50 knots, the Test Flight Engineer would push engines 2 and 3 to TOGA thrust. Since the test engine

develops 10,000 lbs more thrust than the others, there is always a slight nose movement to the right, which I can counter with a consistent 1 inch of rudder pedal deflection. My right hand is now on the front of the thrust levers. After the TFE states “Thrust Set”, I know that any movement of the nose left or right is a true engine failure. Below V1, I can reject the takeoff by sweeping the thrust levers to idle. These procedures were developed after a lot of time in the simulator, and will accommodate up to a 15 knot crosswind from the right.

At V1 (in normal conditions, the speed where we can successfully stop, or successfully continue the takeoff), the TFE pulls engines 1 and 4 to 50% thrust. Then at liftoff, the TFE brings engine 1 to idle, and further reduces engine 4 to 45% (this balances the airplane, since engine 2 is set at TOGA thrust) Once again, all these numbers were determined after a lot of time in the simulator. For the Lapse Rate Takeoff, the gear and flaps stay down, and I climb using only the engine 3 thrust lever to maintain 150 knots, and flight director guidance to climb at precisely 700 fpm. What the flight test engineer needs is a slow climb, in terms of both airspeed (very low airflow through the engine), and climb rate, so that the turbine temperatures in the test engine can be seen to react with the change in temperature with altitude (the thermal lapse rate).

This climb continues for 10 minutes, with airspeed held +/- 2 knots. This is quite difficult in extreme heat over desert terrain, as the turbulence in thermals begins about 4,000 feet and continues up to and beyond 15,000 feet. With stabilized thrust settings on the test engine at 15,000 feet, I was trying to hold 143 knots in level flight with gear down and flaps at Conf 2. The lift in thermals was so strong that at times engines 1, 3, and 4 were at idle, with full speed brakes, to maintain altitude and keep the speed at 143 knots.

After completing three days of difficult testing, including 4 Lapse Rate Takeoff profiles, we gave the airplane and ourselves a day off. Some of the team went to the city of Dubai for shopping and sightseeing. Some went to a water park in Al Ain, which featured a pool where a wave machine makes waves large enough to surf. A few of us felt pulled toward the desert like it was a magnet, so we hired a car and driver to take us out of Al Ain, to where the desert waits to swallow whatever is built in its path.

Even though the desert is hot, dry, and sandy, there is evidence of green between the dunes, and evidence that animals live in the wild. Water is said to be around 100 feet below ground, and the green growth around Al Ain is the direct result of intense irrigation. On the edge of Al Ain there are several tracks for racing camels. Each evening at about 5pm, their handlers bring the camels out for exercise, and we had a good close look at them.

The UAE government realizes that at some point, the oil may run out. They have an interest in creating a business climate that will sustain the country if and when that happens. There is currently a manufacturing facility within the perimeter of the airport that makes carbon fiber fairings and ailerons for Airbus aircraft. The company is named Strata. It is currently run by expatriates, but employs many Emiratis, including several women. Strata has set the precedent for the UAE by

introducing women to the workforce. The strict interpretation of sharia law means that women must be completely covered, with only their eyes showing. We saw ample evidence of this in the city. In the workplace, the women I met had full head scarfs, but their faces were uncovered. The rulers of the UAE realize that a change in thinking is necessary to accommodate the changes necessary to sustain their society. Eventually, the airport at Al Ain will contain an aerospace industrial complex, with many different businesses.

We returned to Toulouse by a slightly more northerly route, crossing central Saudi Arabia over a vast desert that extends north into Syria. As we approached from the east, it appeared to be simply miles and miles of reddish sand dunes. Large dunes, reaching 1500 feet or more in height. Yet when directly overhead, we could see flat, bare spots between the dunes, dotted with green and an occasional structure.

Crossing the Gulf of Aqaba, we could see the city of Aqaba itself. To the south was Mt Sinai, where Moses was given the tablets containing the Ten Commandments. We crossed the Gulf of Suez with full view of the Suez Canal. And a short time later, we crossed the Nile and found ourselves with an outstanding view of the Great Pyramids at Giza, Egypt. Even from 40,000 feet, they are large and impressive structures.



Every great adventure has an end, and we landed back in Toulouse after putting the Trent XWB engine through nearly 24 hours of rigorous testing. I was fortunate enough to have a great team to work

with. It was a successful, safe, and enjoyable campaign in difficult working conditions, and in a completely different culture. Just like we were able to work as a team, make sure you stay on the EAA 55 team and be ready to help your fellow pilot when they really need it.

