



# 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>

January 2000

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.

## PROJECT POLICE NOTAM!

### UTMOST URGENCY!

In case you haven't gotten the word yet, USAF Test Pilot School (TPS) has moved! We will still be allowed to hold our meetings at TPS during the period of exile from Building 1220. If you go where you always went before looking for the meeting, you'll find a gutted building and no Chocolate Chip Cookies (C<sup>3</sup>). Go instead to Building 1864. See map on next page.

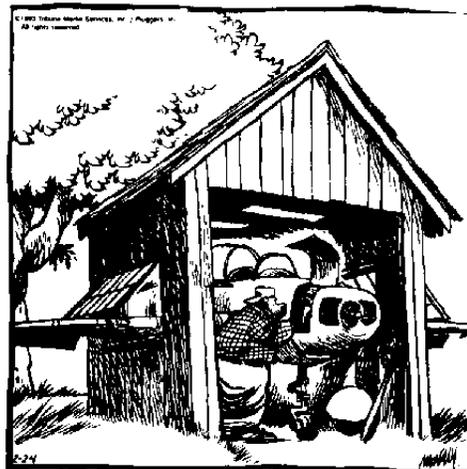
### 2000 Dues Are Due!



It's time to pay your dues for Y2K! Everybody is liable for payment, regardless of when you paid your 1999 dues. **This means YOU!** So get your name removed from the Treasurer's hit list and become a *Hero of the Project Police, First Class* by paying the miserly sum of \$20 to the Treasurer. In case you haven't noticed the change, send your checks to **Doug Dodson**, 4431 Knox Ave, Rosamond CA 93560-6428. If you think you've already paid, check with your Newsletter Editor, **Russ Erb**, Keeper of the Chapter Database.

### This Month's Meeting:

PLUGGERS



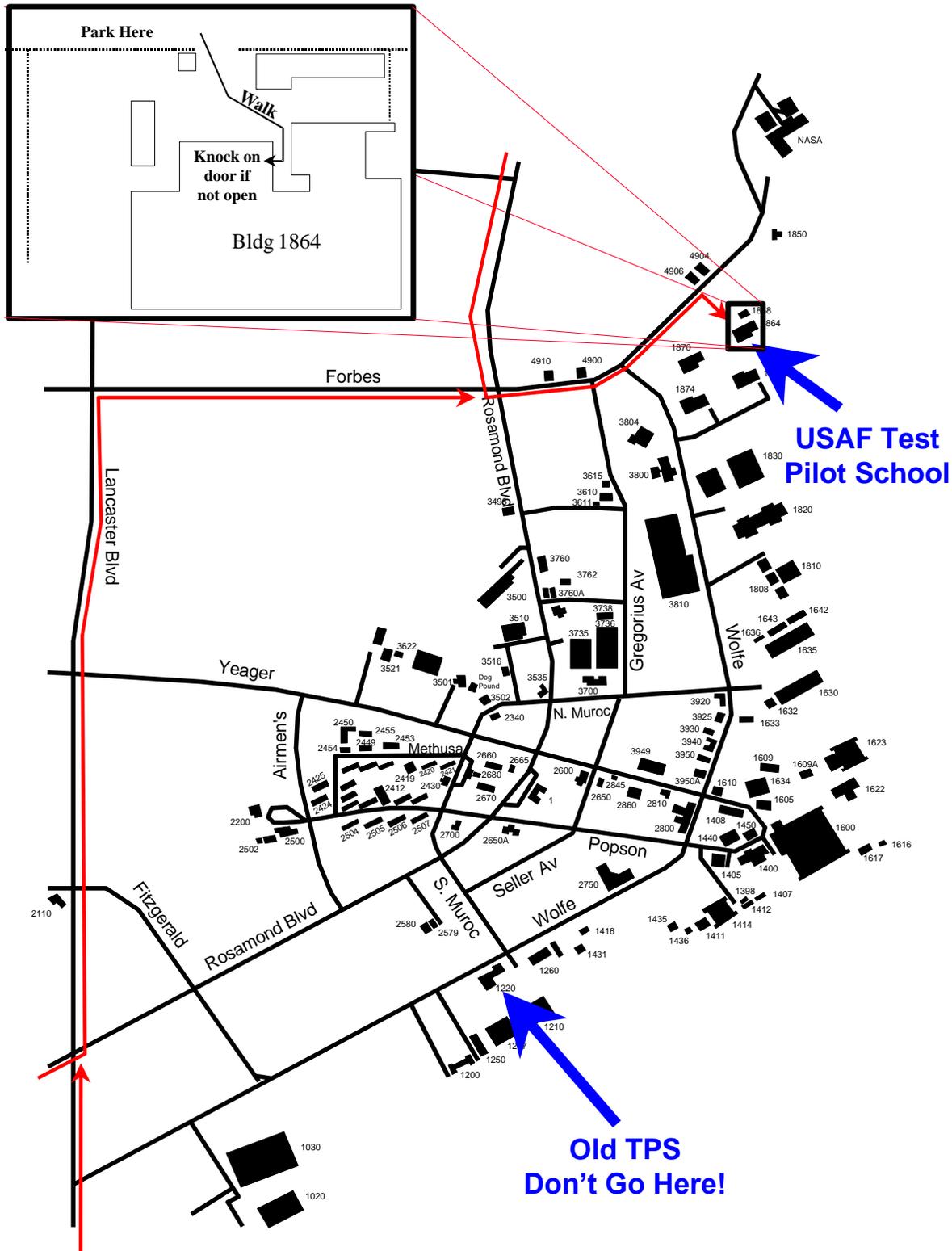
You're a plugger if you've built an airplane from the runway up

