

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

Santa will be here soon, have you all been good?? I will take this opportunity to wish a very **Merry Christmas and Happy New Year** to all Chapter 55 members and their families.

There are a couple of congratulations in order. First, at the last Chapter meeting, Debbie Groh was made an honorary member for all the hard work she has performed in the past year. She has worked ever so hard at Chapter functions and is a real asset to its members. It is very hard to find someone like Debbie to give their time as she has. Second, is to Doug Koons, who was voted "Member Of The Year" Doug was instrumental in saving the Chapter hundreds of dollars in roof repairs and the addition to the meeting room. An honorable mention goes out to Renee Arntz, our Young Eagle's Coordinator.

The Christmas party is scheduled for Saturday, December 14, 2002, starting at 6:00 PM and dinner is at 7:00 PM.

Meet the new Director, Bob Selig on Dec. 12th at 6 pm in the terminal building at Mason Jewett Field.

Mike

Teams

NO DESIGNATED TEAM FOR DECEMBER
VOLUNTEERS NEEDED TO PREPARE BREAKFAST

EAA Board of Directors Meeting

Attendees: Pres. Mike Arntz, V. P. Gary Long, Treas. Gregg Cornell, Sec. Drew Seguin, Renee Arntz, Dave Groh, Debbie Groh, Ted Lakin, Ernie Lutz, Bill Purosky, Jack Toman. → Phil Tarteloni gave an overview of the upcoming Great Lakes International Aviation Conference. Discussion included the possibility of Chapter 55 having a booth in the event. The Great Lakes Fly-in offered to provide at least half of the \$325.00 fee.

Greg C. motioned that we participate and share the cost. After discussion it was decided to table the decision until after presentation to the general membership meeting. The motion was modified and carried "subject to approval of the membership." → Mason Balloon Festival will be held August 15 to 17, 2003. Joe Watkins and Tom Schrader of the Mason Area Chamber of Commerce were present to discuss the event and possible Chapter 55 participation. The Board noted that this is not an EAA event and Chapter 55 is not a sponsor or official participant. They will communicate with the event organizer about waivers, etc. and will work with any pilots interested on an individual basis. → The

Secretary's report was approved. → Treasurer's report was approved. Jim Downer is working to cover the wings of his project and will be vacating the builder's hangar shortly thereafter. Greg motioned that we change the Chapter bank to Independent Bank. The motion was passed. The President, Vice president, and Treasurer will have signing authority. → Young Eagles. Dean Simms organized the Young Eagles day of 10/18/02. Seventy rides were given, bringing the year total to 291 and Chapter 55 historical total to 1088. → The purchase of Web Site development software has been postponed for further clarification of requirements. → There is an offer of \$3000 for purchase of the mini-Max. The offer includes some financing terms. Greg C. motioned to accept the offer and it was passed. → Dave and Debbie Groh provided an update on the efforts to get a

Board of Directors' Meeting

Wednesday, December 11, 2002
7:00 pm at Hangar

Chapter 55 Meeting

Saturday, December 14, 2002
8-9:00 am Breakfast
9:30 am Chapter Meeting

North/South runway at Mason. They have been meeting with the Airport Authority and getting favorable response. Board meetings are the first Monday of every month and supporters are encouraged to attend. → Greg Cornell proposed leaving the \$2,700 in the Newberry Fund with LCC for 2003 and leaving it at that level for now. → Chapter by-laws require that all chapter members also be national members of EAA. The Board agreed to step up compliance enforcement in 2003. We will not accept new memberships or renewals unless the individual is a national member. → The Chapter 55 Christmas party will be December 14. The cost will be \$7.00 per person with the remainder to be paid by the chapter. Renee Arntz will handle setups and decorations. Please notify/send checks to Greg Cornell. → Member of the year discussions were tabled for further discussion. → Bill Purosky volunteered to coordinate support for the Leadership Workshop in February. It will include Breakfast and Lunch for our guests.



Member of the Year, Doug Koons. Doug was instrumental in fixing the hangar roof and constructing the addition to the meeting room.

Ted Lakin stands in the new addition where he assisted in the finish work of dry wall, painting and lighting.