As a post script to this story, the first man to walk on the moon, Neil Armstrong, passed away while we were in Al Ain. Those of us who remember the day when Neil stepped off the Lunar Module and into history, also remember how truly great this country really can be. I was fortunate enough to watch Apollo 11 lift off from Cape Kennedy, and fortunate enough to hear Neil speak in 2005 to the Society of Experimental Test Pilots in Anaheim. You can see the full version of this speech at the following web address:

<http://www.aviationweek.com/Blogs.aspx?plckBlogId=Blog:04ce340e-4b63-4d23-9695-d49ab661f385&plckPostId=Blog%3A04ce340e-4b63-4d23-9695-d49ab661f385Post%3Affec160e-24cd-4f87-9318-3576c5f887d5>



FROM THE FLIGHT SURGEON By Gregory Pinnell, MD

The big news is MedXPress becomes the law of the land in making application for your FAA medical effective 10/1/12. It will be the only way you can do your medical application. It is pretty easy to use and only has a few occasional glitches which the FAA has mostly taken care of.

You are cordially invited to an EAA webinar on MedXPress on Tuesday, September 4, 2012 at 8pm Eastern Time. You will be able to interact and ask questions. If you miss the webinar it is archived on EAA's webinar site. The link to the webinar is <https://www2.gotomeeting.com/register/595644290>.

Fly safe and if you get time visit our Facebook page Airdocs!

MAD PICTURES SUBMITTED BY GREGORY RHEEDER



A beautiful Ercoupe.



The sun shines on a good Mason Aviation Day.



A T-6 fly's under the wing of a Stearman.

WINGS OVER ALMA

On August 25th and 26th, Gratiot County airport put on a great air show event. The daily air show lasted 4 hours and consisted of many aircraft from Piper Cubs to Military jets. Shown are a couple of the planes present on the field which the adults enjoyed. The kids had their fun too with various rides and a jump house.



The very latest in crop dusters was on display.



A beautiful P-51



This herd of ponies was ready for a rider.



A fly-by formation of kids Stearmans



A great Bouncy House for the Kids

A GREAT STORY OF WW II

Submitted by Greg Hover

The Japanese Zero and how we learned to fight it.

In April 1942 thirty-six Zeros attacking a British naval base at Colombo, Ceylon (now Sri Lanka), were met by about sixty Royal Air Force aircraft of mixed types, many of them obsolete. Twenty-seven of the RAF planes went down: fifteen Hawker Hurricanes (of Battle of Britain fame), eight Fairey Swordfish, and four Fairey Fulmars. The Japanese lost one Zero.

Five months after America's entry into the war, the Zero was still a mystery to U.S. Navy pilots. On May 7, 1942, in the Battle of the Coral Sea, fighter pilots from our aircraft carriers Lexington and Yorktown fought the Zero and didn't know what to call it. Some misidentified it as the German Messerschmitt 109.

A few weeks later, on June 3 and 4, warplanes flew from the Japanese carriers Ryujo and Junyo to attack the American military base at Dutch Harbor in Alaska's Aleutian archipelago. Japan's attack on Alaska was intended to draw remnants of the U.S. fleet north from Pearl Harbor, away from Midway Island, where the Japanese were setting a trap. (The scheme ultimately backfired when our Navy pilots sank four of Japan's first-line aircraft carriers at Midway, giving the United States a major turning-point victory.)

In the raid of June 4, twenty bombers blasted oil storage tanks, a warehouse, a hospital, a hangar, and a beached freighter, while eleven Zeros strafed at will. Chief Petty Officer Makoto Endo led a three-plane Zero section from the Ryujo, whose other pilots were Flight Petty Officers Tsuguo Shikada and Tadayoshi Koga. Koga, a small nineteen-year old, was the son of a rural carpenter. His Zero, serial number 4593, was light gray, with the imperial rising-sun insignia on its wings and fuselage. It had left the Mitsubishi Nagoya aircraft factory on February 19, only three and a half months earlier, so it was the latest design.

Shortly before the bombs fell on Dutch Harbor that day, soldiers at an adjacent Army outpost had seen three Zeros shoot down a lumbering Catalina amphibian. As the plane began to sink, most of the seven-member crew climbed into a rubber raft and began paddling toward shore. The soldiers watched in

horror as the Zeros strafed the crew until all were killed. The Zeros are believed to have been those of Endo, Shikada, and Koga.

