experimental aircraft association

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 *June 2018*

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:

(artist's conception)

Tuki's Taco Table

and

Report From EAA Headquarters

Tuesday, 19 June 2018

1730 hrs (5:30 PM Civilian Time)

Bearhawk Manor

Rosamond, CA

Summer is a time for fun, and what's more fun than eating with your friends?

This month's EAA Chapter 1000 activity will be **Tuki's Taco Table**. Most folks would call it a Taco Bar, but **Evil Editor Zurg** has a real penchant for alliteration. Your chapter board, always willing to put themselves on the line for the benefit and protection of the ***Project Police***, have personally tested and consumed previous iterations of **Tuki's Taco Table**. The majority opinion was written by **Doug "Opie" Dodson**, stating "**This is way better than anything at Coach's!**". With a recommendation like that, you don't dare miss out. Maybe **Dave Vanhoy** will adjourn that day's meeting of the TPS Curriculum Planning Council (CPC) on time so that he can attend. Or at least send **Helida**.

Tuki's Taco Table includes plenty of sodas and beer (*did Opie's ears just perk up?*) for responsible consumption. If eating **Mexican** food prepared by an **American** citizen of **Japanese** origin puts you in the mind of a **Margarita** (*Spanish for "Daisy" – Wikipedia*) instead, text your desires to **Tuki** at (661) 917-9101 so she can be prepared. Include your name so she doesn't assume it is some SPAM text.

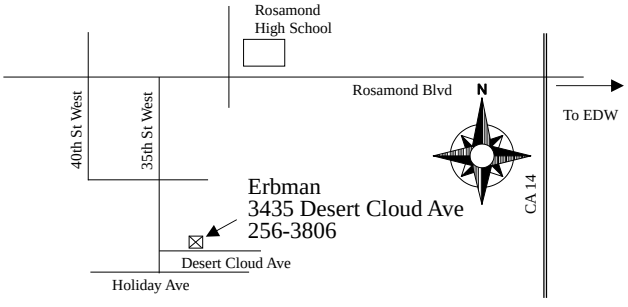
Tuki's Taco Table will be hosted at **Bearhawk Manor** in **Rosamond**, home of **Erbman**, **Schmoozemistress Tuki**, and little **Miss Emmy**. **Evil Editor Zurg** is rumored to hang around there too, but will probably be off in his secret Evil Genius Lair editing the latest edition of his book *Mine Camp*, purportedly the details of his evil plan to infiltrate seagulls into summer outdoor activity centers.

Note the time is a half hour later so **Erbman** has a chance to get home from said CPC meeting. Of course, if you show up early, you can entertain **Emmy** while **Tuki** finishes preparations.

After everyone is sufficiently Taco-ed up, **Vice Kommandant Hellmuth** will whip out his magic whiteboard and give his much anticipated report on "How I Spent My Pre-Summer at **Chapter Leadership Boot Camp"**. While this may make you have visions of the Chapter Leaders being awoken at 0500 by Sgt Hulka banging on a trash can, followed by marching practice around the airport ramp, the obstacle course, the rifle range, and checkouts on the **EM-50 Urban Assault Vehicle**, I can't promise anything. Counselors will be available to assist with any bad flashbacks to your past. You can ask if there were any seagulls.

Ice Cream Sandwiches will be available for desert. If that doesn't remind you of summer camp, I don't know what will.

After the meeting you can ask to see the location where the **Combat Bearhawk** was constructed and many of its leftover materials. However, I will warn you that it looks mostly like a typical garage.



- Erbman

For the Vice Kommandant Hellmuth Steinlin

Last Month's Meeting

EAA Chapter 1000
Hellmuth's Hofbräu
Undisclosed Location near 52CL
Adelanto, CA
19 May 2018
Gary Aldrich, Presiding

This month's meeting was a well-publicized secret assault on Hellmuth's Hofbrau, located at an undisclosed location in the vicinity of Adelanto Airpark.

This assault was planned at high risk, as the local Antelope Valley winds had been very high and gusty for the previous week, and would be for the following week. Fortunately, much like at D-Day in 1944, a lull in the winds passed through on the morning of the assault.

Activities in the Mission Planning Cell were very secretive and very complex, taking place over the unsecure commercial cell phone network. Planning strategies included discussions like this:

N2705K: Anne, Pixel and I will occupy the VC-180. I have one seat free. What is TOT?

