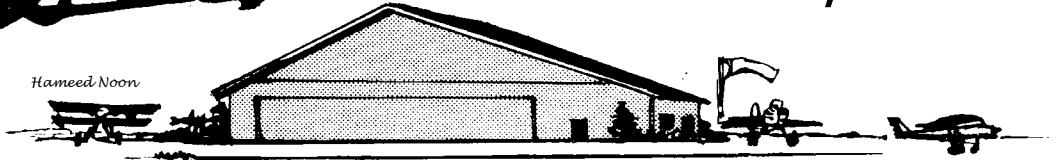




**Experimental Aircraft Association
Chapter 55
April 2003**



**Meetings are the 2nd Saturday of each Month at the Hangar,
Mason Jewett Field, Breakfast at 0800, Meeting at 0930.**

**Pres: Mike Arntz 694-4601 Vice Pres: Gary Long 676-3867 Treas: Gregg Cornell 351-1338
Sec: Drew Seguin 332-2601 Editor: Warren Miller 393-9385**

Climb and Maintain Flight Level 55

We are working diligently on the "Centennial of Flight Celebration" set for the weekend of August 16-17. So far, the Yankee Air Force B-17 will be here; Dave Groh is getting the word out to warbird owners; Tom Botsford has contacted the Cessna 120/140 group; and I have sent out letters to General Taylor of the Michigan National Guard asking for displays and fly-bys of helicopters and displays of military vehicles from the National Guard. Also a letter was sent to Colonel Fobbs of the 645th Area Support Group for Military displays of Hummers and other vehicles.

Renee Arntz has had some positive feed back from the Governor's office with our invitation for Jennifer Granholm to present "The State flag for the Fifty Flags to Kitty Hawk" program. Drew Seguin, Joe Pirch and I had a meeting with Bob Selig on April 3, which was very positive. Mr. Selig is very interested in the Mason airport and the community of Mason both Pilots and non-Pilots alike. I feel he will be an asset to us all as the Airport Director.

If you have been keeping up with the happenings in the Middle East you would have seen some very remarkable events, which show our technology and the ability to take a world of hurt to the bad guys around the world. The one weapon that I find interesting is the precision guided concrete bomb used to take out tanks in suburban areas to prevent civilian casualties. Let's work for a quick end to the war and safe return for all of our Heroes and take a moment each day to think of the ones who gave the ultimate sacrifice for us.

**Support our Troops and Never forget
Mike**

Teams

APRIL

Adam Fogg	Carl Darlymple
Peter Greenfield	John Kingsbury
George Benson	Duane Dusseau
Mary Schwaderer	Gilbert McKessy
Greg Hover	

MAY

John Mireley	Bob Smith
Jim Palmer	Del Johnson
Joel Hekler	Baseil Craig Teall
Lynn Brown	Terry Lutz

EAA Board of Directors Meeting

March 5, 2003

Attendees: Pres. Mike Arntz, V. P. Gary Long, Treas. Gregg Cornell, Sec. Drew Seguin, Renee Arntz, Ernie Lutz, Doug Koons, Bill Purosky, Dave Groh, Debbie Groh → Secretary's report was approved → Treasurer's report was approved → Gregg Cornell noted there is an increase in utilities from heating the hangar all of the time. No further action was taken. → There is one airplane space available in the hangar. → Young Eagles days will be held on June 8 and July 14. See the Website for more details and pictures. → Headquarters has

Board of Directors' Meeting
Wednesday, April 9, 2003 7:00 pm at Hangar
Chapter 55 Meeting
Saturday, April 12, 2003 8-9:00 am Breakfast 9:30 am Chapter Meeting

approved the Chapter 55 by-laws as submitted. A motion was made and carried to accept them subject to membership approval.

They will be distributed via mail and email to the membership for discussion and a vote at the April meeting. Family memberships were set at \$40.00 → We have a contract for the B-17 visit. They will arrive on Friday 8/15 and stay through Sunday 8/17. We need \$6000.00 minimum to fund the program. Joe Pirch will write a proposal to Bob Selig of CRAA to seek support. Renee Arntz will contact the Governor's office to try and coordinate a visit during the show. → EAA headquarters is sponsoring a program to gather pictures of members for the WWII memorial in Washington. Motion was made and carried for Chapter 55 to pay the fee for submitting member pictures to this project. Contact Terry Lutz if you have pictures to contribute. → The EAA Leadership seminar was a success with 45 in attendance. → Doug Koons acquired some lights to put over the grill. Bill Purosky volunteered to hang them. Thanks guys. → Dave Groh updated the group on efforts to get a North-South Runway on the master plan. The chapter will reimburse him for postage to mail flyers for the letter campaign. → The meeting was adjourned at 9:15 PM.

EAA Chapter 55 Business Meeting

March 5, 2003

The meeting was called to order at 9:35 am. → There were 47 members and guests in attendance including two new members. → Minutes from the previous meeting were approved. → The Treasurer's report was approved. → Renee Arntz had certificates for credits to the EAA Academy for Young Eagle pilots. Many were signed over as contributions to headquarters. → The National Young Eagles day will be June 7 from 9 to 5. Chapter 55 will have another day on July 13 from 10 to 2. → Mike Arntz indicated the revised by-laws had been approved by the board and are being distributed to the membership for a vote at the April meeting. → Mike went over plans for the B-17 in conjunction with the Mason Balloon Festival. Mike Arntz, Drew Seguin, and Joe Pirch will try to get supporting funds from CRAA. Dave Groh will try to bring in some warbirds. → Terry Lutz went over the plan to provide pictures of WWII veterans for the Memorial in Washington DC. Contact Terry for more information. → Dave Groh invited all interested parties to attend the upcoming meeting at Mason Middle School regarding the proposed North-South runway. → Mike Arntz gave a presentation on METARS. → The meeting was adjourned at 10:14 am.

