

CHAPTER 55 EXPERIMENTAL AIRCRAFT ASSOCIATION

SEPTEMBER 2006



Meetings are the 2nd Saturday of each Month

EAA Chapter 55 Hangar - Mason Jewett Field – 649 Aviation Drive, Mason, MI 48854

Pres: Bill Purosky 214-2729 Vice Pres: Tom Botsford 663-1318 Treas: Sharron Hacker 623-6476

Secr: Del Johnson 676-2756 Editor: Warren Miller 393-9385 (all Area Code 517)

Climb and Maintain Flight Level 55

Well, Mason Aviation Day is behind us and I want to thank all the members of Chapter 55 who helped with this fantastic event. Since we didn't have a coordinator for the event, I want to especially thank the Board of Directors who planned and executed this fun event for the Chapter.

For those of you who were not involved, I feel sorry for you. You missed a great opportunity to interact with other members and local people that attended as well as other aviation enthusiasts who flew into our airport to enjoy themselves and support our cause.

To give you some idea of what we accomplished, we served about 385 breakfasts, 130 steak dinners, 137 BBQ sandwiches and 65 hot dogs.

The money earned will most likely cover the roof repairs on the builders' hangar. Unbeknownst to us, there has been a leak on the west side of the roof that has basically destroyed the particleboard and must be replaced. So if you are so inclined, plan on some time in the very near future to help replace or repair it with a few of our other members. I'm sure Doug Koons and I will be intimately involved with the job.

Speaking of Doug Koons, we will be having another Young Eagles day on September 9th and need help from people willing to work on the ground as well as pilots who will fly some Young Eagles. Plan on joining us right after the meeting, weather permitting. Doug is our new Young Eagles Coordinator. Please contact him or myself if you can help in either capacity.

On another note, Dick Bacon has agreed to run the Nominating Committee again this year but can use a couple helpers. Please contact Dick if you are interested. We will be electing the Board of Directors at large this year. They serve two years in a term.

Bill Purosky
President

BREAKFAST W/CHAPTER 55

<u>September Team</u>	<u>October Team</u>
Carl Dalrymple	Pete Chestnut
Richard Haas	Dave Groh
Steve Meyer	Fred Honhart
Steve Remy	Ernie Lutz
Al St. George	Terry Lutz
	Drew Sequin
	Doug Simons
	Bart Smith

EAA Chapter 55

Board of Directors Meeting, August 9, 2006

Bill Purosky called the board meeting to order at 7:25pm. Attendees: Bill Purosky, Vickie & Ken Vandenberg, Dave & Debbie Groh, Jack Toman, Doug Koons, Tom Botsford, Deanna McAlister, Sharron & Chuck Hacker, Gary Long, Del Johnson and Dick Bacon. →The minutes were approved as published in the newsletter. →Sharron reported \$1,002 of net income for the month and total assets of \$18,981.80. A discussion followed regarding the method of accounting for the monies held for the scholarship fund. The Treasurer's report was approved with the exception that the report be modified to show a line item for the scholarship money. →Vickie reported that she was unable to reach Leah Voelker and Don Chubb regarding their national membership status. →Doug Koons reported that 60 Young Eagles were flown on July 8th. The next Young Eagles day is tentatively set for September 9th. Vickie suggested that we have a signup sheet at MAD so that people can sign up to be notified when the next Y.E. day is scheduled. →Bill reported that the Chapter is still in need of filling chairperson positions for the Social Committee, MAD and Program Coordinator. →A motion was made and passed to install a dead bolt on the door between the meeting room and the hangar. →MAD planning details were discussed including food items and food prices, water testing, booths, PA system setup and advertisement costs. A follow-up meeting was scheduled for Thursday evening to deal with last minute MAD details. →A question was raised about

storing gas in the hangar. The board needs to look into whether it is permissible under the airport lease agreement. If it is, the board will look into purchasing a fireproof cabinet for storing gas. →The election committee needs to be set up for the fall elections. →The Lansing Public Access Producers wants to do a series of video programs about Chapter 55. Six to Nine half hour episodes would air on cable TV. They are looking for a donation from our Chapter to support this effort. The Board decided not to pursue this opportunity at this time. →A roof leakage problem has been reported in the workshop. →The annual insurance on the building has been paid. →The meeting adjourned at 9:08.