N6786E: 1000 was published but we won't be there until at least 1030 at the earliest

N2705K: Same here

With that kind of precision planning, it was no surprise that once established on course, the crew of the **RB-4 Combat Bearhawk** found themselves precisely positioned just off the left wing tip of the **VC-180 Fightin' Skywagon**. At least that's the way it looked on the Foreflight display. As both aircraft are part of the 25 percent of all aircraft that have actually bothered to equip with ADS-B OUT and IN, both crews had a complete view of the formation. **N2705K** in the lead rocked its wings to direct **N6786E** to rejoin. This rejoin did not occur, as even though the two targets were less than 1/2 inch apart on the display, they were separated by at least 1 to 2 nm (that's nautical miles, not nanometers) and never in sight of each other. Without a pre-briefed mission frequency, they couldn't even talk about it. The **Combat Bearhawk** slowed and maneuvered wide to build spacing, which resulted in the **Fightin' Skywagon** taxiing to park as the **Bearhawk** was on downwind. With a botched approach ending up way too high on final, the **Bearhawk** PIC regressed to his glider pilot persona, pulling the throttle to idle and kicking in a big sideslip to get on an appropriate approach path.

In spite of less-than-tight security, the arrivals were caught on **Hellmuth's** security cameras embedded in **Debbie's** cell phone.

The Fightin' Skywagon lines up for his famous airshow act, landing through an open building structure

Some airshow performers land on top of a moving truck. Here the Combat Bearhawk demonstrates landing on top of a stationary shipping container

The Fightin' Skywagon secured by secret invisible tie down lines

Combat Bearhawk shut down, waiting to be pivoted into the wind

The invading guests were greeted by **Hellmuth Steinlin** in his Lederhosen and **Debbie Schweitzer** in her Dirndl. It was just like being back in Bavaria, assuming Bavaria was in the Mojave Desert instead of the Alps. No barmaids with five steins of beer in each hand since the flight schedule was in progress.

The **Fightin' Skywagon** crew was made up of **Kommandant "Paco" Aldrich**, **Mrs. Kommandant Anne Aldrich**, and chapter **First Dog Pixel**.

The **Combat Bearhawk** crew was made up of **Erbman**, **Schmoozemistress Tuki Erb**, and **Junior *PPO* Emmy Erb**, currently on probation in her Return To Fly program.

In seeming defiance of the published orders, **Kanard** and **Leigh Kelly** made an extreme low-level attack via **Saturn** under the RADAR to secretly ensure mission success shouldst the aerial element not get through, but were foiled by a closed access gate. **Hellmuth** responded to the alarm, and after inspecting the vehicle, granted them access to the Hofbräu.

Other prominent chapter members sent their regrets with weak excuses. **Cobra Troxel** was on an **Aluminum Death Tube** winging his way toward Hawaii, mumbling something about being called on by the combined ghosts of King Kamehameha I-V to sacrifice a virgin to satiate the goddess Pele. **Knife Gennuso** was on a Higher-Priority Mission to accompany **Diane** to her ??th High School Reunion (we don't remember the number, but it wasn't small). **Stormy Weathers** and **Opie Dodson** both whined about geographical separation in Texas.

Hellmuth fired up the charcoal grill (the best way to grill), and **Erbman** threw on a marinated T-bone. The **Kommandant**, having expended all beef products in the house the previous night at **Pixel's Bark-Mitzvah**, grilled up some very interesting looking salmon fillets. **Kanard** followed with some burger patties. Then **Hellmuth** invited in his reinforcements, the **Lairds** from next door.

After eating, **Junior *PPO* Emmy** dragged Mommy back to the **Combat Bearhawk** and motioned that she wanted in. After being lifted into the co-pilot's seat, she crawled to the back, mounted up her plane-seat, and strapped herself in. We interpreted this as her saying it was time to go home. Considering that the winds were increasing in strength towards "heinous", it seemed like a good idea.

All members of the assault force successfully returned to their home base with no battle damage.

Most of this is true.

- Russ "Erbman" Erb
Emergency Secondary Backup Minister of Propaganda
Chapter 1000 of the Experimental Aircraft Association of these United States of America and Occupied Territories
"We have more zeroes in our chapter than any other!"

Kommandant's Korner

The **Fightin' Skywagon** got a little exercise today when I flew a functional check flight (FCF in military jargon). Purpose of the FCF was to make sure the new number two communications radio installed recently by High Desert Avionics was working as designed. Turns out a small tweak to the transmit sidetone volume was required to match that of the number one radio (embedded in the GNS530W). Another flight will be required to validate the adjustment, but in the hangar all seems to be correct.

