



THE LEADING EDGE

NEWSLETTER OF MUROC EAA CHAPTER 1000

Voted to Top Ten Newsletters, 1997, 1998 McKillop Award Competition

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<http://www.eaa1000.av.org>

April 2005

Chapter 1000 meets monthly on the third Tuesday of the month in the USAF Test Pilot School Scobee Auditorium, Edwards AFB, CA at 1700 or 5:00 PM, whichever you prefer. Any changes of meeting venue will be announced in the newsletter. Offer void where prohibited. Your mileage may vary. Open to military and civilian alike.

This Month's Meeting:



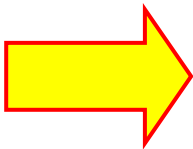
1942 All Over Again

B-17G Fuddy Duddy

Tuesday, 19 April 2005

1800 hrs (6:00 PM Civilian Time)

William J. Fox Field
Lancaster, CA



"Pilot to Bombardier, you're flying her!" "Top Turret to Crew, bandits, Twelve o'Clock High!" Yup, this month you get a special treat. Attending the chapter gathering will earn you the opportunity to utter those famous lines while staring out from the crew positions of your mighty Flying Fortress.

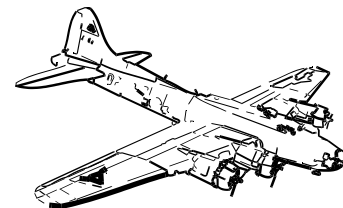
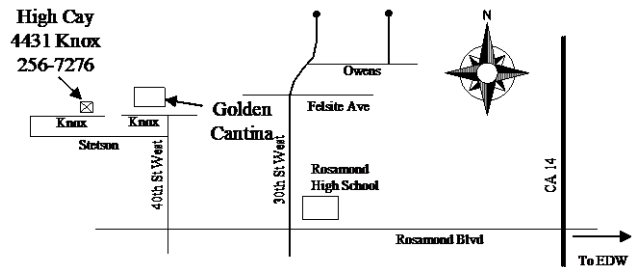
Due to an odd alignment of the planets, EAA's (stand-in) B-17G "Fuddy Duddy" will be on the ramp at Fox Field during our normally scheduled meeting night. Thus, your Kommandant has arranged (with concurrence of Vice-Komm Knife) for us to meet at the Fox Terminal Building at 1800 hours to schmooze with the Fuddy Duddy's crew and tour this magnificent fighting machine.

After this memorable opportunity to touch history, we will retire to the famous High Cay aviation resort complex to partake of appropriate high-fructose snacks, burgers and dogs hot off the grill.

As is our usual custom, we will also be hosting the USAF Academy Cadets out for their semi-annual visit to Edwards AFB. Note the change in meeting time and place! See you at the meeting!

For details on this historic airplane, visit www.b17.org.

- George "Knife" Gennuso
Vice Kommandant



Fourteenth Annual Scotty Horowitz Going Away Fly-In 21 May 2005 at Rosamond Skypark

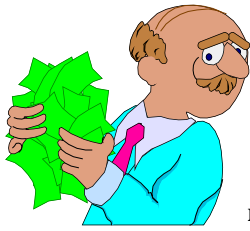
We here at *The 'Edge'* are nothing if not consistent! In March 2004 we gave you a date in 2003. Therefore, last month we once again gave you a date in 2003, but at least this time the number of the day (21 May) was correct. So you can forget about that buffoonery and start making your plans to be there!

If anyone can figure out how to get in touch with Scott now that he has retired from active astronaut-ing, we might even convince him to be there!

Make your plans to attend now! Volunteer your services to help out before the board assigns duties to you!

HEY DUES DELINQUENTS!!!

You're being cut off!



Yep, this is your last newsletter. You can, of course, still avert this disaster by forwarding your dues check (\$20) in according to the directions on the last page.

This is the last time we'll remind you. You're on your own now.

We'll publish the 2005 Chapter Roster in the May newsletter.

Final Flight – John Burchak

John Burchak was a charter member of EAA Chapter 1000 and a controller at SPORT. I remember my first flight to a major fly-in, Copperstate '92, was with John in his Cessna 172. It was on this flight that **Jim Piavis** took a rather interesting picture of the “moon” rising over Needles (see <http://www.eaa1000.av.org/ppolice/moonrise.htm>).