### PROJECT POLICE PROJECT PROGRESS PRONOUNCEMENTS

Tuesday, 18 January 2000  
1700 hrs (5:00 PM Civilian Time)  
USAF Test Pilot School Auditorium  
Edwards AFB, CA  
(See Page 2!)

This month has caught **Herr Vice Kommandant** struggling to interpret the latest reconnaissance from the Northern Front. Cunningly deciphering the facts from all the propoganda covertly being distributed, I was able to learn at the last possible moment that our meeting would indeed be held at or near the vicinity of the Test Pilot School Auditorium at Edwards (see directions in the newsletter)....

As I said, "*At The Last Possible Moment*", I was able to put together one of the most elegant of presentations, to snatch defeat from the jaws of victory so to speak. As your dually sworn *Project Police Officer* and **Vice Kommandant**, I will make this amazing and resounding recovery for the benefit all Chapter 1000 members in good standing (*i.e Pay Your Dues!*). Mmmmm...Ahhhh, let's see...Yes, just as I had planned it all along, a review of all



of the projects that our clever and talented members are undertaking. That means that all of you will be subject to the scrutiny of your elected officials as to the amount of progress you are making on your projects. So, consider this fair warning, and get busy out in the garage/hangar/what have you, and make some progress. Last month's *Project Police* raids were a resounding success and we intend to keep the pressure on during this month's meeting. Expect to be grilled under the hot spot

lights of the interrogation room. **Russ, Gary and Miles** will be playing good cop – bad cop with you concerning project status—you have to figure out who's being good and who's being bad (points will be awarded for correct guesses). So come on out and enjoy some chips, dips and chocolate chip cookies at the next meeting

- **George Gennuso**  
**Vice Kommandant and Schmooze Meister**

Last Month's Meeting

EAA Chapter 1000

Erbman's, Hojo's, and Opie's  
 Edwards AFB and Rosamond CA  
 1700, December 21, 1999  
 Gary Aldrich, Presiding

This month's meeting was a **Project Police Officer Training Field Trip**. Since it's tough to describe the experience of viewing these fine projects, we will mostly resort to pictures, graciously provided by **Kevin Prosser**.

Erbman's Bearhawk

The first stop was on base at **Russ Erb's** workshop, where he is working on the title for the "Biggest Airplane Built In The Smallest Space." Squeezed into a one-car garage are a wing jig, paint booth, alodine tanks, and several EAA Chapter 1000 Standardized Worktables. **Bill Irvine** was noted to be impressed, as he has been heard to complain numerous times about the smallness of his work area (bigger hangar, but bigger plane). The ten or so folks who showed up got quite cozy and friendly as we squeezed around the displays. Drinks and homemade C<sup>3</sup>s were available in abundance.