For such a simple function, the GTR225A provides a host of convenience features unknown when N2705K first rolled off the line in Kansas back in 1979. Chief among the new capabilities is an imbedded database of communication frequencies making reference to paper charts, A/FD, or even electronic info sources such as Garmin Pilot even less necessary. The database is updated every 28 days and is loaded into the radio via USB from a (dreaded) memory stick. The memory stick gets the file from Garmin through their flygarmin.com service and is bundled with the other navigation, obstacle, terrain, and airport info databases that are fed into the GNS530W and aera 796 units. With a few button pushes and knob twists frequencies can be retrieved and loaded into the standby side of the "flip-flop" display using searches by identifiers for airports or navigation aids.

Leveraging the power of the database (which, by the way, covers every airport, approach/departure control, FSS, ARTCC, and weather outlet in North America) is the fact that the radio knows where it is, and where it is not thanks to a position input from the GNS530W. Thus, "reverse lookup" of frequencies based on geographical location is possible as long as a reliable GPS signal is available. Searches can be made by frequency type (airport, ARTCC, or weather source) using the "nearest" function. This makes flying into unfamiliar territory a bit less challenging given the availability of current frequency

data. Granted, there are other sources of this position-related information in my cockpit but having it in the radio with an easy way to load the frequency into the radio is handy.

I was also able to retain the HOTAY ("Hands On Throttle And Yoke") functionality of the superseded KX-125. The same actuation of the 4-axis "coolie hat" (hmmm, is that racist?) under my left thumb allows me to remotely flip-flop the frequency on the GTR225A or swap communication to radio number one. Of course, this is critically important when penetrating foreign airspace like AirVenture while simultaneously maintaining comm-out trail formation with a thousand of my fellow pilots approaching Fisk. An aid to aging pilots' memory is a "recent" function to recall frequencies as well as a 20-slot "user-defined" memory area.

All of this new gadgetry does not come without some cost (and not just the AMU cost). My operational paradigm for use of the prodigious avionics of the Skywagon has always been to use Comm 1 for "airborne" connection with ATC facilities like towers, RAPCON, and ARTCC; relegating Comm 2 for obtaining weather (AWOS, ATIS) and talking to ground control after exiting the runway. With all of its bells and whistles, I may have to "embrace the change" and promote the GTR to "primary" use. Renaming it to Comm 1 is unlikely as it would probably make my head explode.

Yes, folks, we've come a long way in the avionics capabilities of our little airplanes. When ***PPO*** **JD3** was teaching young military aviators how to fly the T-38A he had one…yes, one AN/ARC-34 UHF communications radio with a "database" composed of 10 user-programmable frequency positions AND a list of frequencies hastily scribbled on a kneepad with a stubby pencil or on the canopy with a grease pencil. Ahead of its day, the ARC-34 also had a second receiver tuned to monitor the emergency frequency of 243 Mhz (or "guard"). The GTR225A has that capability as well by providing a "monitor" function for the standby frequency. I'll give follow up reports on the paradigm shift as I gain more experience with the new box. Until then…

Fly Safe and Check 6,

Yours in gadgetosis….

- Gary Aldrich
Kommanding

Designing A Static Tube Adapter

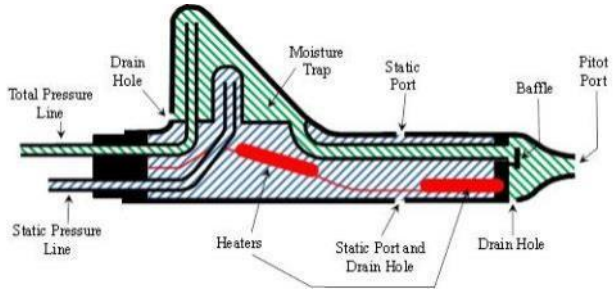
The prototype Bearhawk was built with a short, simple Pitot tube and a "cabin static", which means the static connections on the instruments are just left open to cabin pressure. While simple, unfortunately this setup leads to large errors in altitude and airspeed. If you've ever opened the alternate static source while in flight, you've seen the airspeed and altitude jump up. The alternate static source in an unpressurized cabin merely opens the static system into the cabin. The jump in airspeed and altitude happens because the pressure in the cabin is typically slightly less than the freestream ambient pressure.

