experimental aircraft association

THE LEADING EDGE

NEWSLETTER OF MUROC EAA CHAPTER 1000

Voted to Top Ten Newsletters, 1997 McKillop Award Competition

President	*Gary Aldrich*	*805-490-1476*
Vice-President	*George Gennuso*	*805-265-0333*
Secretary	*Miles Bowen*	*805-822-0806*
Treasurer	*Mike Meyer*	*805-258-4328*
Newsletter Editor	*Russ Erb*	*805-258-6335*

http://www.eaa1000.av.org *February 1998*

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.

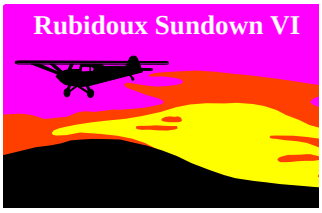
WARNING

Due to the numerous major activities available to the Chapter 1000 members in the month of February (Chapter Leadership Workshop, ***Operation Rubidoux Sundown VI***, and Charlie Wagner's Electrical Workshop), you Board of Directors has decided that holding the regular meeting on 17 February 1998 might be hazardous to the membership's health. Possible effects listed were member's heads exploding from exceeding their monthly quota of EAA fun (an affliction common at the Oshkosh Convention) or members exceeding their monthly quota of kitchen passes.

The membership is warned **NOT** to show up at TPS at 1700 on Tuesday, 17 February 1998. Members failing to heed this warning are highly likely to suffer great embarrassment from their gross buffoonery.

The membership is advised that gathering at the ***Project Police*** EDW messing facility (aka Burger King) around 1700 can be accomplished without great embarrassment and is highly recommended.

Operation Rubidoux Sundown VI



It's time to put up or shut up! Our first major ***Project Police*** operation is fast approaching, and the Board of Directors has even granted you a Tuesday night off to prepare, so ***NO EXCUSES!***

Operation Rubidoux Sundown VI, the annual ***Project Police*** raid on Flabob International Airport, home of EAA Fiefdom 1, is scheduled for **21 February 1998**. 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 805-258-6335 or e-mail at 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 805-258-6335 (*hey! that's the same number!*) or e-mail at 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.

Project Police Operatives at the recent Chapter Leadership Workshop managed to drag the name of the Banquet speaker out of Jan "The Hammer" Johnson. **Carl W. Buck**, Mechanical Systems Developer of the JPL Mars Pathfinder project will speak about the recent mission.

Intel reports confirm that the usual disinformation campaign is reaching Chapter 1, who again is taking feeble steps to try to protect themselves. Prior raids have only seen minor resistance, although more recent intelligence indicates that Chapter 1 is planning some "surprises" for us.

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.

Chapter 1000 Electrical Workshop

As a proper follow-on to our outstanding programs on aircraft electrical systems, Chapter 1000 will be hosting an Electrical Workshop at **0900** on **28 February 1998**. Your instructor will be Master Electrical Dude Charlie Wagner, who has 40 years experience with airborne electrons and has done an exemplary job creating the wiring harness for his RV-6A. Now is the time to try your hand at what you've learned at the meetings (come even if you missed the meetings).

This workshop is expected to cover such topics as laying out wire bundles, proper stripping and crimping

techniques, use of heat shrink tubing, assembling Molex connectors, soldering components to printed circuit boards, wrapping the completed wire bundles, and lots of other hands-on fabrication type issues. Charlie will also display the completed portions of his RV-6A instrument panel so you can see how the master does it (yes, they're modular and removable--your's should be too). Come planning to get involved and participate.

The current planned location for the workshop will be at the old FBO hangar at Rosamond Skypark (L00). Charlie is expecting spend most of the morning and afternoon discussing, demonstrating, and letting you try your hand at this vast subject. Come for part of the day or the whole day. Discussions have suggested lunch at the L00 Messing Facility (aka Golden Cantina). Call Charlie at (760) 769-4336 to tell him you're interested in coming. See you there...and please come adequately grounded.

Last Month's Meeting

EAA Chapter 1000
Howard Judd and Dave VanHoy's Secret Aircraft Factory, Rosamond CA
1700; 20 January, 1998
Gary Aldrich, presiding

The Not-So-Secret *Project Police* Raid

This month's meeting consisted primarily of a pre-planned ***Project Police*** raid on the house of **Howard Judd** where he and **Dave VanHoy** had their Giles G-202 on display waiting for us. Somehow word had leaked out that we were coming. Since Dave's newsletter was kicked back by the U.S. Postal Service (*send me an updated address!*) we can only suspect that HoJo was guilty of actually reading and paying attention to his newsletter. The lengths some people will go to…

The Initial Assault

When I arrived about 1720 with my wingman **Gary Aldrich** tucked in closely in trail formation, the grilling had already begun. We had **Bob Waldmiller** cornered right on our 6 o'clock, who had just recently finished the Cherokee rebuild.