John Burchak with Bob Waldmiller at Copperstate '92

We recently received this surprising message, since several of us had seen John less than a month before:

“To the friends and flyers of **John Burchak**,

We at SPORT Air Traffic Control Facility are spreading the sad news that **John Burchak** passed away last night, Monday, April 4th, in his sleep at home. Although we are not yet sure of all the arrangements that will be made, there is sure to be a memorial in his name in the area; likely at Edwards AFB or in Apple Valley. If you wish to receive more information of the details that are to come and of any services that will be held, please e-mail me or you may call me at home 661-256-2421 or any of the controllers at SPORT Air Traffic Control Facility: 661-277-6184.

It goes without saying that the loss everyone feels within the aviation community, pilots and controllers alike, goes so very deep. If there are any stories you wish to write up about your experiences with John, please send them my way so that they may be shared with everyone who could use the smile; he will be sorely missed.

Sincerely,
Christy Collins
SPORT Air Traffic Control Facility
Edwards AFB, CA
cksgirl@aol.com”

Last Month's Meeting

EAA Chapter 1000
High Desert TRACON
Edwards AFB CA
15 March 2005
Gary Aldrich, Presiding

*(as told by **George “Knife” Gennuso** to **Kent “Cobra” Troxel**, pretty much word for word...paragraph breaks added to moderately improve readability...)*

We had a meeting at **High Desert TRACON** at Edwards AFB. It was fun. We met at the Edwards TPS activity room and had chips and dips and sodas and cookies, just like we always do. Mmmmm, mmmmm, Yummm, Yummm. Boy that **Knife** can sure put on a spread. He’s really good at it because he does it all the time, so he should be.

Before we knew it, the snacks were gone and it was time to go to the High Desert TRACON facility. But it turned out that it was not the same place that we went to a few years ago. **Mark Heinrich** met us at the door and explained that we were at the new facility, the one we went to last time was the old facility. The new facility was really swell. They had a nice big conference room that we all sat in. They gave us a Powerpoint® presentation on the great big shiny screen at the end of the conference room. **Susan Marmet** ran the slide show and **Mark** talked. Then **Susan** talked and **Mark** watched.

There were several videos in the presentation. The one we especially liked was the one where the F-16 misses the Cessna 172 by 50 feet on a head-on. They had a very long version that included the conversation between the controllers and the F-16 pilot telling him about the Cessna. I guess sometimes you just don’t hear stuff. We also liked the one where the Jack-In-The-Box tells the doofus customer that “THERE AIN’T NO FREAKIN’ FRENCH FRIES!” I guess sometimes pilots call them to order fast food but they’re not allowed to order French fries. **Knife** thinks it’s because the oil on their fingers would smudge the radar scopes.

Then we went downstairs and watched the controllers vector airplanes around on their screens. They answered a lot of our questions and even offered answers to questions we didn’t think to ask, which was very courteous of them, and not at all like some of the controllers that we’ve talked to on the radio. They said sometimes they get bored and say things to the pilots like “turn right...turn left...turn

right” just for fun. Or, “turn right...turn right...turn right...are you dizzy yet?” Hah, hah, hah! We all thought that was really funny. Nothing like that has ever happened to any of us. Then they got tired of us after a while and so we left.

Before we left Susan said that the briefing that we just had counted for the FAA’s WINGS PROGRAM and asked if anyone wanted the official paperwork. Everyone yelled out “Me, me, me, me!” like a bunch of school girls. Susan was very impressed with our professionalism. So, we all got the paperwork and were feeling really happy. Then to end the meeting, Houdo brought a couple of Chapter 1000 patches (still only \$5—get ‘em while they last!) and the Kommandant presented them to Susan and Mark as a gesture of our gratitude.

Then we hit the BK Lounge and dined on gourmet food and solved the problems of the world. But we all decided that we couldn’t tell anybody about it because that would put too many people out of work. Then we all went home.