To get accurate altitude and airspeed indications a proper static system is required. One method is to place the static ports on the side of the fuselage roughly halfway between the wing trailing edge and the horizontal tail leading edge. However, that is just an approximation. The actual best location can only be determined by testing multiple locations. While that's okay when preparing for production, it is not practical when building a single example.

Therefore, my approach to maximize my probability of success was to install a Pitot-static tube, where the static ports are on the same probe as the Pitot port. By placing this probe on a long boom in front of the wing leading edge, the static ports should be in relatively undisturbed air. How long should the boom be? That was decided by looking at the ratio of boom length to local wing chord on similar installations on other light aircraft and World War II fighters.

For the Pitot-static tube I purchased an AN5816 Pitot-static tube from new-old stock in the Aircraft Spruce catalog. I got a real kick out of the yellow tag that came with it—the manufacture date was July 1954, the exact month that my parents were married. Don't look to get one from that source now—the AN5816 is no longer carried in the Aircraft Spruce catalog.

The AN5816 Pitot-static tube has an interesting design, recognizable by the "shark fin". The "shark fin" area is actually a moisture trap for both the total pressure and static pressure tubes, which with a baffle and drain holes is very effective at keeping water out of the instrumentation tubes.



As installed, the Pitot-static tube worked out as desired, as the measured airspeed correction at cruise is only +3 knots, and the altitude correction is +35 feet.

Biennial Static Pressure Check

According to 14 CFR §91.411 (abridged):

(a) No person may operate an airplane, or helicopter, in controlled airspace under IFR unless—

(1) Within the preceding 24 calendar months, each static pressure system, each altimeter instrument, and each automatic pressure altitude reporting system has been tested and inspected and found to comply with appendices E and F of part 43 of this chapter;

Since I have started to work on my instrument rating and plan to use the **Combat Bearhawk**, I need to make sure that it is in compliance with 14 CFR §91.411. Interestingly, a transponder check can only be accomplished by an FAA approved shop, but the static pressure check can be done by an approved shop or by the manufacturer, which in the case of a homebuilt is the builder.

One method to do the static pressure check is to tap into the static pressure system and seal the static ports with tape. However, this isn't really a good approach because when the test is complete, the test set is disconnected and the port is capped. The certification assumes that the port is capped with a perfect seal.

To do the test properly, the test set needs to be connected to the actual static ports without disturbing the static system. For a fuselage mounted static port, the attachment could be as simple as a suction cup type device. However, it is a bit more tricky to attach to a line to the static ports on the AN5816 Pitot-static tube. The static ports are on the round portions of the tube on the top and bottom of the probe.

Given that this Pitot-static tube has been around for over half a century, you would think that someone would have developed a commercial adapter for this tube at some point. According to **Jeff Landon**, a company called **Nav-Aids Ltd** in Canada did just that. However, they didn't make them cheap. Jeff said that the adapter costs about $1300, which is why he doesn't have one. I'm also glad that he didn't pass the cost on to me. An Internet search for the part number yielded one source that priced it at $926.25, but it was out of stock. Prices tend to be reduced when the product is out of stock. No pictures of this adapter could be found, so I couldn't even try to copy it.

The Pitot-static tube seemed to be about the same size as a 10-speed bicycle tire, so my first idea was to purchase a 27x1-1/8 inch bicycle inner tube. This had to be stretched slightly to slide over the Pitot-static tube, which would help with the sealing. The valve stem (with the valve removed) was positioned directly over the lower static ports. The ends of the tube were further sealed by wrapping them with self-fusing rubber tape. The test set would then "simply" be connected to the valve stem.

Unfortunately, the threads on the outside of the valve stem are a very unusual thread. According to one Internet site, it is 7.7 mm x 32 threads per inch. Metric and Imperial measurements in the same item—how's that for fun measurements? After much searching and thinking, I stumbled into the realization that this was very close to the thread used on the fittings for my engine primer nozzles (5/16-32). I attached the fitting to the Schrader valve with some sealant and attached the tubing to a water manometer.

Using the water manometer, the indicated altitude was lowered by 1000 feet. After six minutes the altitude had gained 40 feet. This was a rate of 6.7 feet per minute. According to some Internet source, the acceptable rate is 100 feet per minute. This sounds good, but as I would find out later, all of that leak rate was most likely in the static tube adapter. There must be a better way.