Project Police Officer **George Gennuso** was the first to report a discrepancy. HoJo and Beans were cited for one count of "*Lack of Motivational Photograph In Workshop*." According to the ***Project Police*** Inspection Manual, each workshop should be equipped with a photograph or drawing of a completed example of the project for use for motivational purposes.

We attempted to cite the perpetrators for not using **Chapter 1000 Standardized Work Tables**, but were informed the table we were viewing was *not* a worktable but manufacturer-specified tooling for aligning the cradle blocks for the wing assembly which was found there upon. This variation was allowed, and we were directed to two standardized work tables positioned along the wall. One of these tables was found to meet specs, but the other showed a blatant disregard for the designer's intent and **Bob Waldmiller's** exhaustive research to determine the optimum height for a table to be 33-3/4 inches. The offending table was approximately 12" too tall. HoJo, who probably ranks in at least the 95th percentile for height in Chapter 1000, offered the weak defense that the tables were designed for the 50th percentile builder. This reasoning was disallowed, and Bob was heard to say "Well, we'll just have to saw your legs off!" It was not clear if he was referring to the table's legs or HoJo's.

Like many projects, much of the work done heretofore was not necessarily obvious. The left wing was upside down on its cradle table. It was mostly as received, but getting it properly aligned and in that cradle was no simple feat. This aircraft has a fuselage fuel tank which is used for aerobatics. For cross-country, this tank is supplemented by a tank in each wing between two spars and the upper and lower skins. The sealant had been applied in the tank area. The full span ailerons were assembled and mounted in place. The part of the wing that was most popular among the inspectors was the electrical wiring harness conduit, consisting of highly refined, precision-milled, aircraft-quality thinwall PVC tubing (you know, that pipe you pick up at Home Base to repair your sprinkler system).

The fuselage halves have not been bonded yet, but were displayed assembled. The vertical fin consists of fiberglass, unlike the carbon fiber of the rest of the airframe. This allows placing the COM antenna inside the vertical fin structure. The vertical fin and horizontal stabilizer were assembled and in place on the fuselage. The rudder, which had been shown at the December 1996 chapter meeting fresh out of the box, was assembled and displayed on a nearby table.

Much discussion was heard amongst the inspectors, and all were in agreement that the workmanship on display was of the highest quality and met ***Project Police*** standards. HoJo and Beans were authorized to continue with the project.

However, immediately prior to the mass exodus from the ~~garage~~ workshop, **Bob Waldmiller** produced the ***Project Police***'s secret weapon, the dreaded ***Project Police Dust Depth Detection Indicator*** (***P^{2}3DI***). This instrument of terror was handed to **Gary Aldrich**, who proceeded to follow the instructions printed thereon. We suspect that President Aldrich was delinquent in his ***P^{2}3DI*** continuation training, as the first reading taken came up "Great Cookies--A+ Rating." As no cookies had been offered to the assembled inspectors, this reading was written off to operator error. A second reading yielded "Ran Out Of Cookies -- F- Rating." No further readings were taken pending retraining.

Moving inside, the ***Project Police*** were treated to high-salt snacks and high-fructose drinks. A video tape was shown of the perpetrators mixing a filler substance in precise quantities to a highly controlled "mayonnaise" consistency. This was spread between the ribs and closing skin of the horizontal tail to ensure no gaps in the final bonding process. The perpetrators at this point had still not settled their debate on the importance of wearing a respirator (the ***Project Police*** recommend using one). They were also seen having hallucinations (possibly from the HySol) that they were building an RV-8, manifested in their use of clecos to hold the two skins together in

alignment. HoJo was heard to complain about having to clean the epoxy out of the clecos, but was judged delirious. After all, none of us sheet metal airplane builders have had that problem with our clecos…

Visitors

Two visitors were present with us that I noticed. **Olaf Landsgaard** came to our meeting for the first time. Not bad, since we practically held it in his back yard. Olaf is known to the chapter as the new owner of the FBO facilities at Rosamond Skypark (L00). He has graciously agreed to let us hold the **Seventh Annual Scotty Horowitz Going Away Fly-In** at Rosamond again this year (16 May 1998). When Olaf is not checking out the airplanes at the airport, he has a legal practice in Rosamond.

Ryan Smith also attended his first Chapter 1000 meeting. Not too tough, since he lives a few doors down from the raid site. Ryan is a Test Pilot and USAF Captain working at TPS in the Flying Qualities branch. He received his flight test training at EPNER, the French Test Pilot School.

The secretary, **Miles Bowen** was AWOL to Florida, supposedly on some sort of official Air Force business, but there are those of us who suspect that he was just looking for an excuse to get out of writing the minutes. Thus, you get stuck reading my ramblings. His loss--it was a great meeting.