Of special note were the attendance of **Charlie and Glenna Wagner**, who were in town taking care of some business and still trying to sell their house in North Edwards.

Hojo's Giles G-202

In a movement of exquisite precision and skill, the **PPOs** moved to their **Ground Assault Vehicles** and departed in close formation for the 20 minute drive to Rosamond (that is, if you consider "close formation" to be defined as "same way, same day"). The next target was the workshop of **Howard Judd**. This was a re-check to determine his progress since we last inspected him in January 1998. The **PPOs** gathered were quite pleased with an excellent show of workmanship.

**Hojo** was the envy of many a **PPO** as he showed us one benefit of living the single life, namely airplane parts strewn around the house for storage. Keeps the workshop from being so cluttered.



Opie's Glasair

Feeling sufficiently impressed, we guided the formation of **PPOs** over to **Doug Dodson's** hangar, where the Mooney was sitting outside, leaving plenty of room for the Glasair. **Opie** had every intention of impressing us...impressing us into service, that is. Through careful planning, Opie had reached the point where he needed the Glasair wing and fuselage re-mated. Of course, the idea of getting to do real work on a real homebuilt was the thrill of the evening to the **PPOs**. The **Kommandant** was barely able to maintain order as he jockeyed in front of us trying to get the best position where he could appear to be exercising command without the danger of actually damaging anything. The fuselage was jacked up using a crane on the engine and an anthropomorphic jack on the tail, strangely resembling **George Gennuso, Kevin Prosser, and Bernie Bakken**. The wing was slid under the fuselage and bolted back into place.



### **Victory Celebration**

After an exciting round of project inspections, all **PPOs** present were **fully mission qualified** (or **recurrent** for previously trained **PPOs**). In celebration, we moved to the **Project Police Alternate Messing Location**, more commonly known as the **Golden Cantina**. Good food was consumed, good lies were swapped, and good times were had by all.



- Erbman  
Pseudo-Psecretary

**The Prez Sez...**

If you are reading this I guess that no latent Y2K disasters have befallen you or your air machines. Personally, I was extremely relieved after reading Cessna Aircraft Corporation's Single-engine Service Bulletin that stated (equivocally) that all Cessna single-engine aircraft were considered to be "Y2K-compliant". Having flown the Skywagon to and from Oakland on the 1st, I can attest to their lawyers' correct assessment of the situation.

So, what else is new? Well, the new year/millennium/decade/century, etc. finds a change in venue (sorta) for chapter gatherings. Starting this month, you will have to drive a couple of miles further down the flight line to find the meeting as the Test Pilot School has been spirited off to Building 1864. Old Edwards heads may remember this building as the former home of the stillborn SR-71 detachment (they even left some "surplus" Blackbirds on the ramp). Older heads may have visited the Combat Talon II folks here; and if you're as old as me (whew!) you can remember when McDonnell Douglas (who?) was testing the brand new AV-8B Harrier II here.

Since the "hassle-factor" has increased due to the fact that entering our new digs puts one on the "hot" side of the flight line fence, your board considered moving the meeting location to one of a number of sites off the base. I resisted this idea since I firmly believe that meeting on Edwards is a strong part of who we are. Time will tell whether this was a good decision, and I welcome your feedback on the subject. Bottom line...don't just put your ground assault vehicle on autopilot this month when driving to the get-together or you will find yourself all alone in an asbestos-ridden shell of a former TPS building.

See you at the meeting!

**- Gary Aldrich,**  
Kommanding (still)



**Young  
Eagles  
Update**

**Fox Field, Lancaster, December 11, 1999**

We picked another good day; a little windy, but not as bad as forecasted. We had lots of Boy Scouts at this rally. I was finally able to talk to the right people and fill out all of the right paperwork. Flying is a sanctioned event for the Boy Scouts, but there is a stack of paperwork and rules that makes arranging rallies for the Scouts difficult. I think we are set up now, so we have an endless group of very eager Young Eagles.