Notes from Cape Juby

By Terry L. Lutz, Chapter 55 Flight Advisor

The concept I'm using for my airplane is a hybrid between conventional instruments and modern instruments. In the homebuilt world, we're just about to the point where we can toss out altimeters, tachometers, oil temp and pressure gauges, and gyro driven instruments in favor of extremely high tech instruments. Just recently, I've seen the instrument panels of two projects, a Lancair Legacy, and an F-1 Rocket. Both airplanes

have the Blue Mountain electronic instrument, and both have the Blue Mountain Light backup flight instrument. Other than a few switches, that's about it.

These new instruments provide all the flight instruments (attitude, heading, altitude, etc), and all the performance instruments (airspeed, rpm, manifold pressure, etc). They also display GPS based navigation information on a color moving map, and there are various variations available such as a flight path marker and pathway in the sky. The screens are as big as what you see on a laptop computer, and because they are programmable, the sky is literally the limit to what they can display. High tech electronic gyros, flux gates, and pressure sensors provide extremely accurate information. Much of this sensor technology comes from military Unmanned Aerial Vehicle programs. Hey, they don't have pilots, so what good are round dials??

On a recent trip to Seattle, I went to visit Dynon Development, the people who are producing an interesting instrument called the EFIS-10. This instrument is about the same size and provides the same information as the electronic back-up flight instrument currently used in modern commercial airplanes. It displays attitude, altitude, airspeed, heading, and it has a slip indicator. You can preset heading bugs, altitude bugs, and airspeed bugs, and it will beep in your headset if you get off those numbers by a certain amount. It has a bright display, and it can be dimmed almost to dark for night flying. The EFIS-10 looks like a great instrument for a homebuilt.

The guy I talked to in Seattle showed me a picture of the instrument panel in his RV-6. Along with the EFIS-10 were some round dial instruments. I said, "Why do you have these old style instruments along with the new one?" His answer was that the single point failure guaranteed to ruin your day is a failure of the display itself. All the information could be correct, but if the display goes blank, you might be in a bit of trouble. This is good food for thought.

The guys that have the Blue Mountain instruments are really cooked if the display on the big one quits, so they have the small one as a backup. But it's not quite that simple. You have to consider some redundancy in the electrical system that powers these displays. The electrical system will need a bus architecture so that the backup instrument operates off a separate bus, and there must be more than just the aircraft battery to act as a standby power source. This could be a backup alternator, permanent magnet generator (PMG), or an additional battery. Switch capability to go from primary to backup system must be provided, as well as the capability to switch off non-essential loads. The F-16 is a good example. In order of priority, the power sources for the Fly-By-Wire (FLCS) control system are: 1. FLCS PMG (driven off the accessory drive gearbox), 2. Main Generator, 3. EPU Generator (hydrazine emergency power unit), 4. EPU PMG, 5. Aircraft Battery, and 6. FLCS Battery. If all of those fail, it's time to use the ejection seat!

For my airplane, I decided to eliminate the vacuum driven artificial horizon and directional gyro. This also eliminates the vacuum pump and associated hoses. The Dynon EFIS-10 will replace that system. An altimeter, airspeed indicator, and magnetic compass will provide conventional backup flight instruments. Engine health will be monitored by a Grand Rapids

Technology EIS display, which in turn will be backed up with a fuel gauge, tachometer, oil pressure gauge, and a combination volt/ammeter. The EFIS-10 will have 3 power sources: 1. Alternator, 2. Aircraft Battery, and 3. Internal Backup Battery. The Lightspeed Ignition will be backed up with one magneto. Finally, the bus architecture will have an instrument bus, a radio bus, and a standby bus, which will allow manual load shedding.

My partner in this electrical crime business is Carl Franz, owner/builder/pilot of the dark blue Navy-style RV-6 based at Livingston Country. Carl is meticulous, and doesn't talk much. But when he does, his ideas make a lot of good sense. Like the time he told me that electricity can leak if you don't control it, and unlike fuel and oil, you can't smell it or see it dribbling out on the floor. So you need to keep the wire runs short, the grounds good, and fuse protect things that can threaten the health of the rest of the components on a given bus. And all this time I thought that electricity was bunch of electricians running through a wire.

The Society of Experimental Test Pilots is holding a Flight Test Safety Workshop at the Air Force Museum in Dayton, OH on May 8th and 9th. Although the workshop will be held during the week, there are enough highlights here to make it worth the time and effort to attend, even if it is just for the dinner at the Air Force Museum. All members of EAA are very much welcome to attend. The theme for this year's workshop is "First Flights", and the Society has lined up the test pilots that flew several significant first flights, including Joe Cotton on the XB-70, and Phil Oestricher on the F-16.

The first day will focus on combat aircraft, both bombers and fighters. The second day will focus on commercial, rotary wing, and experimental aircraft. The latter will feature Doug Shane, who has done most of Burt Rutan's first flights in recent years. However, that's not the best part! On May 8th, the luncheon speaker will be Tom Griffin, one of the Doolittle Raiders. And for the Reception that evening in the Air Force Museum, the museum will have several cockpits open for attendees to view and perhaps sit in. This is well beyond a normal visit to an aviation museum. I have included a brochure on the Workshop. You can choose anything from the full two days to just the reception. It is a rare opportunity to meet some very experienced test pilots, and see the museum birds up close and personal.

Don't get any wires crossed, do some smoke tests on your electrical system before you go flying, and as always, don't forget to help your fellow aviator when they need it.



March breakfast meeting



Gilbert said the pancakes were great.



Kyle said the eggs were the best.

Wingtips →

*Experimental Aircraft Association
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