Minutes

No mention was made of the minutes of the last meeting, but they were printed in the newsletter. Unless someone raises a stink, the minutes are hereby unilaterally approved. So it is written; so it shall be done. Bob's Rules of Order are so much easier to work with.

Other Announcements

Two announcements of significance were made. **Gary Aldrich** announced that he had been contacted by Oshkosh (it was a BIG conference call…) looking for support from the chapter for a visit by the EAA B-17 "Aluminum Overcast." Unfortunately, the date they had in mind was the weekend of the Scotty Horowitz Going Away Fly-In. Since they weren't too excited about putting down a priceless B-17 on a 3600' x 50' runway, they are looking for another date. Those assembled made an initial agreement to support this visit. More details as they come.

Russ Erb announced that according to *Sport Aviation*, a Chapter Leadership Workshop would be held in Bakersfield on 7 February 1998. By the time you read this, it will have already happened. Look for a report elsewhere in this newsletter.

Flyin' Friends Feedin' Face Fer Fun

About 1845, victory was declared, and the gathered masses relocated themselves to the L00 messing facility (aka Golden Cantina). Good times were had by all, much good food was consumed, and many lies were swapped.

- Russ Erb

Chapter 49/1000 Annual EAA Awards Dinner

The subject banquet was held on schedule at the designated Antelope Valley Inn on 31 January 1998. Many lies were swapped, much good food consumed, and good times were had by all.

MC **Jack Huffman** started the evening off with a humorous Scottish prayer, followed by the assembled masses queuing up in the buffet line. Following dinner, Jack mentioned the presentation of the unofficial "Hate" awards to **Dick Monaghan** and **Bob Waldmiller**, who were guilty of showing such incredibly high workmanship standards on their projects that the rest of us just "hate" to look at them.

The formal awards presentations began with the Young Eagles awards. Once again, **Herb Carlson** was honored with the most Young Eagles flown, with 65 Young Eagles logged. Of course, Herb uses a four-place airplane, and thus has an advantage over the two-place airplane drivers. Hence, a new category was created, and **John Bush** was honored for the most Young Eagles flown in a two-place aircraft, with 15 Young Eagles logged. **Russ Erb** was honored as the outstanding ground volunteer for 1997, not really a surprise since the folks in Oshkosh had decided that earlier in the year.

The **Jim Osenga First Flight Award**, sponsored by EAA Chapter 49, was presented to three builders who had completed the first flight of their project in 1997: **Steve Irving** (T-18), **Rick Lapinsky** (RagWing Special), and **Paul Matthias** (Lancair 360).

The Chapter 49 **Spark Plug** award was presented to **Frank Roncelli**, Technical Counselor and all-around good guy. This award recognizes the chapter member who always seems to be around and makes things happen. The presentation was made by **Paul Rosales**, last year's recipient.

Ozzie Levi was finally presented with his award for First Place in the Spot Landing Contest at the **Sixth Annual Scotty Horowitz Going Away Fly-In** last May. It may take a while, but we finally get there…

Gary Aldrich re-presented **Russ Erb** with the McKillop Award for the ***Leading Edge***, which **Norm Howell** had previously picked up at Oshkosh in 1997 while Russ was at TPS covering for Norm. (*I've given up on any ideas of outdoing 1997 in 1998--we'll just keep doing what we like to do and enjoying it…*)

Webmeisters **Russ Erb** and **Paul Rosales** recounted the history of the first year of the chapter web sites, and announced the gratitude of the chapters to QNet for providing the web space on their servers. Representatives of QNet had been invited but were unable to attend.

Certificates of Service were presented to the Boards of Directors of each chapter.

The Main Event

Our speaker for the evening was **Carl Meade**, former astronaut and USAF test pilot (USAF TPS 80B). Carl is a veteran of three space flights and has logged over 712 hours in space. Carl served as a Mission Specialist on STS-38 in 1990, STS-50 in 1992, and STS-64 in 1994.

The STS-64 mission highlight occurred when Carl performed the first *untethered* spacewalk in 10 years. This mission was the centerpiece of his presentation.

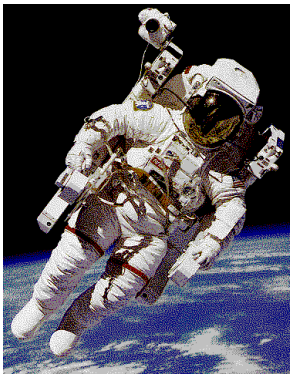
His slide presentation covered a typical Shuttle mission, which starts with the end of the previous mission. He covered how the Shuttle was refurbished and prepped for the next mission.

