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## Experimental Aircraft Association - Chapter 55 November 2003 Newsletter

Meetings are the 2nd Saturday of each Month

Chapter 55 Hangar - Mason Jewett Field

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

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### Climb and Maintain Flight Level 55

The first thing I would like to do is welcome the new Chapter 55 members; Jim Cushing and Edward Manturuk - a big welcome to both of you!

Elections are coming up in December. At the last meeting Sharon and Chuck Hacker volunteered to be the election committee to canvas the Chapter members for candidates. So expect to get a call. The open offices are President, Vice President, Treasurer and Secretary.

The new lock has been installed by Doug Koons. The new combination is **available to be announced at the meeting** - toss your keys, you won't need them.

The Chapter has a new coat of paint and "*boy is it blue*". I got a call about it on my way to work last Saturday night. I could not get out to see it until Sunday afternoon and by that time the painter had it three quarters done, a little late to stop him. It won't be hard for people to find the Chapter; just tell them it is the **bluest** hangar on the field.

Christmas dinner is Saturday December 13, 2003 at the Vevay Township Hall. Bob Smith and Debbie Groh are handling the catering arrangements, so let them know if you are going to attend and how many will be in your party.

See you at the meeting. Remember when you go flying take a chapter member with you. *Mike*

**Board of Directors Meeting**  
**Wednesday, November 6, 2003**  
**7:00 pm at Hangar**

**Members Meeting**  
**Saturday, November 8, 2003**  
**8-9 am - Breakfast**  
**9:30 am - Chapter Meeting**

**TEAMS**

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### November Team

Gary Nesbit	Joe Pirch
Tom Schroeder	Leo Holmes
Kurt Curtiss	Steve Kent
Bill Landucci	Ron Filtz

### EAA Board of Directors Meeting

#### Board of Directors Meeting – October 8, 2003

The meeting was called to order at 7:10 on October 8, 2003. → Attendees were President Mike Arntz, Vice President Gary Long, Treasurer Greg Cornell, Secretary Drew Seguin, Renee Arntz, Doug Koons, Ernie Lutz, and Bill Purosky → The Treasurer's report was presented and approved → We still do not have a web page editor. Some maintenance is being performed and the site is up but we need an editor to keep it up to date → Young Eagles: We flew 47 Young Eagles in September. This brings the year to date total to 410 and the program total to 1532. → We have received 3 bids on painting the Chapter 55 Hangar. The board approved a bid for \$1,800 to do the work. → Drew S. got some preliminary quotes on a replacement hangar door. Doug Koons will get some engineering work done on the truss work that will be required. It was decided to proceed with this plan but to hold until spring to actually replace the door. → The eavestroughs will be replaced when the painting is complete. → Doug Koons researched and got special pricing of \$375.00 on a commercial door lock. The board approved proceeding with the purchase and installation. → Motion was made and carried to spend \$208.00 on a new on-demand water heater. → The Christmas Dinner will be held at Vevay Township Hall on December 13, 2003. We will have a cash bar provided by the caterer. Dave and Debbie Groh and Bob Smith will be making arrangements. They will target \$15.00 per person. → Motion was made and passed to transfer \$2500 to the LCC foundation for the Newberry Scholarship. Gregg Cornell will administer the program. → Elections are to be held at the November meeting.

We have no canvassers yet. The meeting was adjourned at 8:30 PM.

## EAA Chapter 55 Business Meeting

### Membership Meeting – October 11, 2003

The meeting was called to order at 9:30 → There were 44 members and guests present. → The Treasurer's report was presented by Renee Arntz and approved. A suggestion was made to put some of the funds into a certificate of deposit. → Mike announced plans to have the hangar painted for \$1800. There was discussion on the plans to replace the hangar door next spring. Mike announced plans to replace the door lock with a keyless entry unit. Once installed, the code will be made available to members only. → Mike went over plans for the Chapter Christmas party on December 13. We will invite a few guests, including Airport Manager Connie Kowak, and CRAA Director Tom Seilig. → Young Eagles: See above. We have been approached to do an event as part of the covered wagon trip for children next July. Renee will act as coordinator for the event. → We still need a volunteer to act as Chapter 55 Web Editor. → There will be elections in December for Chapter officers. Chuck and Sharon Hacker agreed to canvass the membership for candidates. → Mike announced the decision to donate \$2500 to LCC for the Newberry Scholarship → Chapter 1056 is sponsoring a flight rally on October 25. Grand Ledge is having a dawn patrol on October 12 → We have a problem with things accumulating in the Hangar. Members should ask Mike A. before dropping things off. Anyone with personal items in the hangar should work to get them out of there. We are running out of space. → Ted Lakin suggested Chapter 55 join the Mason area Chamber of Commerce at a cost of \$75.00 → Mike indicated that the Zinc Chromate paint that is in the hangar is available to anyone for the taking. → The meeting adjourned at 10:37

