

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>

May 2014

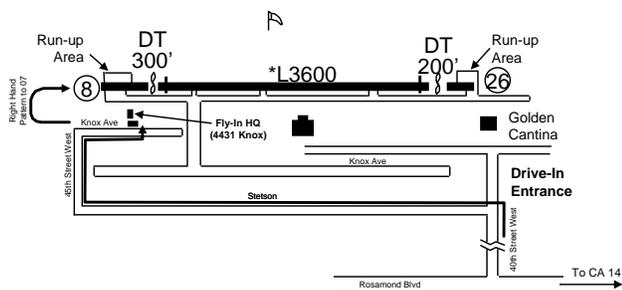
Chapter 1000 meets monthly on the third Tuesday of the month in the USAF Test Pilot School Scobee Auditorium, Edwards AFB, CA at 1700 or 5:00 PM, whichever you prefer. Any changes of meeting venue will be announced in the newsletter. Offer void where prohibited. Your mileage may vary. Open to military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

This Month's Meeting:



Twenty Third Annual *Project Police* Airport Barbecue

Saturday, 10 May 2014
High Cay Partyhaus
4431 Knox
Rosamond, CA



Yes, the *Project Police* have been fabricating a reason to party for twenty three years. How many organizations have you been a part of that could keep anything going for 23 years?

Once again the pre-event activities will include a performance by the Precision Work Bench Relocation Marching Drill Team, the One-Armed Banner Hangers, and the Scottish Banquet Chair

and Table Corps. The Spot Landing contest and People's Choice airplane judging will continue to be eliminated due to lack of interest.

The best part will remain—there will be food! Expect the ceremonial fire to be torched around 1000.



Your expert Grillmeister carefully cooks every lunch



Our top-notch staff anxiously awaits to serve you!

The big event will still happen at the **High Cay Partyhaus** on **Rosamond Skypark (L00)**, so you can still fly in if you so choose.

As always, you can get there by flying, driving, walking, bicycling, or any other form of transportation you deem appropriate. Just be there! Aloha.

Last Month's Meeting

EAA Chapter 1000

Flying Dog Ranch
Rosamond, CA
23 April 2013 22 April 2014
Gary Aldrich, Presiding

Both a change of date and venue for this month's meeting. ~~Doug and Gail Dodson were otherwise engaged flying "south of the border" (look for a report on their escapades)~~ was out of town. The location was switched to **Bill Irvine's** nearby **Flying Dog Ranch** (across the street, actually, so minimal chance of members getting lost).

Once again, it was our pleasure to welcome **Lt. Col Jacque "Strap" Joffrion** and 8 visiting Air Force Academy cadets from the **Aeronautical Engineering 456** course. Chapter 1000 is pleased to feed and water them twice a year.

Grillmeisters **George "Knife" Gennuso** and the undersigned, along with **Schmoozemeister Tuki** prepared mass quantities of cheeseburgers and cookies which the cadets inhaled as only metabolisms of 21 year-olds can, along with swilling beer from Bill's multiple coolers.

~~Knife and I christened Bill's new New Jenn Air gas-powered grill, and our evaluation was "Wundabar!"~~

Erbdude entertained the troops by touring them through the hangar, pointing out the latest speed mods to the **Bearhawk**, as well as a **Subaru-powered RV-7** and the **Glamorous Glasair** (the Twinkie was at the avionics shop).

Lame jokes were told, well-embellished stories were sworn as truth, and out-right lies were asserted as fact with straight faces, no less—and that was just by **JD3!** *Imagine what the rest of us said!*

The cadets were gracious enough to laugh, ooh and ahh and bow in reverence at the appropriate time, all in the name of free food and beer (*this is the type of training your tax dollars is buying you*).



The gas grill requires no lighter fluid. However, Knife notices that apparently Cobra does require some lighter fluid...



If you see spots in this picture you may want to clean your monitor



Bun-up!



Good times were had by all, a process that we'll do again in about 6 months.
Most of this is true.