The Shuttle uses many of the facilities originally built for the Apollo/Saturn V program. These include the Vertical Assembly Building (the only building with an *interior* weather forecast), the crawler-transporter, and the launch pad. Since pilots like to drive stuff, and he had driven almost everything around the Kennedy Space Center, he hopped on the crawler-transporter one day while it was moving a Shuttle to the launch pad. His request to drive was flattly refused. Seems he was considered "unqualified."

One of the interesting problems that arose when modifying the Saturn V launch pad to the Shuttle was that the Solid Rocket Boosters (SRB) didn't fit over the flame hole. Since the Shuttle's center of gravity is located somewhere other than on the thrust line, if the SRBs' nozzles were allowed to gimbal at launch to give a straight vertical ascent, the resulting angle would throw the exhaust on the pad instead of down the hole. Ever notice how the Shuttle launches up and moving horizontally away from the Orbiter? That's because for the first 1.5 seconds, the vehicle is *unguided!* The guidance computer is ramped up from fully off at the moment of liftoff to fully controlling 1.5 seconds later. Betcha never heard that on the Discovery Channel!

The Shuttle clears the tower doing 100 knots vertically and continues to accelerate at 3 g's. You probably know the rest about how it gets to orbit. Upon reaching orbit, the crew has 1.5 hours to get the payload bay doors open and the radiators going or else they get an immediate return to earth.

Carl's test mission on the subject flight was to test a personal maneuvering unit designed to address a serious problem envisioned with the International Space Station. Astronauts will work outside the space station in space suits assembling the various pieces-parts. They will be attached to the station by a cumbersome system of tethers. Sounds simple enough, huh? Well, it would be, except that the tethers have to constantly be changed from one place to another. So? Imaging this--you're in your workshop working on your project. Only now you have a rope attached to the wall that you have to keep attached to your belt by a funny kind of carabiner. No problem? Put a piece of spring steel on the back of your arm that constantly tries to straighten your arm. Get one of those head braces so that you can't look down to see what you're doing. Did I mention that you're wearing hockey gloves and the temperature is well below zero? That's basically the conditions in the space suit. Given all of this, I suspect you might have



trouble with the tether occasionally or (*warning to Scotty Horowitz--don't read the rest of this sentence!*) the tether might break. When that happens, you'll be spinning about 30 degrees per second and moving *away* from the space station at about 2 ft/sec. How do you get back? Swim? I don't think so, Tim!

With the Shuttle, if this happens, somebody yells "Man Overboard" and the Shuttle pilot simply flies the Orbiter toward you, rejoins on you, and grabs you with the arm. Easy enough, you say. Space walks are actually ended when the Shuttle no longer has enough fuel to do that. However, I don't think you'll be chased down by a huge space station. So what to do?

The old Manned Maneuvering Unit (MMU) was designed for untethered space walks. It was dual-redundant everything, but big and mostly in the way for trying to do any work. Since NASA refused to pay what Martin-Marietta wanted for the Failure Modes Effects Analysis after the Challenger disaster, the MMUs have been permanently grounded.

So how do you give an astronaut a modicum of hope shouldst he go careening off into space? Carl was testing a new maneuvering unit for emergency use only. It fits under the life support backpack, and is powered by the incredibly complex propulsion system of nitrogen pressurized to 6000 psi. It has an attitude control system that will automatically stop any angular rates you may have, leaving you then to look around to find the space station before you get too far away to drive yourself back toward it. The system is not redundant at all, only having single systems for each function. But then again, it is only intended for emergency use. Carl and another astronaut tested the system, and it seems to work well.

Carl also talked about the pressure suit. It has an atmosphere of pure oxygen at a pressure of 3.5 psi and 0% humidity. While that seems low, consider that the partial pressure of oxygen at sea level is about 5 psi, and the space suit atmosphere is roughly equivalent to breathing at 10,000 feet, only without all that pesky nitrogen. More pressure and the space suit is a big balloon and you can't bend your arms. Less pressure and insufficient oxygen moves from the lungs into the blood stream. The intent is to keep the blood 98% oxygenated. At 96% you're in hurting status. Even so, after some strenuous work, astronauts can start to feel hypoxic and need to stop for a short rest.

To avoid decompression sickness (the bends), the astronauts are slowly denitrogenated by reducing the pressure in the Orbiter cabin after getting on-orbit for a day before any space walks. Astronauts then breathe pure oxygen for an hour prior to going in the airlock and further depressurizing.

Since space walks can last over 8 hours, provisions are made for food and water in the space suit. The food consists of essentially a Fruit Roll-Up that NASA pays $200 for because some dietician sprays Clorox on it. Water is fed through a straw. Carl said he had finished his fruit thing by the time he got out of the airlock. It was a long 8 hours after that.