EAA Chapter 55

Business Meeting, August 12, 2006

The meeting was called to order at 9:30am. →Following the opening of the meeting with the national anthem, it was reported that military veterans are now suppose to salute the flag when the National Anthem played. →The minutes of the July meeting were approved as published. →Sharron Hacker reported \$1,002 of income during the month and total assets at the end of July of \$18,981.80. The Treasurer's report was approved. →Doug Koons asked for pilots to volunteer to fly Young Eagles on September 9th following the regular scheduled meeting. Four or Five people volunteered. →Tony Schepis invited the membership to an open house on August 26th at the new airpark that he has developed. →Bill went over plans for MAD and areas where we needed volunteer help. →The hat and shirt sale was discussed. Members interested in purchasing these items should see Sharron Hacker. →Five or Six members expressed interest in getting together at the hangar over Labor Day for a picnic/barbeque. →The Board decision to install a lock on the door to the hangar was discussed. →Dick Wilke encouraged everyone to attend the Great Lakes Folk Festival in E. Lansing during the weekend. →The meeting adjourned at 10:20.



Pilot Scott Adams, Artist Connie Stewart, photo by Deanna McAlister. LOL - aint that cute..... It was done for the Mason Aviation Day to WELCOME pilots.

TIDBITS, MAY 2006

By Vickie Vandebelt

JACKSON MODEL ROCKETRY CLUB:

Roger did a nice booth at MAD and I've included some contact info here and will put a copy of his flyer up at the hangar. He sends the following: "Just a 'Thank you' for the invitation to the fly in. It was a lot of fun and had a good time talking with everyone that stopped by to look at the rockets on display. Of all things - I even met a fellow that worked on the V2 that were brought to the US after WWII. He was in the Army and worked at the White Sands Missile Range in New Mexico. He worked for Werner VonBraun. Of course, VonBraun became America's chief Rocket Scientist that took us to the Moon with the Apollo program. The day was completely worth it; if I had not talked with anyone else, that would have been fine after meeting this fellow. He was very interested in the rockets that were on display and even hinted that he wanted to attend one of our upcoming launches."

Roger Sadowsky

www.jmrconline.org

COMMENTS FROM ATTENDING PILOTS:

We had a great turn out with 49 registered pilots plus a few more. We had some great door prizes for the PIC. Here's a few comments I received upon notifying the winners

"Thanks for a great breakfast."

"I loved attending your fly in. It has to be one of the best in the state. Can't wait for next year."

"Thanks for a great fly-in. My wife and I had a great time talking with people there."

"This was our first Mason fly-in, and the steaks were fantastic."

"Thank You! It was a great Fly In."

"I have been to the Mason August fly-in two times now since moving to Michigan and really enjoyed being there. I like the airport and usually stop in there to refuel before returning to Jackson where I hangar. The EAA group there is great too, I wish I was closer so as to join it."

CLASSIFIEDS:

FOR SALE – AVON PRODUCTS:

For a copy of the latest brochure, contact Deanna (McCreery) McAlister at 517-596-2506 or www.naturalbeautysoaps.net/deanna

WE COULD HAVE INSERTED YOUR AD HERE !!!

Contact Vickie for next edition!!

Don't forget – if you have a FOR SALE or TRADE; WANT TO BUY; NEED TO BORROW; FREE to GOOD HOME; etc. – we have space for you in our newsletter. Contact Bill, Warren or Vickie!!

Young Eagles

By Doug Koons

Saturday after the meeting from 10 to 2 (9/9), we will be flying about 40 kids from the VFW home. We need ground crew, pilots, and planes. We also need some staff to cover the sign-in table. Please plan on helping for these children. Thank you. Doug

Notes from Cape Juby

**By Terry L. Lutz, Chapter 55
Flight Advisor**

Sometimes these notes have some really great subjects that cover two pages quite nicely, and then are times when a lot is going on, and it's all interesting. This month, a lot of interesting things popped up, and I know you'll find them interesting.

First, earlier this year, you may have heard about some truly amazing work by some South African pilots flying the T-6. Someone sent me a group of pictures that show these guys flying in 4 ship formation with the gear down. What makes the flying so amazing is that all 4 airplanes have their tires in the water, and they are literally water-skiing in formation. It would be one amazing bit of flying to have *one* airplane with wheels in the water. But here there are 4 airplanes, and three of the pilots are flying with wheels in the water *and* flying formation off the leader.