- ~~Kent Troxel~~ (who wasn't there, so we recycled last April's report with minor changes)
Minister of Propaganda
Chapter 1000
"We have more zero's in our chapter than any other!"

Kommandant's Korner

Zurg's demands came early this month. Apparently there is some requirement imposed by the Secret PPTAF Bylaws that the



monthly newsletter be distributed in advance of the monthly meeting. This seems, to me, to be a breach of security by informing the membership about the meeting program, et al before it actually happens. Oh well, I don't claim to have any control over the machine that is Chapter 1000 so I guess I'll have to make up some new, exciting...perhaps motivational epic to fill the empty hole in Zurg's publication.

There hasn't been a lot of aviation occurring in my recent past. I could regale you of the last three times I've driven to Mountain Valley Airport (L94) only to be confronted with nasty, gusty winds and sorely disappointed TPS students, but that's not very interesting. The last time the Fightin' Skywagon was out of the barn was Easter Sunday when sons-in-law Mike and Greg flew with me to the mecca of warbird restoration, Chino (KCNO). The weather that day, if you recall, was beautiful with calm winds for our outbound leg and clear (for LA) air in the basin. We did it all that day...several hours in the Planes of Fame Museum split by a fine lunch at Flo's Diner on the field. I hadn't cruised the displays since we deployed with the Combat Bearhawk a few years ago and it was nice to see the progress made on several of the priceless aircraft in the care of the Museum. There is another collection, Yank's Air Museum, on the field that I have never visited, but it was closed that Sunday. I guess they are more religious than the folks at Planes of Fame. Perhaps our Vice Kommandant in charge of fly-outs will schedule a visit to the Yank's facility sometime.

Around this date in May of 2000 I ran out of 14CFR Part 61.57 currency in the category and class, "Airplane, Multi-Engine Land". This is the paragraph that "forces" us to make three landings in category, class, and type (if applicable) every 90 days or be prohibited from carrying passengers in said aircraft. Oh, I've had an occasional flight in A/MEL since, but not as PIC. The dearth of multi-engine aircraft available for me to fly (as well as the dearth of the required funding) pretty much relegated that qualification on my pilot and instructor certificates to the gathering cobwebs. Well, that all changed this morning, thanks to a request by PP Trooper and owner of the Flying Dog Ranch, Bill Irvine.

Bill, who "bills" himself (bad pun?) as "The 310 Guy" has been laboring in a hangar across from the VC-180's lair on a 1958 Cessna C310C. Some of you may be familiar with the saga of this airplane, but I will recap the highlights for the newer folks. Sometime greater than eight or nine years ago a customer delivered this aircraft to Bill's old hangar at Fox Field with instructions to make it like new. Bill labored tirelessly and went all through the

airframe and engines and even installed an updated Garmin-centric avionics stack in a new instrument panel. Shortly after he completed the post maintenance check flight the owner and Bill parted company in a less than amicable way and the airplane ended up tied down on the east end of the field with no engines. There it sat, forlornly, until a year or so ago when Bill and High Desert Avionics owner Jeff Landon conspired to resurrect the old girl once more and sell it to a new owner. That owner bought a tired old C310G that had two very fresh engines and props and had that flown to the Flying Dog Ranch at L00. Magically, the good engines of that airframe migrated down 60th ST West where they appeared on the '58 Cessna's wings. After further extensive resuscitation, it was now time to ferry the plane to L00 for the finishing touches on the project so that the new owner can commence learning to fly it.

That's how I found myself sitting in the left seat of N6688B this morning as Bill showed me how to start the big Continentals. He then exited the aircraft and I taxied out alone (because of that pesky 61.57 requirement) to try and dust off my "many-motor" skills. Let's see, 14 years since PIC in A/MEL, 17 years since PIC in a C310...and 8 years since this particular "Businessliner" had flown. How tough could it be? Smoothly moving the throttles to the forward stop produced impressive acceleration on the lightly loaded twin. I was at the rotation speed almost before I knew it and when I hauled back on the yoke I was reminded of the significantly heavier control forces over those in N2705K. I paused the climb briefly to attain the minimum single engine climb speed (Vsse 95 MPH), then while accelerating to Vy (119 MPH), continued up into the closed pattern to see if I remembered how to land one of these things. My first landing was a bit long and firm, having held a bit too much airspeed in the flare and forgetting just how long the gear legs are on a 310. I carried through on a touch and go and the second landing was better as I concentrated on maintaining the appropriate speeds with a closer tolerance. The engines were performing well, though a couple of cylinders on number 1 were a bit warm. I made a third landing, now "legal to carry passengers", and taxied over to the fuel pump where Bill climbed in for the short flight to Rosamond.