The return to earth is started by firing the two OMS engines to take about 200 ft/sec off the Orbiters velocity somewhere over Australia. This is about 1 percent of the

total energy. After a 20 minute plasma show, the Orbiter is flying aerodynamically again. The flight control surfaces are blended with the reaction controls, with the reaction controls still operating until the Orbiter is subsonic. The flight control surfaces are powered by a system run on hydrazine (no wonder people on the ground don't just run up and open the door). Carl said they like to be able to see the runway by 8000 feet AGL (actually a lot before that), and high winds are bad because they could blow you far enough off course you couldn't make it to the runway in your airliner-sized glider capable of flying formation with a brick. The approach is flown at 300 KCAS, which keeps changing Mach number as the temperature warms up. After landing, 1/2 percent of the orbital energy goes into the drag chute, which is released at 60 knots so that it doesn't fall down and damage the nozzles. Another 1/2 percent of the orbital energy goes into the brakes. The other 98 percent? Aerodynamic drag and that plasma show.

Carl's presentation was very well received by all, and covered a lot of stuff you don't find in the books or on the TV shows. **President Aldrich** made sure we wouldn't miss the opportunity, and presented Carl with a Chapter 1000 patch prior to dinner.

Next year's banquet will probably be at the end of January 1999. You won't want to miss that one!

- Russ Erb

The Prez Sez…

Greetings El Niño survivors! (*such is how we were greeted at the subject event*) Please forgive the brevity of this month's President's column as your NLE is holding a large caliber weapon against my head for missing his deadline and I find it hard to concentrate. However, I will share with you a few thoughts on the Headquarters' Brainwashing Event (they called it a "leadership seminar") that most of your officers attended in Bakersfield last Saturday. In characteristic fashion, ***PPTAF*** troopers descended upon Chapter Executive Director **Bob Mackey** and EAA Executive VP **Bob Warner** by air and land assault. Chapter 1000 easily out-attended the other chapters with five representatives (including **Charleen Beam** of the Newport Beach sub-Det). Amid the panicked cries of "Here come the Zeros" from Chapter 1 lackeys (*including Jan "The Hammer" Johnson*), troopers **Aldrich**, **Gennuso**, **Erb**, **Bowen**, and **Beam** upheld ***PPTAF*** tradition by emptying the buffet table of all the High Fructose Snacks (HFS) the HQ boys had carelessly left about. The rest of the day was a HFS-driven blur, but we did learn a lot about creating visions and setting goals....something we (and the others in the room) tended to neglect at home. Numerous tips were shared on increasing membership and member involvement (watch out you slackers!) and I, at least, came to realize that many of the challenges that face our chapter are common to all. Overall, the experience provided a number of useful nuggets for the officers' cluebag and should result in even better service to the chapter membership. By the end of the day the combined will of the ***PPTAF*** had "turned" (in a Spy-vs-Spy sense) **Bob Mackey** to our cause, and in a secret ceremony in an isolated center of the room, he was inducted into the ***Project Police*** as our very own **Headquarters Operative/Mole**. Watch for subliminal communications in future *Sport Av* chapter news articles. Officers Erb, Gennuso, and myself capped the experience with a "raining pitchforks and hammer handles, black-as-the-inside-of-a-cow, Is that ICE on the wing?" return flight in the Skywagon. I'll let one of them describe the experience elsewhere (if they can get their hands to stop shaking). **Remember, this month's ~~meeting~~** (Oops, sorry Bob, I meant gathering...) **will be supplanted by the raid on Flabob**. Intelligence sources indicate that they may be aware of our plans so prepare yourselves for stiff resistance and long steak sandwich lines.

Check Six, and Fly Safe!

-Gary Aldrich

Chapter Leadership Conference ***Project Police Tactical Assault Force*** troopers **Gary Aldrich**, **Charleen Beam**, **George Gennuso**, **Miles Bowen**, and **Russ Erb** with newly recruited EAA Headquarters operatives **Bob Mackey** and **Bob Warner**.

Chapter 1000 Leaders Hang Out With Bob Mackey

As stated by our esteemed Prez, Chapter 1000 was the best represented at the Bakersfield (officially named) Chapter Leadership Workshop. For only being 9% of the chapters there, we had 18% of the people there. EAA Fiefdom 1, our good friends and favorite targets, came in second with 3 or 4 members.

The ***PPTAF*** with the rest of the attendees, including **Jan Johnson**, Dictator-For-Life, EAA Fiefdom 1, immediately behind George Gennuso.