I looked carefully at the pictures to find out if they had been altered in some way, but after carefully checking, it was in fact 4 different airplanes all in formation.

I had heard that there was a video of these four T-6s in the water somewhere on the internet, but couldn't find it myself. But fellow chapter member Bart Smith found it on the internet, and here is the web site: <http://www.havasreti.com/images/harvards.wmv> The flying is simply amazing, and they almost make it look easy (it isn't!). It would be a lot of fun to get a copy of this video and run it on our magic projector on meeting day. Anyway, enjoy!



The August issue of Sport Aviation included an article about flying wings. I hope you took the time to read it, because flying wing aircraft are truly fascinating. Every airplane has two primary design considerations in the pitch axis, balance and stability. Balance means that you can fly the airplane in trim, and not have to hold enormous control forces in either direction to keep the nose where you want it. Stability means that if you disturb the airplane from trim, the initial tendency will be for it to return to trim. This is not easy to do with a flying wing.

A flying wing is automatically challenged because there is no fuselage and no tail, which produces a small force from the stabilizer over a long moment arm to keep the airplane in balance. It's easier to use small forces, and they will allow a generous center of gravity range. But then the fuselage and tail combination represents both more drag and more weight. The flying wing uses two methods to provide balance. It can either have a trailing edge that's reflexed up (used with a straight wing), or built-in twist so the wing tips are slightly downloaded (used with a swept wing). In either case, a flying wing can't trim over a very wide range of cgs, and pitch control suffers at high angle of attack because the elevons are in the separated airflow from the wing. It is the position of the cg on a flying wing that also provides stability, so stability margins are less than desired, unless you add some fly-by-wire magic.

So why study flying wings at all? Actually, there are some pretty famous flying wings around that you probably never thought of. The first one that comes to mind is the Concorde. For years, the Concorde flew the Atlantic at Mach 2, but it wasn't easy. When the airplane went supersonic, the center of pressure shifted from 25% mac to 50% mac. The airplane could still balance, but the elevons had to be deflected nearly full up to maintain trim. The solution was to move the cg aft by pumping fuel through a fairly large pipe to get the cg where it needed to be. The process had to be reversed when slowing back to subsonic speeds.

The other airplane we don't think of as a flying wing is the Space Shuttle. The NASA boys can't shift the cg by pumping fuel, and the Space Shuttle flies several times the speed of sound. So the cg is managed by carefully locating the load in the cargo bay. Still, the cg will vary, and the weight will vary as well. On atmospheric entry, the airplane is maintained in trim with the body flap. The body flap is located on the fuselage centerline, right under the nozzles of the Space

Shuttle main engines (those big, bell-shaped gizmos...). Using the body flap for trim allows the elevons to be maintained in a neutral position, which helps control heat loads and maintains the optimum aerodynamic shape for entry.

On the other end of the speed scale are powered parachutes, hang gliders, and the like, which also require balance and stability, without a fuselage and tail. One tailless glider is worth mentioning, and that is the BKB-1 that was designed by Stefan Brochoki, and built by Stefan, Alfred Bodek, and Witold Kasper (this sounds like your typical homebuilt project, doesn't it?). What Stefan Brochoki was trying to do was take the Horten flying wing designs from WWII, and improve on them. The BKB-1 first flew in Ontario, Canada in 1957. It had a 29:1 glide ratio, which was quite good considering that the airplane had an aspect ratio of 10:1 (meaning that the glider didn't have exceptionally long wings, but it had very good performance at the time).

Directional control on the BKB-1 was achieved with rudders at the wingtips. The rudders could also be used as speed brakes by deflecting them together to produce drag. The rudders appeared as endplates at the wing tips, and they are at the heart of something that aerodynamicists have been trying to understand for a long time. The BKB-1 was flown in Canada for a short time, then Stefan Brochoki sold it to Witold Kasper, who had since moved to Seattle after landing a job with Boeing. Kasper was an exceptional pilot, and made some modifications to the airplane, eventually renaming it the BKB-1A. Among the modifications were some changes to the rudders on the wingtips, and removing some ballast to give the glider a more aft cg.

Kasper began to do aerobatics in the BKB-1A, and was observed to do loops in essentially the length of the fuselage. This is pretty small, as you can see from the picture, and some people have described the loop maneuver as "tumbling". This tumbling, however, could be done under complete control. The question was (and still is), how did Kasper achieve this tumbling phenomena?