## Notes from Cape Juby

### By Terry L. Lutz, Chapter 55 Flight Advisor Centennial of Flight Edition - Part II

Part II chronicles the living histories presented at the 47<sup>th</sup> Annual Symposium of the Society of Experimental Test Pilots. Pilots, designers, and engineers spoke about the events that shaped history. They were there; they experienced it first-hand, and before their voices become silent, they were telling the stories.

While the Wright Brothers are considered to be the first to successfully fly a heavier than air machine, two other experimenters told stories about lesser known attempts at flight, which, by eye-witness accounts, did leave the ground. Whether or not they flew under reasonable control is another question. Horst Phillip updated us on a story we heard two years ago. It was about the Gustave Whitehead No. 21 machine, which flew in New England in 1898. Mr. Phillip built a replica of the Whitehead machine, flying it first as a glider, and adding power once the characteristics were understood. The first powered flights were not successful because full power exceeded the control capability of the airplane. Using partial power, however, repeatable straight-line flights with reasonable control have been possible.

Claudius Du Berthe described another airplane, the Eole, designed and flown in France by Clement Aders around 1900. A replica of this airplane was also constructed and flown in

France, under power, and with limited control. But the proof of success is that through diligent engineering and careful experimentation, the Wright Brothers found the formula for powered flight with positive control. They continued their experiments beyond those 4 flights in 1903, until they could take off and circle Huffman Prairie near Dayton, under complete control. The era of the airplane had begun.

X-15 test pilot and rocket pioneer Scott Crossfield outlined EAA's efforts to successfully fly a replica of the original Wright Flyer at Kitty Hawk on December 17<sup>th</sup> of this year. The team headed by Ken Hyde has extensively studied the Wrights, and tried to develop an understanding of the early Wright experiments by constructing and flying replicas of all the early Wright gliders. (If you remember, Crossfield himself was flying one of the gliders last year. While out of ground effect, and on release from the tow vehicle, Scott landed a bit steeply and pitched himself out onto the grass!!) This summer, they flew a replica of the 1903 machine, and are very confident that they understand its flight characteristics. With an engine installed, they should be ready to fly at Kitty Hawk.

The US Park Service has allowed Scott an 800-foot diameter circle to operate in. They plan to install 3 rails, so they can pick the one that is lined up directly into the northeast wind that they hope is blowing at 27 mph. Scott has the final authority on "weather" or not they'll fly on December 17<sup>th</sup>. He's either going to be very popular, or a lot of people are going to be very upset. It's a long trek to Kitty Hawk, and the press has a short attention span.

Bob Hoover, Chuck Yeager, and Bob Cardenas gave us some insight on the events leading up to the first flight through the sound barrier. Hoover and Yeager we know pretty well, but Bob Cardenas was the test pilot flying the B-29 aircraft that launched Yeager and the Bell XS-1 into the record books. As you know, Yeager and Hoover were both assigned to Wright-Patterson AFB after WW II. They were always dogfighting with each other, and max performing all manner of airplanes. When the XS-1 program began to take shape, Hoover was assigned to the program. Then he buzzed the airport at Springfield, Ohio and had to answer to the Commander about it. Asked if he had buzzed the airport, Hoover replied, "Yes, Sir." "Hoover," the Commander replied, "I know two things about you. First, you're irresponsible. Second, you're honest. But you're no longer the lead pilot on the XS-1 program."