The first part of the session consisted of the **Bob and Bob Show** passing on important info from headquarters. They first cleared up a common misconception. Don't confuse the EAA and the EAA Aviation Foundation. These are two separate but connected entities which do not share finances. They exist separately due to a long story having to do with lawyers and IRS tax laws. We pay dues to EAA. Contributions to the EAA Aviation Foundation are tax deductible. EAA only owns two aircraft: A Cessna 206 primarily used as a photo plane and a Bell Model 47 helicopter used during the annual convention. All of the other aircraft are owned by the EAA Aviation Foundation. Therefore, unlike written by a confused person in some other chapter's newsletter, your dues **DO NOT** finance Paul Poberezny's P-51. In fact, Paul doesn't even own that P-51.

Another major decision you'll read about in *Sport Aviation* soon: a new name for the annual convention. Did you know that the previous official name of the convention was (something like) "The Experimental Aircraft Association Annual Fly-In Convention and Sport Aviation Exposition"? Try putting that on a business card! (And you thought "The Xth Annual Scotty Horowitz Going Away and yada, yada, yada Fly-In" was long!) It's no wonder that everyone just refers to it as "Oshkosh." Well, the folks in Headquarters finally went to marketing school and figured out that we had a problem--no control over the name of the event. It seems you can't copyright the name of a city. An example of the problems we run into is that a vendor can sit outside the gates selling T-shirts emblazoned with "Oshkosh '98" and EAA gets absolutely none of the profits, and it's all legal. Hence after months of Dilbertized meetings and focus groups and all of that marketing stuff, they have finally named that big to-do in July-August "**EAA AirVenture Oshkosh**." Get used to it--it's going to be around for a long time. In case you're wondering, the same reasoning is behind the new EAA logo that's popping up in various forms everywhere.

The other significant topic that struck me was that we can request address labels from headquarters of all of the EAA members in our area. After sorting out which ones are already members, we can use the rest to send newsletters to (say, 10 per month) to invite them to join our chapter. Who knows? The reason they haven't joined may be as simple as they didn't know we exist.

EAA is recognizing the importance of the "Web" in our future. Apparently the National EAA Web Site is a major source of new members for EAA. Either this year's or next year's chapter directory will include e-mail addresses for non-Luddite chapters.

Bob and Bob referred to EAA as "The Best Kept Secret In Aviation." We need to get the word out.

As for the flight back, everything was very professionally done and I learned quite a bit about flying IFR in real IMC. **Gary** even demonstrated to us his Navy carrier landing technique in the Skywagon. Unfortunately, Fox Field didn't have the arresting cable rigged. You can ask him about that.

- Russ Erb

Young Eagles Update

Thanks to all for another successful Young Eagles Rally. This month's rally was held at the California City Municipal airport on January's Poker Run day, January 24th. This date made up for the rally planned for earlier in the month which was rained out. This time we couldn't have had better weather. It was a little chilly in the morning and the restaurant was not open for coffee, but visibility was a thousand miles and there wasn't a hint of wind which made for a great flying day. **Dave McAllister** and I were a little worried about arranging for a rally on a Poker Run day for fear that the pilots would be out picking up cards during the scheduled rally times. However, as you can see below, we had more than enough pilots to fly what turned out to be a very enthusiastic crowd. The majority of which were from a local scouting and youth group.

The Airport and some city council members turned out to be very helpful in arranging this event. The local Scoutmaster had some problems cutting through the city bureaucracy - specifically with getting the city council to agree to donate city owned avgas to our cause. Fortunately, the mayor and a councilman (and local dentist) of California City came to the rescue and took it upon themselves to donate the gas for this month's event. The airport employees were also very helpful by lending us tables from the (closed) airport restaurant, giving **Russ** a place to print certificates and pumping gas into our airplanes.

Dave and I are a little behind in putting out our Rally schedule for the rest of the year, but we will have it available at the March meeting (honest). There will be no Young Eagle Rallies in February due to weather and other planned flying events. If you are interested in flying or volunteering for ground help, please give Dave McAllister or myself a call at the numbers listed below. Also, if you know of any future Young Eagles, please have them call us!

The smiles on the faces of the kids is what makes it all worthwhile - My thanks to everybody who helped out.

Fly Safe!

Ground Crew:

Pre-Flight Participant Registration

Russ Erb **Victoria Rosales**
David McAllister

Post-Flight Certificate Presentations

Paul Rosales **Mike List**

Flight Crew

Pilots	***Equipment***	***#YE***
Bryan Duke	Vari-Eze	1
Tony Ginn	Thorp T-18	2
George Heddy III	C-172XP	3
Bob Hoey	BD-4	3
Norm Howell	Long-Eze	2

Jack Huffman	Cessna 177RG	5
Gretchen Lund	Mooney M20J	2
Ed McKinnon	Mooney 231	4
Con Oamek	F-33-A	6
Wen Painter	Cessna 182	5
Sheldon Simonovich	Mooney	3
Bob Waldmiller	Cherokee 140	2

Young Eagles Flown this Rally: 38
Young Eagles Flown this Year: 38
Young Eagles Overall Total: 1974