The fourth takeoff was uneventful until I tried to retard the throttles for the level off. We had decided not to raise the gear as Bill wanted to inspect it again before it was retracted in flight. Throttle number two encountered a hard stop somewhere north of idle, refusing to reduce power on the right engine lower than about 15 inches of MAP. The power setting was adequate to maintain a speed below the gear limit and the throttle seemed to work in the "go-fast" direction so we proceeded into the pattern for runway 26 at Rosamond. We surmised that a clamp had moved or something, causing the throttle to bind.

I enlarged our pattern to allow for a long, stable descent and found that I was able to use a matched power setting to hold the proper approach speed. Not knowing exactly what the effect of the asymmetric thrust might be with number 1 in idle and number two producing more

thrust, I carried the power into the flare and then pulled as much power off as possible. This resulted in a rather “firm” arrival, but I was relieved that I had sufficient rudder to maintain directional control, though I drifted a bit left of center on touchdown. I was mentally prepared to pull the mixture on the right engine if it produced too much power for the rudder and nosewheel steering to handle, but that was not necessary. The taxi to Bill’s hangar was a bit of a dance with the steering and throttle jockeying, but the old twin was soon backed into its new temporary home.

So, what did I learn? I still know how to fly Cessna’s “entry-level” twin. And, mechanical difficulties won’t occur unless the mechanic is on board! Seriously, though, I’d forgotten how much fun it is to fly such a beefy airplane.

I probably got some of the historical facts wrong in this saga, so be sure to corral Bill during the upcoming BBQ to get the real story. Until then...

Fly Safe and Check 6,

- Gary Aldrich
Kommanding

We Flew Didn’t Fly To Hellmuth’s!!

The planned raid on Adelanto Airport (52CL) on Saturday **April 26, 2014** didn’t happen. Instead, we all stayed away from the airport and wondered if the trees in our respective yards were going to blow over in the insane wind. **Hellmuth** said it best, “It was simply too windy for anyone to fly anywhere. Thank you for your good intentions.”

Half A Pound Here, Half A Pound There, And Pretty Soon You’re Talking A Lot Of Weight

Prior to first flight, every homebuilt gets a Weight and Balance measurement. However, every homebuilt inevitably will get modifications, as problems are identified and repaired. In addition, the industry keeps inventing new gadgets and gee-gaws that we just have to have in our airplanes (just ask the **Kommandant!**)

Whenever a modification is made to an airplane, the FAA expects you to update your Weight and Balance by adding the weight of the modification to the existing empty weight. However, the FAA will let you skip this step if the weight change is “negligible”, which is generally considered less than 5 pounds.

That’s fine if you only make one modification, but what happens if you make a whole bunch, such as happens when you are trying to work out all of those bugs in your new homebuilt? Consider this: If you spent \$5 on lunch each work day for a month, that adds up to \$100, which is hardly “negligible”.

With this in mind, I decided this year to do a full up weight and balance on the **Combat Bearhawk**. Just in

case you didn’t know, **EAA Chapter 1000** owns a set of scales (sold for weighing race cars) suitable for the purpose and available to chapter members.



Silly me, I guessed that it might have gained 5 pounds, certainly no more than 10 pounds. When I finally crunched the numbers and accounted for the fuel weight, I found that the **Combat Bearhawk** had gained **38.7** pounds (!). Krap! That means my airplane has gained almost as much weight as I have! (At least the good news is that the CG moved forward by 0.64 inches.)