After massacring the Catalina crew, Endo led his section to Dutch Harbor, where it joined the other eight Zeros in strafing. It was then (according to Shikada, interviewed in 1984) that Koga's Zero was hit by ground fire. An Army intelligence team later reported, "Bullet holes entered the plane from both upper and lower sides." One of the bullets severed the return oil line between the oil cooler and the engine. As the engine continued to run, it pumped oil from the broken line. A Navy photo taken during the raid shows a Zero trailing what appears to be smoke. It is probably oil, and there is little doubt that this is Zero 4593.

After the raid, as the enemy planes flew back toward their carriers, eight American Curtiss War hawk P-40's shot down four Val (Aichi D3A) dive bombers thirty miles west of Dutch Harbor. In the swirling, minutes-long dogfight, Lt. John J. Cape shot down a plane identified as a Zero. Another Zero was almost instantly on his tail. He climbed and rolled, trying to evade, but those were the wrong maneuvers to escape a Zero. The enemy fighter easily stayed with him, firing its two deadly 20-mm cannon and two 7.7-mm machine guns. Cape and his plane plunged into the sea. Another Zero shot up the P-40 of Lt. Winfield McIntyre, who survived a crash landing with a dead engine.

Endo and Shikada accompanied Koga as he flew his oil-spewing airplane to Akutan Island, twenty-five miles away, which had been designated for emergency landings. A Japanese submarine stood nearby to pick up downed pilots. The three Zeros circled low over the green, treeless island. At a level, grassy valley floor half a mile inland, Koga lowered his wheels and flaps and eased toward a three-point landing. As his main wheels touched, they dug in, and the Zero flipped onto its back, tossing water, grass, and gobs of mud. The valley floor was a bog, and the knee-high grass concealed water. Endo and Shikada circled. There was no sign of life. If Koga was dead, their duty was to destroy the downed fighter. Incendiary bullets from their machine guns would have done the job. But Koga was a friend, and they couldn't bring themselves to shoot. Perhaps he would recover, destroy the plane himself, and walk to the waiting submarine. Endo and Shikada abandoned the downed fighter and returned to the Ryujo, two hundred miles to the south. (The Ryujo was sunk two months later in the eastern Solomon's by planes from the aircraft carrier Saratoga. Endo was killed in action at Rabaul on October 12, 1943, while Shikada survived the war and eventually became a banker.)

The wrecked Zero lay in the bog for more than a month, unseen by U.S. patrol planes and offshore ships. Akutan is often foggy, and constant Aleutian winds create unpleasant turbulence over the rugged island. Most pilots preferred to remain over water, so planes rarely flew over Akutan. However, on July 10 a U.S. Navy Catalina (PBY) amphibian returning from overnight patrol crossed the island. A gunner named Wall called, "Hey, there's an airplane on the ground down there. It has meatballs on the wings." That meant the rising-sun insignia. The patrol plane's commander, Lt. William Thies, descended for a closer look. What he saw excited him.

Back at Dutch Harbor, Thies persuaded his squadron commander to let him take a party to the downed plane. No one then knew that it was a Zero.

Ens. Robert Larson was Thies's copilot when the plane was discovered. He remembers reaching the Zero. "We approached cautiously, walking in about a foot of water covered with grass. Koga's body, thoroughly strapped in, was upside down in the plane, his head barely submerged in the water. "We were surprised at the details of the airplane," Larson continues. "It was well built, with simple, unique features. Inspection plates could be opened by pushing on a black dot with a finger. A latch would open, and one could pull the plate out. Wingtips folded by unlatching them and pushing them up by hand. The pilot had a parachute and a life raft." Koga's body was buried nearby.

In 1947 it was shifted to a cemetery on nearby Adak Island and later, it is believed, his remains were returned to Japan. Thies had determined that the wrecked plane was a nearly new Zero, which suddenly gave it special meaning, for it was repairable. However, unlike U.S. warplanes, which had detachable wings, the Zero's wings were integral with the fuselage. This complicated salvage and shipping. Navy crews fought the plane out of the bog. The tripod that was used to lift the engine, and later the fuselage, sank three to four feet into the mud. The Zero was too heavy to turn over with the equipment on hand, so it was left upside down while a tractor dragged it on a skid to the beach and a barge. At Dutch Harbor it was turned over with a crane, cleaned, and crated, wings and all. When the awkward crate containing Zero 4593 arrived at North Island Naval Air Station, San Diego, a twelve-foot high stockade was erected around it inside a hangar. Marines guarded the priceless plane while Navy crews worked around the clock to make it airworthy. (There is no evidence the Japanese ever knew we had salvaged Koga's plane.)

In mid-September Lt. Cmdr. Eddie R. Sanders studied it for a week as repairs were completed. Forty-six years later he clearly remembered his flights in Koga's Zero. "My log shows that I made twenty-four flights in Zero 4593 from 20 September to 15 October 1942," Sanders told me. "These flights covered performance tests such as we do on planes undergoing Navy tests.