I have read some technical articles about the BKB-1A, and they suggest that Kasper had discovered that a vortex could be formed over the wing, in which the air flowed over the wing, then up and forward again before flowing once again over the wing. Think of it as a horizontal dust devil spinning span-wise over the wing. The convenient thing is that if such a vortex existed, it would produce lift over the wing at very low speed. It was thought that Kasper discovered a way to control the vortex with the location and angle of the wing tip mounted rudders. Properly positioning the rudders in the drag mode could produce the vortex, since on most sailplanes, there is some span wise flow, particularly at the trailing edge. Those familiar with the Discus family of sailplanes know that the segmented leading edge was designed to eliminate this span wise flow. Kasper was using it to his advantage to produce the vortex.

A film was made of Kasper flying the BKB-1A, and performing the tumbling maneuvers that most of us have read about, but never seen. Stefan Brochoki's daughter, Stefanie now lives near Toronto, and apparently has the film of these maneuvers. A friend of mine (and U of M classmate), who also has an interest in the BKB-1 contacted Stefanie and asked if we could have an electronic version of the film. If we are lucky enough to have a

look at it, I will be sure that you get to see it, too. For more information about the BKB-1, try the following web site: <http://1000aircraftphotos.com/Sailplanes/1002.htm>

On a final note about flying wings, I was in a German glider club learning to fly gliders and saw one of the Fauvel flying wing gliders mentioned in the Sport Aviation article. I remember my instructor pilot, Herbert Marx flying the Fauvel and doing some excellent and graceful aerobatics in it over the airfield at Bexbach. It was very disheartening to me to learn some years later that due to inspection requirements on the wooden structure of the Fauvel, the club had a nice party and burned it!!

OK, don't burn your airplanes, but do remember to help your fellow pilots when they need. And sometimes, they really do!

GREAT NEWS!

by Dick Wilke 9/03/06

After nearly four summers of building, my RANS S-6S Super Coyote II was nearly ready. I called Ted Gauthier, the FAA Designated Airworthiness Representative, and he arrived in his red RV-6 yesterday morning at Chapter 55 to perform the inspection. He was very professional and thorough, and quickly went over the paperwork and the inspection. He made several worthwhile suggestions and one mandatory one: I had forgotten to safety wire the gas collator. I was very glad he noticed that! He seemed pleased with the airplane and the workmanship, and happily for me, signed it off. What a great feeling! Ray Fink had gotten to the hangar early and switched the planes around so mine was in front. Ernie Lutz showed up, after helping with the last minute safely wiring the day before.

I want to thank all my friends at EAA 55 who have offered comments or suggestions or lent a helping hand. In particular, Ernie Lutz, my old friend from the electrical business, who invited me to join the Chapter, has made space available to store the project during three winters, and has always been ready to help when he was needed. Also, thanks to Bob Smith and Dave James, who have hauled the project back and forth to the airport from my garage. Bob's Technical Counselor Reports were a big help in the approval. Thanks to Jack Toman, Dave Cook and all the others who have stopped in and shared their ideas. And thanks to the Chapter for providing the hangar for final assembly of my bird, where hopefully others watching the process may be inspired to start their own projects. What a great Chapter!

MASON AVIATION DAY AUGUST 20, 2006



The breakfast line



Ted Lakin, Weatherman and MC enjoying his tower



Some of the 49 registered pilots' planes



Pilots and friends enjoying a great breakfast



Oshkosh winner, Best war bird, an L19 Birddog

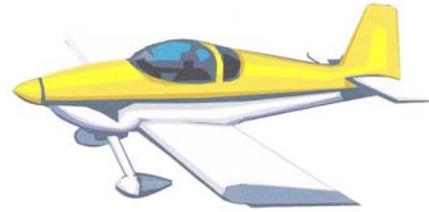


Accountant Dick Bacon and Cashier, Sharron Hacker

Pocket Calendar:

9/7-9/10 Michigan Air Tour
9/10 Fowlerville – Breakfast
9/10 Marshall – Pancake Breakfast
12/9 Chapter 55 Christmas Party, Vevay Twp Hall

Pancake Breakfast Fly-In



Sunday, September 17th
7:00 am—11:00 am

Midland Barstow Airport (3B5)
EAA Aviation Education Hangar
\$6 Adults, \$3 Kids.

Pancakes, eggs, sausage & more.
See the Airplanes, Classic Car
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