Needless to say, this caught me a bit by surprise. I decided to go through my logbooks and make a list of all of the modifications and fixes I had made since the last weighing that could have adjusted the weight, no matter how small they may have been. Over the space of 6 years, I came up with 50(!) entries. Hmm...in the spirit of Steve Wittman, who is attributed to have said “every pound is made up of 32 half-ounces”, I set out to estimate the weight of each modification. That led to the following table (sorted from heaviest to lightest).

Weight (lbs)	Modification
5	Wing strut fairings and shock strut fairings installed
5	New alternator installed
4	Shoulder straps added
3.1	Front seat belts added
3	iPad RAM mount added
3	audio mixer added
1.2	Axle reinforcements installed
1	Tail wheel yoke strengthened with doublers
1	Current cowl louvers installed
1	Oxygen cylinder brackets installed
1	Autopilot controller changed to metal box. Copper tape added for shielding
1	Final heavily reinforced cowl flap installed
1	aera 510 mount added
1	Doublers added to lower cowl to support air filter housing
1	Engine heater installed
0.875	Weighed with 0.5 qt additional oil

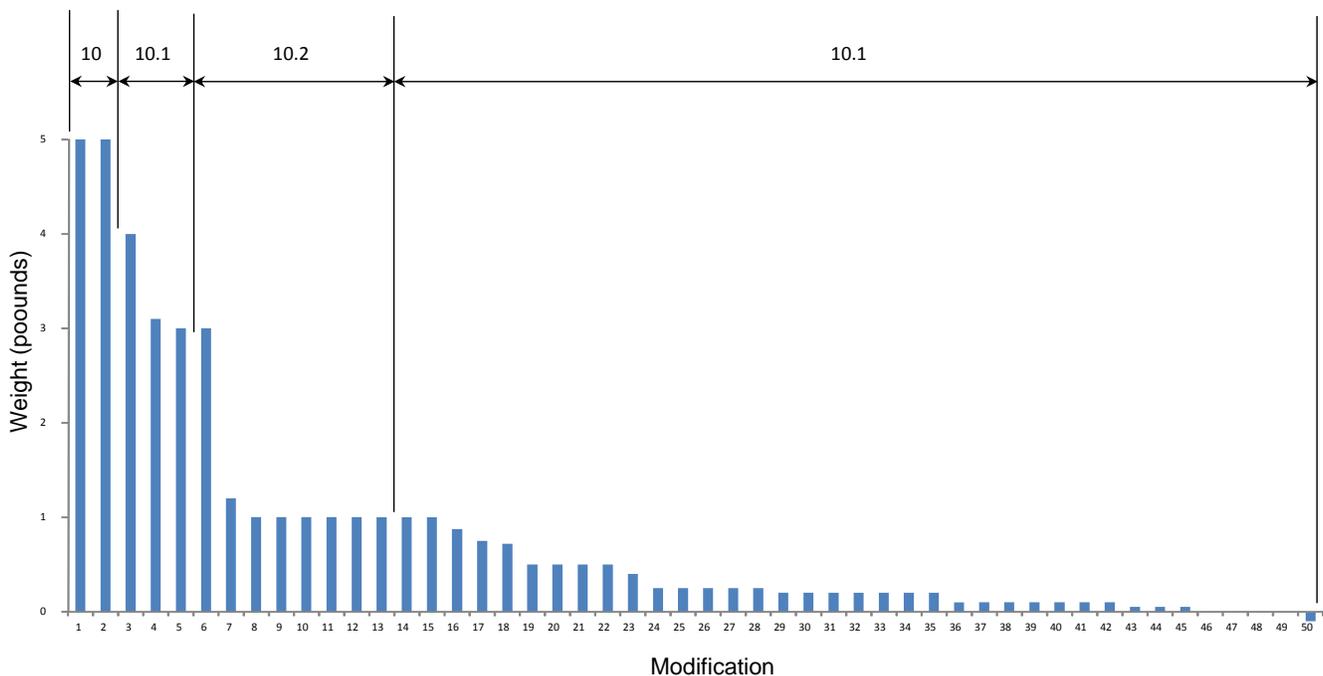
0.75	Antenna 1 replaced with Comant antenna. Wood spacer block added
0.72	Ground planes installed on both COM antennas
0.5	Ground loop repair Wing Tip, Nose Bowl fiberglass
0.5	Weather stripping added to all doors
0.5	Engine compartment SCAT tubing replaced with SCEET tubing
0.5	Spark plugs replaced with slightly larger plugs
0.4	2 Ground loop isolators added to inputs for audio mixer
0.25	Tail wheel caster changed (additional washer, longer bolt)
0.25	Filter added to autopilot controller
0.25	Cooling SCAT on alternator
0.25	Doublers added to top center cowling
0.25	Doublers added to top center cowling
0.2	Cigarette lighter and USB power supply added for iPhone
0.2	New flap handle with strengthening doublers installed
0.2	Armament sounds rewired to music input
0.2	Rear seat heater tube replaced with SCEET slightly longer
0.2	Improved primer design
0.2	Firesleeve added to primer inlet
0.2	Springs added in muffler heat muff
0.1	Safety wire wrapped around control stick to address freeplay
0.1	BNC splices added under panel in antenna cables
0.1	Dacron protective layer on seat backs
0.1	Fabric reinforced under battery cables