Always the gentleman, Hoover said that he was crestfallen. Not because he would be the backup pilot, because he wanted to be sure that a good test pilot was picked to do the testing. He said he was overjoyed when Yeager was assigned to the program, because he knew Chuck was perfect for the assignment, and they would still be working together. So Hoover flew chase for most of the XS-1 missions, and would have eventually have flown the XS-1 had he not broken both legs after bailing out of a P-80.

Cardenas recounted that prior to drop on every mission, Hoover would fly under the B-29 in his P-80 about as fast as it could go and pull up right in front of the nose, so close that the whole B-29 shook from his wake turbulence. "It scared the living daylights out of us, even though we knew it was coming." On the third glide flight, Hoover buzzed them just before launch,

and the two of them ended up in a dogfight, Hoover in a P-80 and Yeager in the XS-1.

On the first powered flight, Yeager fired all 4 rocket chambers, accelerated to Mach .85, did a roll, shut the rockets down, zoomed down the runway at Edwards at 500 mph, fired all 4 chambers again, pulled up, did a roll, and landed on the lakebed.

Jackie Riddley wrote the flight test report and got Yeager into hot water because the flight was only supposed to go out to Mach .82. Yeager said to Riddley "Why did you put that in the report?" To which Riddley replied, "You told me to write it, I just put down what you did!"

Yeager and Hoover understood compressibility, because they were flying the P-80 regularly and when they got it up in the Mach .88 to .94 range, they would begin to lose elevator effectiveness. Yeager took the XS-1 up to .94 on one of the powered flights, pulled 3g to accelerate the flow across the tail, and noticed that he was beginning to lose elevator effectiveness. He figured that to have any kind of pitch control close to Mach 1.0, they would have to find a way to control the leading edge of the stabilizer for pitch control. The XS-1 used nitrogen pressure for almost everything, so they rigged up a pneumatic motor on each side of a jackscrew to trim the stabilizer. On the 9<sup>th</sup> powered flight, Yeager went supersonic with a rock stable airplane. The lesson, said Yeager, was that "To go supersonic, you need to have a slab tail."

As a side note to history, 10 days before that first supersonic flight on October 14<sup>th</sup>, 1947, the United States Air Force became an independent branch of the armed forces. The Navy was giving the fledgling Air Force a hard time about the XS-1, saying that it wasn't really an airplane because they had to drop it from the B-29. So the day before the Navy's D-558 made it's first supersonic flight, Yeager and Riddley figured how much fuel they would need to carry to take off from the lakebed and still be in weight and balance limits. Yeager touched off all 4 chambers and it accelerated, well, like a *rocket*, so fast that it broke the push/pull rods on the flaps. Yeager did an immelman right off the deck that topped off at 15,000', and glided back to the lakebed. The Navy was not amused!

The pair did their share of buzzing. Hoover did a roll in the Northrop N-9M flying wing right over Pancho's place. This was after doing a dandy pilot-induced oscillation on takeoff (which he was trying *not* to do) because nobody told him that the rudder pedals also extended the speed brakes on each wing. As a result of all this buzzing, a "No buzzing" order was issued by Col Al Boyd, the Center Commander at Edwards. About a week later, Yeager took off really early in the morning, and decided to buzz Pancho's at about 6 am. When he landed, he got a call from Col Boyd's office to report there immediately. He called Pancho and asked who had turned him in. Pancho told him that Col Boyd had been there all night, and was still there when Yeager buzzed the place. Yeager said, "Well, you better call Boyd and let know we had this conversation." When Yeager showed up at Col Boyd's office, all he could say was "Get Out!"

A lot could be said about Dave Clark during those days. Yes, that's the same Dave Clark that designed the headsets (he passed away about 10 years ago). He made the partial pressure suits

that Yeager and Hoover used for the XS-1 program. Dave also made bras and panties, and when they left his place up in New England, he insisted that they take about 500 lbs of ladies underwear with them. Once airborne in a B-25, they looked at each other and Yeager said, "Can you imagine what people would think if we crashed?"

At the end of the session, Cardenas was making a point about dropping the XS-1, and stated that it weighed 12,500 lbs. Yeager immediately piped and said "No it didn't, it weighed 13,200 lbs." To which Cardenas shot back, "That was with you in it...." Which shows that even today, they are test pilots in search of a competitive edge.