Upcoming Young Eagles Rallies:

We'll let you know when we decide…

Pilot Operations:
Dave Webber
Dave.Webber@dfrc.nasa.gov
948-9589

Ground Operations:
David McAllister
David.McAllister@dfrc.nasa.gov
256-4829

- Dave Webber

New Members

Chapter 1000 welcomed another two new members in January. The first was **Norm Devereux** who has raised his station in life with exalted dual-citizenship as a member of Chapter 1000 and Chapter 49. He had previously been a member of Chapter 49 for some time, so you may have already met him. He and his wife Lenell live down south in Agua Dulce. He flies a Mustang II (N44DX), which was named best Mustang II at Oshkosh in 1982. Norm has retired from the Los Angeles City Fire Department, and previously worked for Northrop from 1957 to 1959. He has been an A&P since 1955 and an pilot since 1967.

Bill McCune found the registration form on our Web Site, filled it out, and sent it in with a check for the appropriate amount. Bill lives in Tehachapi, so I'm not sure if he found out about our chapter from the web or from some other source. With an EAA number of 149277, he's been doing the EAA thing a lot longer than I have. He flies an American AA-5, and works as an engineer. He lists his aviation accomplishments as "too numerous to list."

From **David Munday**, introduced last month: "Yikes, finding my photo in my first issue was a bit like finding yourself on a wanted poster. I liked the test pilot school article especially. I'm shocked, shocked and amazed that Sport Aviation didn't print it. (Do I sound like Claude Raines?)"

Welcome to the chapter, **Norm** and **Bill**!

99's Poker Run

The Antelope Valley Ninety-Nines will be hosting their annual **St. Patrick's Day Poker Flight** on Sunday, 15 March 1998. Headquarters for the event is Rosamond Skypark (L00). The festivities will start at 0900, with stops at Fox, Mojave, Tehachapi Muni, Inyokern, and Cal City. Try to beat **Ozzie Levi** in the Spot Landing Contest when you get back to Rosamond. Please note that successful accomplishment of the run is not order-dependant. There will be a special prize for the PIC of each participating aircraft. Be back at L00 NLT 1300!

In the event of IMC, there will be a hangar party with games including paper airplane spot landing contests.

In any event, buy your Santa Maria BBQ tickets ($7) before 13 March 1998.

Call **Elle Coussens** at 805-256-4357 or 805-948-5960 for details.

Det 4 To Close

The word on the street is that **Doug "Opie" Dodson**, past President of EAA Chapter 1000, will be closing down Det 4 at Wright-Patterson Air Patch and returning to the home fields of Chapter 1000. Doug will be returning to TPS to serve as the Test Management Branch Chief. He replied to my request for verification of this move with the following e-mail:

"I was hoping you could help me with the where to live and where to put the Glasair this time. Did you get my other message? I will cut and paste it here just to make sure:

Hey Russ, give me a call a DSN 787-5625. I wonder if you can do me a favor and do a little asking around for a new home for my airplane. I will be coming out there most likely in June 98.

A permanent home is not required at this time. A place to store it for a few days (up to say, two months?) while I house hunt will help me too. The limiting factor is the wing which is one piece, just under 24 feet long. The rest is standard airplane stuff, most of it will be in boxes anyway.

For a permanent site, I will want at least a 3-car garage sized area where I can do the final completion stuff (30'x20' feet will do it, 30'x25' would be even better).

Hey! I don't expect you to be a real estate agent or anything, but you may have a friend who has a brother-in-law who... you get the idea. Let's talk!"

(*Hey Opie--I'm not ignoring you, it's just that usual excuse that TPS is a busy place. You probably remember that…this is the best way I had to get the word out.*)

Ellison TBI Unframed!

(*Our regular readers of **The Leading Edge** will remember past articles where **Brian Martinez**, Q-200 builder, suspected his Ellison Throttle Body Injector (TBI) was the reason his engine just wouldn't put out the power he expected. Turns out it wasn't the TBI at all--here's the rest of the story to set the record straight…*)

It is just as I told you before. There was never anything wrong with the Ellison TBI. The TBI masked a fuel header tank venting problem. It goes like this:

1. Brian builds a Q-200 which is damn near per plans except for changes documented and pioneered in the Quickie Builder's Association newsletter. Per plans

includes drilling a vent hole in the fuel filler cap on the side of the fuselage. Per plans includes a plastic connecting hose between the header tank and the vent tube which is bent forward, Pitot style, to gather dynamic pressure to pressurize the fuel tanks.

2. Brian installs a Ellison TBI because it is simpler, lighter, and doesn't have any ADs out against it...without ever running the Continental O-200 with a Marvel Carb for comparison (first masking mistake).