0.1	Gascolator cover reinforced with fiberglass
0.1	Window catches replaced with new design
0.1	Fabric patches added over gascolator, transponder antenna, front seat belt anchors
0.05	Oil Filler Door stiffeners added
0.05	Stiffening flange added to mouse doors
0.05	Doubler added to left cowling door
0	Beefed up trim tab pushrods
-0.0008	Root ribs trimmed to relieve rubbing on aileron cross connect cable
-0.001	Three upper flap hinge covers trimmed for clearance
-0.003	Flap cable junction plate shortened
-0.1	Keep alive fuses removed from battery fuse blocks

These numbers were my initial guesses. They have not been massaged to make the answer come out a particular way. Even so, the sum of all of the weights was 40.4 pounds! That's close enough to the real number to convince me the numbers are reasonably close.

I didn't do this so much to justify to myself why the airplane was heavier, but rather to investigate the concept of just how negligible is negligible. You will notice that everything on this list fits my definition of negligible (less than 5 pounds). Even so, a whole lot of almost nothing adds up to a significant amount of something!

Another way to look at these data is graphically. Look at the histogram below. Each column represents the weight of one modification as listed in the table. If you think about the tops of the bars as a continuous function, then the total weight would be the integral of that function.



If you can't remember what integral means (possibly due to PTSD), it is the area under that curve. The annotations show that the first two modifications account for 10 pounds of the total. The next three modifications account for 10.1 pounds. The next eight modifications account for 10.2 pounds. Probably the most enlightening insight from this graph is that the last 37 modifications add up to 10.1 pounds, even though none of them are greater than a pound. In fact, the average weight of these 37 is a little more than a quarter of a pound. That's only 3 ounces a piece. This stuff really adds up!

I'm hoping this trend doesn't continue, since hopefully the weak spots from the original build have been beefed up and repaired.

If your airplane hasn't been weighed in a long time, you might be surprised (like I was) how much it has changed. As a *PPO* you can't use the excuse that you don't have scales available to you.

The other side of this story is what happens when you pull out a lot of old stuff while upgrading your airplane. Hopefully **Opie** will submit an article about how much weight the **Twinkie** lost when they installed the new engine monitor.

- Russ Erb

Yes, There Are *PPOs* Building Airplanes!

Do you miss those days when a Chapter 1000 meeting program included visiting at least three projects in progress? We don't seem to do that anymore because most of those projects either moved away or became flying airplanes. The latter is what we all shoot for, but it is still fun to see projects in progress.

I can think of three projects in progress in EAA Chapter 1000. One is **Stormy's RV-8**, which Stormy moved to Texas, which seems like a bit of an over-reaction to the marauding *Project Police*. Rumor has it that there were some other issues involved.