This rally, we flew 29 Young Eagles. We had 6 pilots and 5 ground volunteers. I have computed the preliminary year end totals and we are just 5 Young Eagles short of 300 for 1999. If anyone has flown Young Eagles this year and has been sitting on the applications, please get them to me ASAP so we can get credit for this year.

This rally was rough on our equipment however. Both of our new cameras gave out at the same time. I will try to return them to Wal-mart soon. Also, Ron Wilcox's printer quit. He has been donating his computer and printer for most every rally. Its time for the chapter to consider buying a printer.

The winners for this year's most flown Young Eagles have been determined, but I will keep their identity classified until the banquet. Thanks for making this a very successful year. Many of you are committed to making it to every rally and you are the ones who make this event work and I really appreciate it. I saw many new faces toward the end of the year, and that is refreshing. Please make a new years resolution to join us for at least one of the rallies in 2000 - you won't regret it.

For those of you reading this in the Chapter news letters, if you are not on my e-mail notifications and would like to, please send me an e-mail at: rv6@cybersurfers.net.

**Ground Crew:**

- Miles Bowen** *Tower tours*
- Ozzie Levi** *Post-flight certificates and pictures*
- Bethany Rex** *Tower tours*
- Paul Rosales** *Post-flight certificates and pictures*
- Ron Wilcox** *Pre-flight registration*

<b>Pilots:</b>	<b>Equipment:</b>	<b>#YEs</b>
John Bush	Cessna 140	4
Doug Dodson	Mooney M20C2	6
Ed McKinnon	Mooney 23	8
Dick Monaghan	Luscombe 8A	3
Con Oamek	Bonanza F33A	5
Gary Trippensee	Luscombe 8A	3

**Young Eagles this Rally: 29**  
**Young Eagles this Year: 295**  
**Young Eagles Grand Total: 2591**

2000 Rallies are tentatively scheduled as follows. If you see a conflict, please let me know.

- Jan 8th - Fox Field
- Feb 12th - Cal City
- Mar 11th - Fox Field
- Apr 8th - Rosamond
- May 13th - Fox Field
- Jun 10th - Tehachapi
- Jul 8th - Fox Field
- Aug 12th - Cal City
- Sep 9th - Fox Field
- Oct 14th - Rosamond
- Nov 11th - Fox Field
- Dec 9th - Tehachapi

**- David McAllister**

## Operation Rubidoux Sundown VIII



A quick check of the **Project Police** records indicate that EAA Chapter 1 is about due for a re-check on the good times and chocolate chip cookie front.

Recent intelligence reports indicate that they will be hosting their 46<sup>th</sup> Annual Open House and Fly-In on 26 - 27 February 2000. This is just the sort of event that makes a perfect cover story for a little "inspection."

Therefore, **Operation Rubidoux Sundown VIII**, the annual **Project Police** raid on Flabob International Airport, is scheduled for **26 February 1999**. A duly authorized **Project Police Tactical Assault Force (PPTAF)** is being formed for this event. For proper coordination, some initial action on your part is required. If you have an **Aerial Assault Vehicle**, you need to call pre-raid coordinator **Russ Erb** at 661-258-6335 or e-mail at [erbman@compuserve.com](mailto:erbman@compuserve.com) and tell him if you have room for any additional **Project Police** Officers. If you do not have access to an **Aerial Assault Vehicle** but wish to participate in this exciting event, you need to call pre-raid coordinator **Russ Erb** at 661-258-6335 (*hey! that's the same number!*) or e-mail at [erbman@compuserve.com](mailto:erbman@compuserve.com) and get matched up with an airplane.

Appropriate identification placards will be available from Russ for your aircraft. Display of the placards is mandatory to avoid the embarrassment of the **Project Police** accidentally inspecting your aircraft. They also have the desirable side effect of striking fear into passers-by.

We will continue our highly successful raid format by again starting with a sumptuous breakfast and pre-raid briefing at the Apple Valley (APV) airport restaurant, where we will admire the **Project Police's** graffiti skills. Other intelligence reports indicate that EAA Chapter 1000 Technical Counselor **Gary Sobek** is arranging to meet us there to augment the **PPTAF** with the **SoCal Wing of Van's Air Force**. From there, we will make a high precision infiltration and strike to the land of the Flabobians. Expect that we will be able to accomplish our objectives and still be home in time for dinner.