EAA Chapter 55 Business Meeting

Membership Meeting – November 9, 2002

The meeting was called to order at 9:35 am. There were 54 members and guests present including two new members. → Minutes from the previous meeting were approved. → President Mike Arntz announced the requirement to have all chapter member also be national members of EAA. → The Treasurer's report was approved. Greg noted that the meeting room expansion cost \$1,500. → Mike acknowledged those who helped with construction of the addition, especially Ted Lakin, Doug Koons, Ernie Lutz, and Bill Purosky. → Young Eagles. Seventy kids were flown on 10/18. Ted Lakin flew 35 of them. Total for the year was 291. Ground crews were recognized. It couldn't happen without them. → The Mini-Max has been sold to Les McDonald. → Greg Announced the winner of the Newberry scholarship is Travis Harmon of Mason. He is an Aviation Technology major at LCC. → Phil Tarteloni of Great Lakes International Aviation Conference gave a pitch on the conference. See Board minutes. → Speaking of Boards, the election of Board Members will take place at the December meeting. Wee need candidates. It doesn't pay much, but it's usually fun and the Chapter sure needs all the help we can get. Contact Mike Arntz. → Mary Lou Hanna is interested in selling Bill's Christavia project. She is in Grand Ledge and can be reached at 627-4360. → The Mason Balloon Festival people would like to have participation. This event is not sponsored or sanctioned by Chapter 55. Any interested parties may contact Joe Pirch independently. → The Chapter Christmas Party will be on December 15. Seven dollars a person. Send checks to Greg Cornell. He needs a head count ASAP. → In recognition of his excellent work in the past, Ted Lakin was cajoled by the Board into acting as Chapter Media Coordinator. → George Moore announced he will make additional copies of the Chapter 55 projects video for his cost of \$2.00 each. Contact him directly. → Ted Lakin motioned to make Debbie Groh an Honorary Mamber in recognition of her contributions to the chapter. Motion was bassed. There was considerable discussion on the objectives and process for selecting future Honorary Chapter Members. This will be taken up by the Board at a later date. A motion was made and passed to determine whether there is an issue with whether Honorary Members are National EAA members. Warren Miller agreed to do the research. → The meeting was adjourned at 10:35 am.

Notes from Cape Juby

By Terry L. Lutz, Chapter 55 Flight Advisor

The new generation of EAAers may not remember these names, but Ed Leshner and Leon Davis were homebuilders and record setters back in the 60s and 70s. Ed built and set records in the Leshner Teal, and Leon built the Davis DA-1 and broke a few records. Even though some of the records originally belonged to Ed, they were good friends. The extremes they went to control weight are almost legendary. I remember an article in the Ann Arbor News titled "Dieting Grandfather To Attempt Distance Record". And Ed once told me that Leon would take an instrument like an airspeed indicator, and remove the instrument

case, leaving only the face and the internal mechanism. It wasn't until Burt Rutan came along and set Sport Aviation on its ear with foam and glass airplanes that some of these records fell.

Every decision you make regarding your homebuilt design and construction has a weight element. Engine, fuel system, lighting, radios, and even wiring has a weight consideration. So, how important is weight to the performance of the airplane? Let's start with an airplane that weighs 1000 lbs and is equipped with a Lycoming O-320 rated at 150 hp. It cruises at 150 mph TAS at 75% power, and burns 8.0 gallons per hour. We'll choose a reference wing area of 100 square feet, and a span of 20 feet. Using these numbers and a tiny bit of easy math, we can calculate the lift coefficient for this airplane, and the drag due to lift, in cruise flight.

The lift coefficient at cruise works out to be .173. The drag at cruise, assuming 75% power is 281.3 lbs. The drag simply from producing lift is 10.8 lbs or 3.8% of total drag. If you increase the weight of the airplane by 100 lbs, to 1100 lbs, the lift coefficient rises to .191. This increases the drag due to lift to 20.9 lbs, a difference of 10.1 lbs. So the total drag rises to 291.4 lbs. To fly at the same 150 mph TAS, instead of 75% power, you will have to push the power up 2.7% to 77.7%. Or, at the same power, the speed will bleed off to 131.6 mph TAS. Let's also say that this increases the fuel consumption to 8.2 gallons per hour.

So how do we put this in perspective? First of all, it means that for every 1 pound of weight we add to our hypothetical airplane, drag will increase by about .10 lbs, which will reduce cruise speed by .2 mph TAS. Or, if you want to push the power up to 8.2 gph, the added weight will cost you 20 gallons of fuel in 100 hours flying time.

This (I hope) interesting discussion comes from observing how homebuilt airplanes seem to gain weight over the manufacturer's prototypes. The RV-8, for example, should come in around 1050 lbs empty weight. However, most of them are closer to 1100 lbs, and a few are close to 1150 lbs. Do the math, and you can see how weight gain hurts these well-equipped airplanes.

The Germans were trying out a new Zeppelin, and found that it did not meet the calculated lift capability. It was determined that the bolts used to hold the structure together were all about 1 cm too long. So they went in with nippers, cut the extra weight from several thousand bolts, and regained their performance. It all adds up. Unless, of course, you are flying a red Mini-Max, which will carry it's own weight in gold and still go fast. Must be the red paint!

If you hang around Cooper's enough, you learn to wear your goulashes. It gets a little deep. On one recent visit, the subject of "getting on the step" to increase cruise speed was discussed. It turns out that there is some aerodynamic truth to the story. By accelerating a little above normal cruise speed and allowing the airplane to decelerate to trim speed, it pushes the point at which the boundary layer transitions from laminar to turbulent a few percent aft of where it would be if you accelerated toward the trim speed. This reduces drag a tiny bit, and allows a slightly higher cruise speed. The air has to be smooth, because any turbulence will put you back to reality. So will bugs on the leading edge.