Another project is **Brian Martinez's** modified **Defiant**. We have inspected this one in the last several years, but not recently.

The third project has been quietly in progress away from prying eyes hidden in plain sight in Tehachapi. **Miles Bowen** isn't intentionally keeping his **RV-7** a secret—it's just that many of us don't spend much time in Tehachapi, at least not during the hours when we could see the project without having to forcibly break into the house, which is generally frowned upon in the *Project Police Operations Manual*.

This didn't slow down a crack *Project Police* team made up of **Evil Editor Zurg's Whipping Boy** and the **Schmoozemistress** from visiting the project a few times. The first visit was immediately following the flight to **Hellmuth's** place in 2013.

Miles actually has two projects, a **Harmon Rocket II** that is currently on hold, sharing the hangar with the

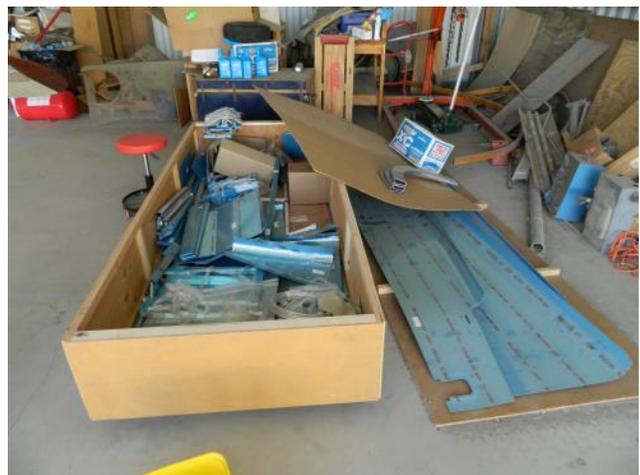
Cessna 170B, and a **Van's RV-7** which occupies the garage and other parts of the house.



Rocket horizontal stabilizer and some random spars and fuselage parts



Rocket vertical fin and elevators



Airplane parts in the semi-raw. Those shipping boxes are nice.



RV-7 right wing with aileron sans fuel tank and lower skin



Left wing in a similar condition



For reasons that were never fully explained, the fuel tanks, flaps, and other assorted parts are staying in the guest bedroom

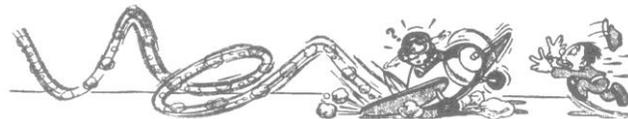


Center fuselage section (the part with the spar carry through) upside down on the sawhorses. There's a lot more attached to it now.



Fuselage tail cone. It's attached to the rest of the fuselage now.

Recommend that Vice Kommandant Steinlin schedule a future meeting in Tehachapi for the purpose of a full-up *Project Police* raid on this project (R1)¹



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.

¹ This footnote placed here as a mock reference to the Air Force Test Center's Author's Guide to Writing Technical Reports

Chapter 1000 Calendar

May 6: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

May 10: Twenty Third Annual Project Police Airport Barbecue, Rosamond Skypark (L00), Rosamond CA. (661) 609-0942

May 20: No EAA Chapter 1000 Monthly Meeting. You should have gone to the BBQ 10 days ago

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

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

Jul 8: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

Jul 15: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Jul 28 – Aug 3: EAA AirVenture. Oshkosh WI.

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

Aug TBA: EAA Chapter 1000 Baseball Meeting. The Hangar, Lancaster CA. (661) 609-0942

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

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

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

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

Nov 18: EAA Chapter 1000 Monthly Meeting, 6:30 p.m., Location TBD, Rosamond CA. (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 SERVICE REQUESTED

THIS MONTH'S HIGHLIGHTS:

23rd AIRPORT BBQ AT HIGH CAY

KOMMANDANT RENEWS HIS A/MEL PIC

BEARHAWK GAINS WEIGHT

BOWEN PROJECT POLICE REPORT