The uniform for this operation includes the black **PPTAF** T-shirts, sunglasses, and appropriate headgear. Definition of the remainder of the uniform is left as an exercise to the reader.

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## So You Want To Be An Airplane Designer?

*The following is an excerpt of an article I wrote addressing specific modifications that had been proposed for the Bearhawk. These sections would apply to any aircraft, and are supplied here for your education (and to fill up space).*

## Defining Your Mission

No, this isn't trying to describe the Alamo or San Jose. This is simply deciding what you plan to do with your completed aircraft. Knowing what your planned mission is will help you answer many questions. For instance, if your desire is to cruise at 25,000 feet at 300 knots, you will know that you don't want to build a VP-1 Volksplane. The Glasair III is a fine aircraft, but would not be a good choice if you want four seats to carry yourself, your spouse, and your two kids. When deciding what aircraft you want to build, you should start with an aircraft design reasonably capable of completing the mission without modification.

## The "Design Propagation Nightmare"

Design is characterized by a series of compromises. A design is not optimized to do any one thing, but to do everything adequately. A design optimized for strength would probably be too heavy. A design optimized for minimum drag would probably be difficult to build and maintain.

A design is like a house of cards--if you move one card, it affects all of the other cards. **Miles Bowen** has said that changing the number of screws in the spinner would eventually require a new tailwheel. Changing one item will change another, which will change another, which will change another, until an incredible amount of seemingly unrelated things have been changed. This is what I call the "Design Propagation Nightmare."

A classic historical example was designing the Spirit of St. Louis. Charles Lindbergh went to San Diego to visit the Ryan Company and was suitably impressed with the Ryan M-2 Mailplane. It looked like it would suit his mission of flying from New York to Paris. It was a three place aircraft with low drag, an efficient design for its day, and a good, reliable engine. Sounds perfect, except it had one minor problem—it didn't have sufficient range to fly from New York to Paris, which, of course, was a major mission requirement.

Now at this time, a typical homebuilder might think "No problem! We'll just put in a larger fuel tank." If only it were that simple. The Spirit of St. Louis makes such a good example of the Design Propagation Nightmare because Lindbergh was not interested in increasing the endurance of the airplane by a couple of hours. He needed to increase the fuel capacity by 750%! Adding this much fuel impacts the design in two major areas—volume and weight.

Volume was a problem because there wasn't enough room in the wings or a header tank for that much fuel. The large amount of fuel compared to the aircraft's empty weight (fuel fraction) meant that it was possible that the aircraft's center of gravity could change drastically as the fuel was consumed. To minimize the change in cg, all of the fuel tanks were concentrated around the cg. Additionally, Lindbergh did not want any fuel tanks behind the cockpit for fear of getting trapped between fuel tanks in a crash, especially during takeoff. The most obvious effect of this decision was that the fuel tanks totally blocked his forward visibility. Lindbergh decided that this was an acceptable impact for several reasons. Taildragers are notorious for poor visibility on the ground, so what's a little less visibility? Most of the flight

would be over water on instruments with no landmarks to see anyway. Lindbergh was also confident that there would not be any other aircraft on his route that he would need to see and avoid.

The increased weight dictated that more wing area was needed to keep the wing loading to an acceptable value for the available power and to keep the cruising speed close to the best range speed. Donald Hall, the designer, chose to keep the same chord, allowing him to use the existing wing ribs and the same fuselage attachment. Wing area was increased by increasing the wing span. With a larger wing span, the longitudinal and directional stability were both decreased. The solution to both of these problems was to either enlarge the tail surfaces or to lengthen the fuselage. In this case, Donald Hall decided it was easier to lengthen the aft fuselage than to redesign the tail surfaces. Lengthening the aft fuselage threw the cg out of whack, so the nose had to be extended to compensate.

The increased span also decreased roll performance, but since roll performance was not important to this mission, the ailerons were not changed.

The increase in span did create an increase in wing bending moments, which required beefing up the wing structure, which added more weight.