THE END

- Kent “Cobra” Troxel
Secretary

Kommandant’s Korner

The Fightin' Skywagon and her pilot have successfully passed their annual inspections with no significant squawks. Now we're looking forward to another fine aviating season. This annual inspection was my first with the new Skywagon so Dr Irvine and I opened her up quite a bit more than necessary to get a baseline condition. I'm glad that Doc Coussens didn't decide to do the same! Anyway, I was pleased to see that N2705K appears to have been well maintained, despite her rather more "blue-collar" history compared to ol' N61691. Good news is that this weekend doesn't appear too flying-friendly, due mainly to gusty winds, so I won't feel bad completing the buttoning-up process in the hangar. Expect to see N2705K out-and-about shortly.



Speaking of out-and-about, a reminder that "Fuddy Duddy", the EAA B-17G will be arriving at WJF on Monday, 18 Apr to give tours and rides (starting Tue). Tour-stop Chairman Bill Irvine and I would like to invite you out to see this piece of flying history and, perhaps, assist us in hosting the visit. Bill has promised to leave his air drill in the hangar and forego the opportunity to take something apart on a WWII classic. We'd like a couple of folks to be available on Tuesday or Wednesday of that week to assist in loading folks on and off the airplane and/or general crowd control. Please contact Bill or me if you can spare some time during the day to help out.

Of course, it's not too early to be thinking about our annual low-key fly-in at the High Cay. Since Doc Horowitz isn't a spaceman anymore, we may even see him

wandering around the ramp. This year, we'll be welcoming a new airplane for the crowds to drool over...that is, if Vince Sei has built up the nerve to bring his F-1 Rocket into the challenging Rosamond traffic pattern! Watch for more details in this publication and on our award-winning website.

That's it...no political messages or grizzled-old-CFI lessons this month. Just withdraw some more money from the kids' college fund, buy some of that high-priced 100LL and...

Fly safe and check 6!

- Gary Aldrich
Kommanding

The Photos: N115VS Takes Flight...Briefly

After some slapping around by the Project Police goons, Vince Sei has finally coughed up some pictures from his first flight. Rumor has it that these photos were taken by Friend of the Project Police Michelle Davis.



Dave Vanhoy assists Opus in removing the steed from her stable in Mojave



The mighty Rocket, sans pants, chomping at the bit to slip the surly bonds of earth

THE LEADING EDGE



Our intrepid Test Pilot, dressed in his stealth flight suit (the nametag has been removed in case of going down over enemy territory)



“Seat cushion is still there—must not have flown yet”



“Back in a mo’...hopefully...”



Launching of the chase G-202



Standing by for the airborne pickup



Off into the wild blue yonder



Our intrepid test pilot, 0.1 flight hours later



The post-flight debriefing panel: Ralph Wise, Dave Vanhoy, Cory Bird, Wen Painter, and Joann Painter (behind Opus)



Chase pilot debrief with Hojo



All real pilots talk with their hands...



Putting the mighty steed back in her stable

- Erbman
Off-Scene Reporter

Ever Wonder How "They" Determined Separated Airflow?

Ever wonder how the designers/builders of the 1930 air racers located separated (draggy) airflow?

Flight testing was rather crude (and dangerous) in those days. I am not sure that oscillographs had been invented and the Baldwin (Locomotives) strain gages were new and expensive. Telemetry wasn't "invented" yet. (Edwards AFB was installing their telemetry in 1955.) Anyway, the air racer builders didn't have the money to buy sophisticated test equipment.

White Wash

Art Chester with his "Jeep," "Goon," "Swee'pea," and "Wimpy" had a very simple and effective method of checking airflow on his airplanes. He would paint his airplane with whitewash (the kind Tom Sawyer used on the fence and farmers used in barns). Then he would takeoff, fly though a cloud, land, and evaluate the airflow. If there were streaks, the airflow was smooth. If the whitewash was gone it was due to turbulent airflow.



Art Chester and "Jeep 2"

Yarn Tufts

Many people, including NACA in the 1930's and '40's used tufts of yarn (also string) to show direction and separation of airflow. Usually they were photographed in a wind tunnel or from a chase plane. (Tufting an aircraft is an art but, that is another story.)