The very first flight exposed weaknesses of the Zero that our pilots could exploit with proper tactics. "The Zero had superior maneuverability only at the lower speeds used in dog fighting, with short turning radius and excellent aileron control at very low speeds. However, immediately apparent was the fact that the ailerons froze up at speeds above two hundred knots, so that rolling maneuvers at those speeds were slow and required much force on the control stick. It rolled to the left much easier than to the right. Also, its engine cut out under negative acceleration [as when nosing into a dive] due to its float-type carburetor. "We now had an answer for our pilots who were unable to escape a pursuing Zero. We told them to go into a vertical power dive, using negative acceleration, if possible, to open the range quickly and gain advantageous speed while the Zero's

engine was stopped. At about two hundred knots, we instructed them to roll hard right before the Zero pilot could get his sights

lined up. “This recommended tactic was radioed to the fleet after my first flight of Koga’s plane, and soon the welcome answer came back: “it works!”” Sanders said, satisfaction sounding in his voice even after nearly half a century.

Thus by late September 1942 Allied pilots in the Pacific theater knew how to escape a pursuing Zero.

“Was Zero 4593 a good representative of the Model 21 Zero?” I asked Sanders. In other words, was the repaired airplane 100 percent?

“About 98 percent,” he replied.

The zero was added to the U.S. Navy inventory and assigned its Mitsubishi serial number. The Japanese colors and insignia were replaced with those of the U.S. Navy and later the U.S. Army, which also test-flew it. The Navy pitted it against the best American fighters of the time—the P-38 Lockheed Lightning, the P-39 Bell Airacobra, the P-51 North American Mustang, the F4F-4 Grumman Wildcat, and the F4U Chance Vought Corsair—and for each type developed the most effective tactics and altitudes for engaging the Zero.

In February 1945 Cmdr. Richard G. Crommelin was taxiing Zero 4593 at San Diego Naval Air Station, where it was being used to train pilots bound for the Pacific war zone. An SB-2C Curtiss Helldiver overran it and chopped it up from tail to cockpit. Crommelin survived, but the Zero didn’t. Only a few pieces of Zero 4593 remain today. The manifold pressure gauge, the air-speed indicator, and the folding panel of the port wingtip were donated to the Navy Museum at the Washington, D.C., Navy Yard by Rear Adm. William N. Leonard, who salvaged them at San Diego in 1945. In addition, two of its manufacturer’s plates are in the Alaska Aviation Heritage Museum in Anchorage, donated by Arthur Bauman, the photographer.

Leonard recently told me, “The captured Zero was a treasure. To my knowledge no other captured machine has ever unlocked so many secrets at a time when the need was so great.” A somewhat comparable event took place off North Africa in 1944—coincidentally on the same date, June 4, that Koga crashed his Zero.

A squadron commanded by Capt. Daniel V. Gallery, aboard the escort carrier Guadalcanal captured the German submarine U-505, boarding and securing the disabled vessel before the fleeing crew could scuttle it. Code books, charts, and operating instructions rescued from U-505 proved quite valuable to the Allies. Captain Gallery later wrote, “Reception committees which we were able to arrange as a result ... may have had something to do with the sinking of nearly three hundred U-boats in the next eleven months.” By the time of U-505’s capture, however, the German war effort was already starting to crumble (D-day came only two days later), while Japan still dominated the Pacific when Koga’s plane was recovered.

A classic example of the Koga plane’s value occurred on April 1, 1943, when Ken Walsh, a Marine flying an F4U Chance-Vought Corsair over the Russell Islands southeast of Bougainville, encountered a lone Zero. “I turned toward him, planning a deflection shot, but before I could get on him, he rolled, putting his

plane right under my tail and within range. I had been told the Zero was extremely maneuverable, but if I hadn’t seen how swiftly his plane flipped onto my tail, I wouldn’t have believed it,” Walsh recently recalled. “I remembered briefings that resulted from test flights of Koga’s Zero on how to escape from a following Zero. With that lone Zero on my tail I did a split S, and with its nose down and full throttle my Corsair picked up speed fast. I wanted at least 240 knots, preferably 260. Then, as prescribed, I rolled hard right. As I did this and continued my dive, tracers from the Zero zinged past my plane’s belly. “From information that came from Koga’s Zero, I knew the Zero rolled more slowly to the right than to the left. If I hadn’t known which way to turn or roll, I’d have probably rolled to my left. If I had done that, the Zero would likely have turned with me, locked on, and had me. I used that maneuver a number of times to get away from Zeros.” By war’s end Capt. (later Lt. Col.) Kenneth Walsh had twenty-one aerial victories (seventeen Zeros, three Vals, one Pete), making him the war’s fourth-ranking Marine Corps ace. He was awarded the Medal of Honor for two extremely courageous air battles he fought over the Solomon Islands in his Corsair during August 1943. He retired from the Marine Corps in 1962 after more than twenty-eight years of service. Walsh holds the Distinguished Flying Cross with six Gold Stars, the Air Medal with fourteen Gold Stars, and more than a dozen other medals and honors.