Hoover was always in Yeager's shadow, but they remained steadfast friends. When the restriction on Hoover's medical was lifted, there was a 3-ship of Mustangs flown at Oshkosh. The pilots were Yeager (with his son), Bud Anderson (and his son), and Bob Hoover (with journalist David Hartman in the back seat).

James Gannett (a UM grad) was a test pilot on the Boeing Model 80 (predecessor to the B-707), which was flown this summer to it's final destination at the Smithsonian. It used bleed air across the flaps, and with 80 degrees flap deflection, they could fly final at 80 knots. Jim was on board when Tex Johnston rolled the airplane (twice) over Lake Washington near Seattle.

Pete Reynolds (former Chief Test Pilot at Learjet) told about setting a world time to climb record with Neil Armstrong in the right seat. They took off from Kitty Hawk, set the record, then had to divert into Elizabeth City, NJ and nearly ran out of gas.

John Cashman (a UM grad) described the development of the first version of the B-777. First flight was in 1994, and in 11 months it was certified. In a year and a half, it was certified with 3 different engine types.

Burt Rutan views parallels in early aircraft development with today's access to space. In 1908, the world realized that "these were just bicycle guys", and others began to develop airplanes on their own. Burt views himself as just a bicycle guy, and once he flies into space, the rest of the world will follow.

Eric Brown told about landing a DH Mosquito aboard a carrier, at a heavier weight (20,000 lbs), and higher speed (85 mph) than had ever been brought aboard. Did I mention that he had never previously flown the Mosquito? And in 1947, Eric did the first automatic carrier landing.

Space Shuttle Approach and Landing Tests (flown off the top of a B-747). Joe Engle and Richard Truly told about using a team approach to testing the shuttle Enterprise, because they only had 1 minute and 15 seconds from release to touchdown. Truly set up the test points, and Engle did the inputs. On landing, Engle touched the left brake, and Truly touched the right one. Prince Charles was on hand for the 5<sup>th</sup> ALT flight, which landed on the main runway at Edwards. NASA gave him some simulator time, during which the Prince did a nice pitch oscillation and crashed. On the actual 5<sup>th</sup> flight, Fred Haise used too much pitch control, and which gave ailerons a significant time delay

and he got into a pretty good roll oscillation. Observing this, Prince Charles said, "I feel a bit better now!"

Guy Townsend, who flew the first flight on the B-52, told of a harrowing flight at Edwards AFB. They were doing a heavily loaded takeoff on the lakebed. After a 15,000-foot takeoff roll, they lifted off at 152 knots and the #8 engine failed. And they found that they couldn't retract the flaps. The flew at 150 feet all the way around the valley until they were light enough to climb. It took 45 minutes to get to 1000 feet!

Al White, pilot on the XB-70, said that the drooped wingtips when the airplane flew supersonic were to improve directional stability.

Jim Eastham (first flight on the A-12), Bob Gilliland (first flight on the SR-71 on Dec 22, 1964), and Ken Weir (first flight on the U-2) told us about their test programs (all of them designed by Kelly Johnson, Michigan native, and UM grad). When the YF-12 was flying, an American Airlines pilot saw it on his way into San Francisco. He was met by a lot of people with dark sunglasses, who told him not to say a word about it. A month or so later, the same pilot saw it again, except that this time his copilot grabbed a camera to photograph the high-speed blackbird. The Captain took the camera, and said, "You never saw that..."

Ken Dyson told us about Have Blue (precursor to the F-117). It was a successful test program, but both test assets were lost. The first was due to a landing gear failing to extend. The pilot ejected and got really banged up. The second was a hydraulic failure. Two years after program start, a squadron of F-117s were on the ramp.

Pete Knight told us about the X-15 program. He flew the airplane toward the end of the test program, and in fact was in the cockpit for the 199<sup>th</sup> flight, when it was cancelled due to a freak snowstorm in the high desert. The X-15 never flew again. Pete described what it was like to fly the X-15 with two external tanks and an ablative coating. At launch, because the fuel and oxidizer had different weights, the airplane would require full aileron control. Then when the rocket was lit, for the same reason, it would yaw, requiring nearly full rudder. Pete Knight flew the X-15 to Mach 6.7 and 370,000 feet. The airplane got so hot, it melted the ventral fin, so he couldn't jettison it. And he couldn't lower the flaps. With superb flying skills, and despite being able to see out of only one side of the windshield, he made the landing look routine.