By the 1950's many test engineers thought the use of yarn tufts was archaic and beneath their intelligence. Besides, many builders did not wish the expense of a chase plane and photographer. *(at TPS, we have photographic evidence of tufts being used on the F-22—so much for being archaic)*

Two incidents that I know of showed the use of tufts to be a very quick and inexpensive means to solve aerodynamic flow problems.

Flow Direction



XH-16 Original Configuration

The Piasecki XH-16 had tandem rotors which made it possible to have a large pylon (or vertical fin) for yaw stability (or so they thought). At the time the XH-16 was the biggest helicopter in the known world with 85-foot

diameter rotors. But it had lousy static and dynamic stability.

Tufts were taped to the vertical fin. The helicopter was flown and the tufts were found to flow straight up the fin, even in forward flight. The inboard cutout of the rotor blades was far enough outboard that the airflow in the center of the rotor went upwards. One of the solutions was to put a fixed horizontal wing at the top of the vertical fin.



XH-16 With More Tail

Flow Separation

The XH-40, UH-1A, UH-1B and UH-1C all required excessive flight test time to make the horizontal elevator (some people called it a stabilizer--yet another story) to provide the proper longitudinal static stability (stick position) and controllability. This problem was due to the changes in the separated flow pattern off the rear of the fuselage.



UH-1B on display at Ft Sam Houston



HU-1H With Longer Aft Fuselage of UH-1D

A tufted UH-1B was flown and the pattern of separated flow was a duplicate of the wind tunnel model. Attempts to use vortex generators had insignificant effect on flow re-attachment during wind tunnel or flight tests.

During fuselage wind tunnel tests for the new UH-1D (Model 205), the tufted model showed flow separation on the aft fuselage and at the beginning of the tail boom. This area was filled with clay on the wind tunnel model and showed a marked reduction in separated flow. The shape of the real UH-1D fuselage was lengthened and the tail boom was then shortened accordingly. The tail boom joint

on the UH-1A/B/C/E was about the mid location of the engine compartment.

The Bell/Army/NASA "High Performance Helicopter," circa 1965, used this same wind tunnel test period to design the unique drag-reduction faring on the aft fuselage.

Chase Plane?

What about the expense of a chase plane? If you are looking for separated flow, you do not need a chase plane.

Fly a short time at the condition you wish to evaluate, land, and look at the tufts. The tufts in separated flow will be frayed. The amount they are frayed (or missing) will determine the strength of the turbulence during the flight. (Secret: You may need to use different sizes of yarn or string and different attaching methods depending on the strength of the flow.)

I used some of my girl friend's (later wife's) knitting yarn (or was it her mother's?) and masking tape on my new 1953 Studebaker (which is still in his garage today). After all, I had to impress her how smart I was and that she should learn to pronounce and spell "aerodynamicist."

- Lee H. Erb

aka Erb the Elder

EAA Chapter 1000 Det 5, Arlington, TX

Project Police Aircraft Spotters Quiz

Evil Editor Zurg is pleased that we received at least one guess on last month's mystery aircraft, and it was even correct. This month he has authorized us to unmask the N-number, which is N19131 for the presbyopics out there.



Famous KITPLANES author Murry Rozansky sent in the following response:

"Fairchild model 46, built to flight test the Ranger V-12 and demonstrate the Duramold process. Was derelict in CA at one time. From Michael O'Leary. I'll see if anything more shows up.

http://www.bcwarbirds.com/sherman_fairchild_bio.htm

<http://www.aerofiles.com/fair-46a.jpg>

<http://www.aerofiles.com/clark46.jpg>

PPO Lee Erb, who provided the pictures for Zurg's amusement, sent this information:

"Three quick items:

1. It was designed by Virginius E. Clark, creator of the Clark Y airfoil.

2. It had a Clark Y airfoil.

3. The Fairchild Duramold process was purchased by Howard Hughes to use on the Spruce Goose."

From http://www.aerofiles.com/_cl.html :

"46 Duramold aka Fairchild 46-A 1937 (ATC 2-545) = 5pClwM; 450hp supercharged Ranger SGV-770; span: 38'0" length: 33'5" load: 1627# v: 225/220/65 range: 750. Col Virginius Clark (also designer of Clark-Y airfoil); ff: 12/5/37. Fuselage constructed with Haskelite bonded-plywood process, patented as Duromold, later changed to Duramold for incorporation. POP: 1 [NX/NC19131]. Restored in 1949 and refitted with 450hp P&W Wasp."