How important was our acquisition of Koga’s Zero? Masatake Okumiya, who survived more air-sea battles than any other Japanese naval officer, was aboard the Ryujo when Koga made his last flight. He later co-authored two classic books, *Zero* and *Midway*. Okumiya has written that the Allies’ acquisition of Koga’s Zero was “no less serious” than the Japanese defeat at Midway and “did much to hasten our final defeat.” If that doesn’t convince you, ask Ken Walsh.

INSIDE THE ZERO

The Zero was Japan’s main fighter plane throughout World War II. By war’s end about 11,500 Zeros had been produced in five main variants. In March 1939, when the prototype Zero was rolled out, Japan was in some ways still so backward that the plane had to be hauled by oxcart from the Mitsubishi factory twenty-nine miles to the airfield where it flew. It represented a great leap in technology. At the start of World War II, some countries’ fighters were open cockpit, fabric-covered biplanes. A low-wing all-metal monoplane carrier fighter, predecessor to the Zero, had been adopted by the Japanese in the mid-1930’s, while the U.S. Navy’s standard fighter was still a biplane. But the world took little notice of Japan’s advanced military aircraft, so the Zero came as a great shock to Americans at Pearl Harbor and afterward. A combination of nimbleness and

simplicity gave it fighting qualities that no Allied plane could match. Lightness, simplicity, ease of maintenance, sensitivity to controls, and extreme maneuverability were the main elements that the designer Jiro Horikoshi built into the Zero. The Model 21 flown by Koga weighed 5,500 pounds, including fuel, ammunition, and pilot, while U.S. fighters weighed 7,500 pounds and up. Early models had no protective armor or self-sealing fuel tanks, although these were standard features on U.S. fighters. Despite its large-diameter 940-hp radial engine,

the Zero had one of the slimmest silhouettes of any World War II fighter. The maximum speed of Koga's Zero was 326 mph at 16,000 feet, not especially fast for a 1942 fighter. But high speed wasn't the reason for the Zero's great combat record. Agility was. Its large ailerons gave it great maneuverability at low speeds. It could even outmaneuver the British Spitfire. Advanced U.S. fighters produced toward the war's end still couldn't turn with the Zero, but they were faster and could out climb and out dive it. Without self-sealing fuel tanks, the Zero was easily flamed when hit in any of its three wing and fuselage tanks or its droppable belly tank. And without protective armor, its pilot was vulnerable. In 1941 the Zero's range of 1,675 nautical miles (1,930 statute miles) was one of the wonders of the aviation world. No other fighter plane had ever routinely flown such as distance. Saburo Sakai, Japan's highest-scoring surviving World War II ace, with sixty-four kills, believes that if the Zero had not been developed, Japan "would not have decided to start the war." Other Japanese authorities echo this opinion, and the confidence it reflects was not, in the beginning at least, misplaced. Today the Zero is one of the rarest of all major fighter planes of World War II. Only sixteen complete and assembled examples are known to exist. Of these, only two are flyable: one owned by Planes of Fame, in Chino, California, and the other by the Confederate Air Force, in Midland, Texas.

Koga's Zero: The Fighter That Changed World War II, which can be purchased from Pictorial Histories Publishing Company, 713 South Third Street West, Missoula, MT 59801.

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Thank you, to the members who provide pictures and written articles for this Newsletter which are typically informative and interesting.

A special thanks go's to Terry Lutz, who writes a monthly article which we all depend on. Terry is a very busy man who travels the world, yet finds time to contribute to the Newsletter.

POCKET CALENDAR:

Sept 8 = EAA55 MDOT Seminar
Sept 8 = Winery - Williams Airpark
Sept 15 = Jackson Pancake Breakfast
Sept 21-23 = Michigan Air Tour

Sept 22 = Adrian Pancake Breakfast
Oct 21 = Watervliet Chili Hop
Dec 9 = Chapter Xmas Party
Jan 25-26 = Gr Lks Internatl Aviation Conf

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