The increase in gross weight required a stronger landing gear, which again adds more weight, and may cause more drag. More weight and drag requires more fuel, which increases the weight, and the cycle repeats.

The end result was that the NYP (as Ryan Aircraft designated the design) was a totally new airplane except for the tail feathers, all because of a "simple little change."

The vast majority of modifications, especially those typically added by EAAers, all have one thing in common—they add WEIGHT! In my extensive studies, I have only found one instance where adding weight is a good thing. Racing sailplanes carry water ballast to increase their gross weight, which increases the airspeed for best glide without changing the glide ratio. Even in this case, the water ballast is jettisoned prior to landing to restore the landing speed and weight back to an acceptably low value. In every other case I have ever looked at, adding weight will be a detriment to aircraft performance.

- Russ Erb

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### **Scenes From The Eighth Annual Scotty Horowitz Going-Away Fly-In**

The following is a picture which has recently bubbled to the surface from last year's EAA Chapter 1000 Extravaganza. It shows the level of effort undertaken to ensure all methods of transportation are equally welcome and accommodated.



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### **Want Your Own Huge Workshop?**

As mentioned before in the 'Edge, Charlie and Glenna Wagner's house in North Edwards is for sale. This may be of interest to you—the three section workshop is roughly as big as the rest of the house. If you are interested in the house, call them at 775-867-4394.



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### **Web Site Update**

As of 9 January 2000, the hit counter stood at **37691**, for a hit rate of 39 hits/day for the last month.

Got this e-mail recently: "Dear Russ, I was past Pres of Santa Barbara Chapter 527 twice in the years past, and relocated to the Shenandoah Valley in 1995 and joined Chapter 511.

Your web site is fantastic, and I have printed your "This Is So Cool" to review with the powers to be in this chapter. Thank you for all the suggestions, and if we do get something going, I'll let you know. Again, a great job building the 1000 web site.

Regards, Ron Browne 1965 M20E Mooney N65EC residing at Eagle's Nest Aviation Community in Waynesboro, VA.

 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**

**Jan 18: EAA Chapter 1000 Monthly Meeting, 5:00 p.m.**, Edwards AFB. USAF Test Pilot School (Bldg 1864), Scobee Auditorium. (661) 609-0942

Feb 8: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., Edwards AFB. Test Pilot School, MOL Room (661) 609-0942

Feb 2: EAA Chapter 49 Monthly Meeting, 7:30 p.m., Sunnysdale School. 1233 S. Ave. J-8, Lancaster, CA. (661) 948-0646

Feb 8: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., Edwards AFB. Test Pilot School, MOL Room (661) 609-0942

Feb 12: Young Eagles Rally, Cal City Airport, 661-822-0462

**Feb 15: EAA Chapter 1000 Monthly Meeting, 5:00 p.m.**, Edwards AFB. USAF Test Pilot School (Bldg 1864), Scobee Auditorium. (661) 609-0942

**Feb 26: Operation Rubidoux Sundown VIII**, Flabob International Airport. (661) 258-6335

Mar 11: Young Eagles Rally, Fox Field, 661-822-0462

Mar 14: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., Edwards AFB. Test Pilot School, MOL Room (661) 609-0942

**Mar 21: EAA Chapter 1000 Monthly Meeting, 5:00 p.m.**, Edwards AFB. USAF Test Pilot School (Bldg 1864), Scobee Auditorium. (661) 609-0942

**May 20: Ninth Annual Scotty Horowitz Going Away Fly-In**, Rosamond Skypark (L00), Rosamond CA.

**For Sale:**

Sonerai IIL project. Fuselage and wings 95% complete. Modified for A65 engine. Engine torn down for overhaul but complete with a great many spare engine parts. Includes instruments. Hydraulic brakes. All excellent work. Call Fletch Burns 760-373-3779

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, 661-258-6335, by e-mail to erbman@compuserve.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:  
TPS HAS MOVED! NEW LOCATION INSIDE  
REGULAR MEETING 18 JANUARY AT TPS  
PLANS FOR FLABOB RAID  
SO YOU WANT TO BE A DESIGNER**