Three of the original 7 astronauts were there, Scott Carpenter, Wally Schirra, and Jim Lovell. Their comment: "The fragility and the beauty of the planet is unforgettable." Gene Cernan spoke about a long space walk in the Gemini program, where he was supposed to don a backpack maneuvering unit while on a space walk. After expending nearly all his oxygen, he was not able to get into it, and returned to the capsule. Once pressurized with his helmet off, Tom Stafford took a look at him and said, "Gene, you're as red as a beet," and began spraying him with water. While it felt good, they had water everywhere in the capsule for the rest of the flight.

On Apollo 7, which orbited the moon, they debated about what to say, and decided to recite the 1<sup>st</sup> verses of Genesis, as they orbited the moon on Christmas Eve. Apollo 10 took them to within 50,000 feet of the surface, which they called "barnstorming the moon." Then on Apollo 11, Mike Collins said how quiet it was in the Command Module as Neil Armstrong and Buzz Aldrin descended to land on the moon. Jim Lovell told us what it was like to fly aboard Apollo 13. What happened was that they changed the electrical system from 28 vdc to 65 vdc, but they never changed the heaters to the oxygen tanks, which were designed for 28 vdc. After a fully fueled test on the launch pad, they tried to defuel the tank but the LOX would not flow out using the normal method of purging it with gaseous oxygen. So the decision was made to boil off the oxygen by turning on the tank heater. The thermostat tried to turn the system off at 80F, but with 65 vdc flowing through it, the contacts welded shut. The tank actually went to over 1000F, but nobody noticed because the gauge stayed at 80F and the voltage wasn't checked. The same scenario played itself out in-flight when they turned the tank heaters on as they neared the moon. Only this time, the oxygen could not boil off, and the tank exploded. Jim Lovell said that if the tank had not exploded 250,000 miles from earth, they could not have returned. Any earlier and they would not have the oxygen or power to go out to the moon and back. Any later, and they would have expended most of their power and supplies after the moon landing, and would not have made it back.

This living history, as I have recounted it here, will likely never be told again by the people who experienced it. In this 100<sup>th</sup> year since the first powered flight, we can be thankful to be here, at this time, and at this place, to reflect on how far we have come in aviation.

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This year has also been an unusual one for me. I have flown a few very interesting airplanes, two of which are shown here. They are the Embraer 170, which I flew in Brazil in mid-October, and the B-777-300ER, which I flew in Seattle on October 24<sup>th</sup>. That huge engine on the B-777 is the GE90-115B, which produces 115,000 lbs of thrust. The nacelle diameter is about the same diameter as the fuselage of a B-737.

Remember to give thanks this month for all your blessings and the company of friends and family about you. Fly safe, and always remember to lend a hand to your fellow pilot when they need it.



EMB 170 on ramp at Sao Jose dos Campos, Brazil



GE90-115B (115,000 lbs thrust) engine with 3D aerodynamics in the carbon fiber fan blades. The engine nacelle diameter is the same as that of a B737.



B777 on the ramp at Boeing Field..  
Those are people on the ramp - not ants.



Last Month's Cooks: Ken VandenBelt, Joe Pirch, Chuck Hacker, Vicky VandenBelt and Sharon Hacker

**If you wish to sign a petition for Meigs Field see the following link provided by George Moore:**

<http://www.petitiononline.com/MEIGSPLN/petition.html>

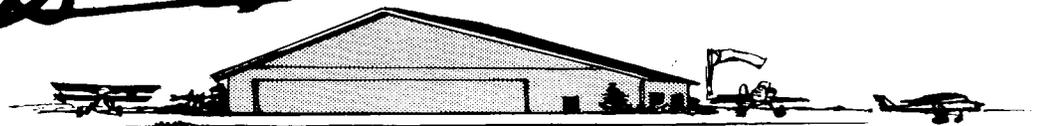


Members enjoying last month's meeting!



A Dragonfly Visits Chapter 55

*Wingtips* →



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