First iteration of Pitot-static tube adapter

Two years later I had the airplane back at Jeff Landon's shop to get a static pressure leak check. Once again, we used the invasive method of tapping into the static system. Once again, I thought that there must be a better way to make a non-invasive connection to the static ports. I continued to noodle on the problem. The next day I was flying Young Eagles at Fox Field. After flying the kids and preparing to head home, I loaded **Tom "Duke" Wayne** into the airplane. As I walked around the nose, I looked at the Pitot-static tube, and the vision of what follows popped into my mind.

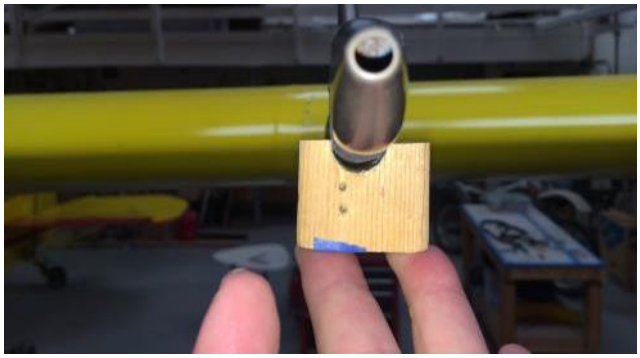
This iteration again involved the inner tube from a 10-speed bike tire, but this time without the valve stem. A hole was punched through the inner tube with a leather punch. It took some experimentation to determine what size hole to use. Too small and it was too hard to line up the hole with the static port. Too large and the hole stretched too much to make a good seal. There is room to experiment, since you can get multiple 2 inch sections from one inner tube. I think I ended up using the second or third size punch.

The remainder of the adapter is an aluminum block to clamp over the inner tube. The upper block compresses the inner tube, sealing the upper static ports. The bottom block seals against the inner tube, placing a tubing connector over the open static port.

Inner tube sections with punched holes

Inner tube stretched over Pitot-static tube, aligned over static port

To properly design the aluminum block, I had to measure the diameter of the top and bottom of the Pitot-static probe. I used my calipers to measure the width of the probe. Adding an allowance for the thickness of the inner tube, I determined that the proper diameter for the clamp was 5/8 inch. To verify this measurement, I pulled out my 5/8 inch wood boring spade bit and drilled a hole in a wood block. I cut the block across the diameter of the hole and held it up to the probe. As shown in this picture, it didn't fit.



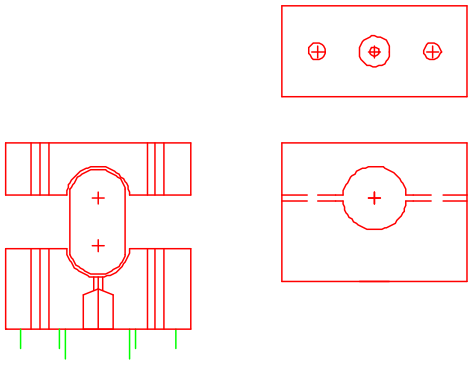
5/8 inch test block—doesn't fit

Further inspection of the probe revealed the problem—the round top and bottom are not tangent to the sides. The width of the probe is slightly less than the diameter of the top and bottom. Looking at the 5/8 inch test block, it appeared that the estimated thickness of the inner tube needed to be added to the 5/16 inch radius. Adding 1/32 inch twice (for diameter), that would be an 11/16 inch diameter hole. I didn't have an 11/16 inch wood boring bit available, but I did have an 11/16 inch step on a Unibit step drill. Therefore, I drilled the test hole in a scrap of 1/8 aluminum. This one fit the probe as desired.

11/16 inch test block—does fit

The good news was that I figured out what size drill I would need. The bad news was that I didn't have an 11/16 inch twist drill bit for aluminum in stock. Even worse, 11/16 inch is an unusual size that isn't typically stocked at Home Depot or even Karl's Hardware. Therefore, I went to the source of last resort—McMaster Carr. There I found an 11/16 inch twist drill bit with 1/2 inch shank (since that is all that will fit in my drill press) for a relatively reasonable price.

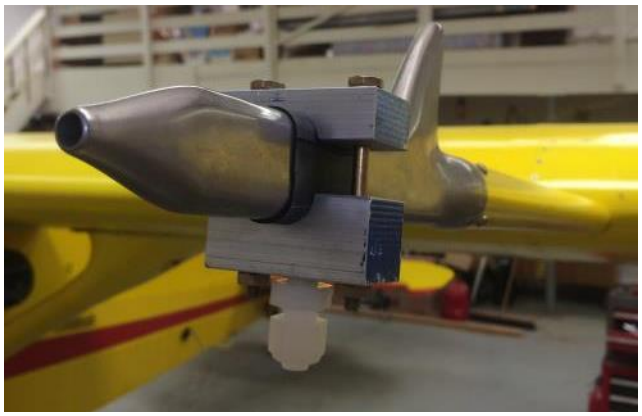
The design of the clamp block was driven by the material that was readily available. The best fit I found was at McMaster Carr—a block of 6061 aluminum 1x1.5x6 inches for $8.21. The clamp block design was drawn out in CAD, including the bolt holes and location for the tubing nipple.