<http://kittyhawk.public.hq.nasa.gov/essay/Aerospace/Fairchild/Aero25.htm> :

"In 1939, Fairchild became interested in a process developed by Col. G.A. Clark for building airframes using a composite made of hot layers of plywood soaked with resin adhesive and bonded under pressure. Called the Clark Duramold process, Fairchild bought the process, as well as Clark's company, and renamed the process Fairchild Duramold. Fairchild used it on the wartime AT-21 Gunner trainer."

<http://warbirdinformationexchange.org/phpBB2/viewtopic.php?p=13555&sid=ab06e15b67f04877af324218a76537b0>

"Stuart: From what I've been able to find over the years, Bell used essentially the DuraMold process to mold the exterior skins for the fuselage and most likely the wings too. It's basically a wet layup to full thickness in a female mold and then a male section is closed onto it. Steam at a carefully regulated flow is piped through the mold sections to cure the resins. The skins are then bonded to bulkheads just like a big model airplane. BTW, mold halves are considerably larger than each skin section and weigh in the tens of tons each. Cold molding ala boat hull fabrication process would be a possible method to replicate the skins, but would require some testing to verify that they are reaching the necessary structural strengths. I'm slowly researching this too, as the Fairchild made extensive use of the DuraMold process."

Web Site Update

As of 9 April 2005, the hit counter stood at 97617, for a hit rate of about 25 hits/day for the last month.

Just a reminder that the EAA Chapter 1000 Web Site is hosted courtesy of Quantum Networking Solutions, Inc. You can find out more about Qnet at <http://www.qnet.com> or at 661-538-2028.



Chapter 1000 Calendar

Apr 19: EAA Chapter 1000 Monthly Meeting, 6:00 p.m., General William J. Fox Field, Lancaster, CA. BBQ to follow at High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

May 3: EAA Chapter 49 Monthly Meeting, 7:30 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

May 10: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

May 17: NO EAA Chapter 1000 Monthly Meeting, go to Fly-In instead

May 21: Fourteenth Annual Scotty Horowitz Going Away Fly-In, Rosamond Skypark (L00), Rosamond CA. (661) 256-3806

Jun 7: EAA Chapter 49 Monthly Meeting, 7:30 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Jun 14: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

Jun 21: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Jul 5: EAA Chapter 49 Monthly Meeting, 7:30 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Jul 12: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

Jul 19: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Aug 2: EAA Chapter 49 Monthly Meeting, 7:30 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Aug 9: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

Aug 16: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

To join Chapter 1000, send your name, address, EAA number, and \$20 dues to: EAA Chapter 1000, Doug Dodson, 4431 Knox Ave, Rosamond CA 93560-6428. Membership in National EAA (\$40, 1-800-843-3612) is required.

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Inputs for the newsletter or any comments can be sent to Russ Erb, 661-256-3806, by e-mail to erbman@pobox.com

From the **Project Police** legal section: As you probably suspected, contents of *The Leading Edge* are the viewpoints of the authors. No claim is made and no liability is assumed, expressed or implied as to the technical accuracy or safety of the material presented. The viewpoints expressed are not necessarily those of Chapter 1000 or the Experimental Aircraft Association. **Project Police** reports are printed as they are received, with no attempt made to determine if they contain the minimum daily allowance of truth. So there!

**THE LEADING EDGE
 MUROC EAA CHAPTER 1000 NEWSLETTER**

**C/O Russ Erb
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<http://www.eaa1000.av.org>**

ADDRESS CORRECTION REQUESTED

**THIS MONTH'S HIGHLIGHTS:
 REGULAR MEETING 19 APR AT FOX
 JOHN BURCHAK MEMORIUM
 F1 ROCKET PIX
 FINDING SEPARATED FLOW ON THE CHEAP**



The Leader In Recreational Aviation