My experience with bugs stems from a flow visualization study we did at Edwards AFB using a Blanik glider. We mixed Mobil One engine oil with lamp black powder, painted it on the top of the wing, and went flying. Chase photos clearly showed the transition point from laminar to turbulent at about 40% chord. But they also showed sharp V's where the boundary layer was tripped at the leading edge, usually caused by bugs. Our other method of flow visualization was to spray a sublimating chemical on the wing. We used a liquid mixture made from paint thinner and crushed mothballs. Sprayed on the top of the wing, the mixture would dry into a thin layer, and sublimate to the atmosphere in flight. It didn't work as well as the Mobil One, but the bugs avoided it like the plague!!

My left index finger may not survive my homebuilt project. It has been drilled twice with a number 40 drill (both times using the bone as a drill stop), and most recently was attacked by a deburring tool. At this rate, by the time the airplane is finished, I'll have the only index finger flying that has the nail held on with flush rivets.

I had the Luscombe Silvaire Bullet out flying last week. It was 10F on the ground, 18F in-flight, and -40 in the cockpit. But it was still 100% fun. So stay warm, pre-heat those airplanes carefully, and fly safe this winter. And as always, don't forget to help your fellow airman when they need it. Keep some Band-Aids handy, too.

PIETENPOL FLYS

Kyle Bradford completed his Pietenpol air camper in 2001 after three years of having fun type labor. This is his second Pietenpol. Kyle later test flew his plane and had to make some minor adjustments to his satisfaction. The plane has a Lycoming engine of 65 HP. It features the Fly Baby landing gear and engine mount. The cost to build the plane was \$4000.00.



Kyle's completed Pietenpol parked in his hangar



The wing center section with gas tank



Kyle completes a wing in his home workshop.

NEW RULE

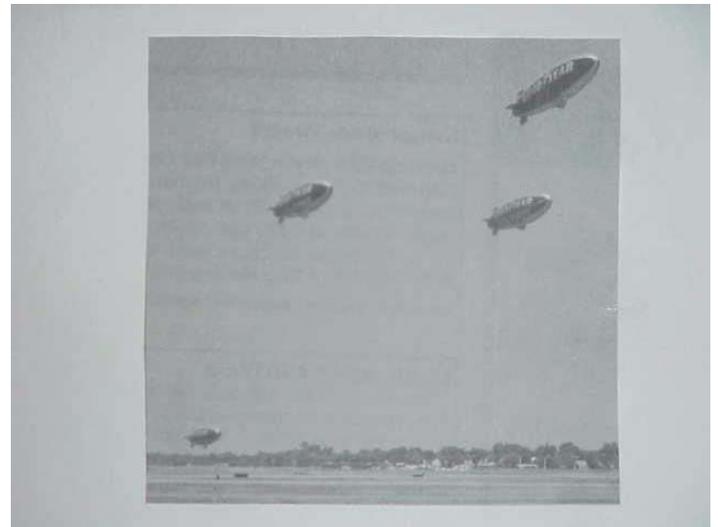
Don't forget, all pilots must carry photo identification (Government issued) along with their FAA pilot certificate and medical during flight operations. The FAA expects the most commonly used photo ID will be a valid drivers license issued by a U.S. state.

JANUARY 1ST 2003 MEMBERSHIP DUES

Chapter 55 dues are \$25.00 per year for renewing members and for new members. Make your check out to EAA Chapter 55 and send it to our Treasurer, Gregg Cornell, 639 Orchard St., East Lansing, Mi. 48823 or hand it to him at the meeting on Sat.

Remember, you must be a member of the National EAA and have a registration number to be a member of Chapter 55, otherwise your check will be returned to you.

WHAT'S THAT NOISE



On 9-8-02 at the Detroit City Airport, 4 of the Good Year blimps made an unscheduled "high speed" formation pass

CHRISTMAS – LAST MINUTE SHOPPING?

Looking for ideas for a person on your shopping list?

EAA has a Complete Collection of Sport Aviation Magazine available on CD-ROM. The CD set provides works from 1953 to 2001 (roughly 600 issues). Advanced search capabilities allow for easy research. Priced at \$149.00; visit <http://shop.eaa.org> for details.

Exquisite Designs (out of Grand Rapids) has a collection of exciting mahogany wood carvings. Aircraft designs range from the Piper Cub to the C141 Starlifter - and include many classic military aircraft. Helicopters, automobiles, motorcycles, and musical instruments are also available. Their website www.exquisite-designs.com provides pictures and details. They also have a booth on the concourse at Meridian Mall – Lansing with many models on display (and I noticed prices were discounted on models stocked there).

- Vickie Vandebelt