Clamp Block CAD drawing

The build procedure was carefully thought out to maximize the needed precision while using simple tools (i.e. no milling machine).

1. Cut 2 inches from the aluminum bar using the power bandsaw.
2. Using the drill press, drill a pilot hole for the 11/16 inch hole.
3. Using the drill press, drill 11/16 inch hole.
4. Using the drill press, drill 3/16 inch holes for clamp bolts.
5. Using the drill press, drill #40 hole for pressure tap.
6. Enlarge pressure tap hole with Q drill (0.3320 inch) to 3/8 inch deep.
7. Tap pressure tap hole for 1/8 NPT.
8. Use power bandsaw to separate the clamp halves across the diameter of the 11/16 inch hole.



Clamp block and tubing nipple installed

Installing the clamp could be slightly tricky, getting the pressure tap directly over the exposed static pressure port. The best technique was to use a piece of 0.020 safety wire threaded through the tubing nipple and just into the static port to line up the blocks.

Clamp block with pressure tubing installed

So how well does it work? During a quick test, a water manometer was used to reduce the static pressure enough to raise the altitude by 500 feet, which resulted in an indicated airspeed of 100 knots. After 10 minutes, the altitude showed no detectable change. This was a much better seal than the previous iteration.

To cause larger altitude changes, it is necessary to also be able to reduce the Pitot pressure to protect the airspeed indicator from getting to too high of airspeeds. Connecting to the Pitot port is much simpler. The perimeter of the probe is 2.99 inches. A rubber tube with a 7/8 inch inside diameter will have an inside perimeter of 2.75 inches. Pushing the rubber tube over the probe will stretch it just enough to form a sufficient seal. This seal does not have to be perfect, as the required test is only on the static pressure system. The seal can have a slight leak as long as it works well enough to protect the airspeed indicator.

- Russ "Erbman" Erb

Great Designs Just Keep Going and Going

Thanks for the detailed instructions. I googled workbenches and liked the one you and **Bob Waldmiller** did the best.

I changed it up a bit because I have some 2X6 lumber around I was trying to use up. Thanks again to you and Bob!

- Kevin Kelley

Web Site Update

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

Jun 12: CNX ~~EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942~~

Jun 19: EAA Chapter 1000 Monthly Meeting, 5:30 p.m., Bearhawk Manor, 3435 Desert Cloud Ave, Rosamond CA. (661) 609-0942

Jul 10: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Jul 17: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Jul 23 - 29: EAA AirVenture. Oshkosh WI.

Aug 14: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

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

Sep 11: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Sep 18: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Oct 9: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

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

Nov TBD: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Nov TBD: EAA Chapter 1000 Monthly Meeting, 5:30 p.m., Flying Dog Ranch, 4400 Knox Ave, Rosamond CA. (661) 609-0942

Dec 11: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Dec 18: EAA Chapter 1000 Festivus Etc Celebration, 6:00 p.m., Kommandant's Kwarters, 42370 61st Street West, Quartz Hill CA. (661) 609-0942

To join Chapter 1000, send your name, address, EAA number, and $20 dues to: EAA Chapter 1000, George Gennuso, 3119 Lennox Ct, Palmdale CA 93551. Membership in National EAA ($40, 1-800-843-3612) is required.

Contact our officers by e-mail:
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Secretary Kent Troxel: kenttroxel@sbcglobal.net
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Instrumentation and avionics requirements for VFR/IFR		
Gary Aldrich	gary.aldrich@pobox.com	661-609-0942

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
3435 Desert Cloud Ave
Rosamond CA 93560-7692
http://www.eaa1000.av.org

ADDRESS SERVICE REQUESTED

THIS MONTH'S HIGHLIGHTS:
REGULAR MEETING 19 JUN @ BEARHAWK MANOR
SECRET RAID ON HELLMUTH'S HOFBRÄU REPORT
KOMMANDANT SWAPS OUT RADIO
BUILDING A STATIC PORT ADAPTER

EAA™
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