3. Brian runs the engine statically and runs taxi tests to just about takeoff without any engine problems showing up.

4. Brian goes flying one day and upon reaching flight speed and climbing out finds that there is "just no more power"...no more throttle and it won't indicate more than 120 mph.

5. The masking increases:

a. Someone thinks its the prop...Brian borrows a different prop and buys a different prop with no difference in performance.

b. Someone thinks its the engine air inlet...Brian rounds the inlet more with no change in performance.

c. Someone says that they don't trust the Ellison...Brian calls Ellison and they say that the air may be turbulent and the fuel pooling in the manifold spider. Ellison also asks whether there is enough pressure from the header tank to give good flow. Brian assures Ellison that the header tank is kept full. Brian looks at Ellison's hypothetical fuel system schematic and it looks like his. Brian modifies the airbox and builds a second slightly larger airbox as a comparison. Results are the same and Brian doesn't trust anything anymore.

6. **John Sharp** says install a manifold pressure gauge and think about installing the Marvel Carb.

a. John Sharp makes a quick check of the timing and says it looks fine, but finds a slight leak on the manifold pressure tap from the manifold spider.

b. Ground running comparisons of the Marvel versus the Ellison seem to show that the Ellison has less Manifold Pressure at full throttle. Brian assumes the Ellison has a problem and installs Marvel for flight.

7. Paul Fisher e-mails Brian about the problem and asks about the fuel system configuration. Paul says, "my airplane looks like this, what does your's look like?"

a. Brian's Q-200 has the vent hole in the filler cap, Paul's does not. The hole which is on the filler cap on the side of the fuselage under an access door will suck head pressure out of the fuel tanks.

b. Brian does some further checking after Paul's hints and discovers that the plastic tubing connecting his header vent tube to the total pressure vent is kinked and discolored from the fuel vapors. Brian replaces the vinyl tube with a polyflow tube.

8. Brian goes flying and performance is dramatically different. True air speed is 180 mph. Slower than some, but something to work from.

9. The light goes on in Brian's head. There was a venting problem.

a. The Ellison was dependent on good pressure from the fuel system, whether pump fed or gravity fed. The header tank could not pressurize correctly due to a blockage in the vent line caused by the kink and the loss of existing pressure due to the hole in the filler cap. This would account for the loss of power during climbout.

b. The Marvel ran better during static runs because it has a float bowl carb and is not as sensitive to fuel pressure when its not going fast. The Ellison doesn't have floats. You have to shove fuel into it, gravity or otherwise. However, without the vent fixes, the Marvel would have run badly also.

10. Brian tests the theory. He pulls the Marvel, reinstalls the Ellison and goes flying. The Ellison runs smoother, has better throttle response, and shows every bit of performance that he saw flying with the Marvel and a good venting system. Ellisons are a good thing.

The moral to this story is:

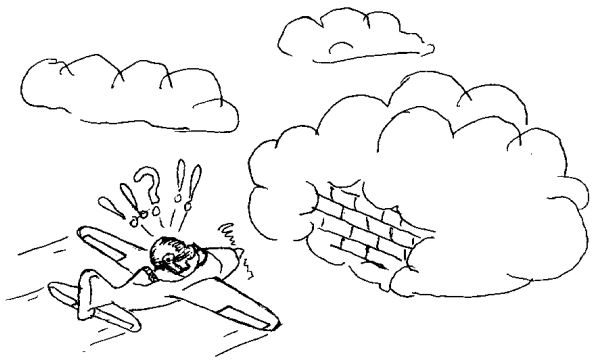
a. Listen very carefully when you talk to yourself.

b. Don't be fooled by masks.

- Brian Martinez

(*Fuel vent problems are not an isolated incident--Scott Horowitz had a similar yet different problem in his Tri-Q-200, which turned out to be his fuel vent system acting as a siphon and starving the engine for fuel pressure. The fuel vent system is an important part of the fuel system--don't blow it off!*)

To G or Not To G - or How To Avoid Breaking Your Airplane



When people ask how strong a particular airplane is, the answer is usually given in "G's". When they ask me this question I am a bit hesitant in response because I know that this is not a totally true, and a somewhat misleading, answer. The "G" answer is only proper for the specific load assumption that went into the original calculations. Also, in spite of the fancy diagrams, you do not fly around with your eye on the "G" meter saying "oops, that's enough - back off". This may be OK for the lads and lasses bounding about the aerobatic "box", but that is not very applicable to the way the average pilot treats the airplane.

Those of you that may know me, are aware that I am never satisfied with the "pat" established view of engineering problems. "Just because that is the way it has always been done" is like waving the red cape at the proverbial bull. My approach is to step back and ask something like "What is it that is likely to break an

airplane"? Unless you hit something solid (sorry that is not a design point) the culprit has to be aerodynamic air loads, generally on one of the lifting surfaces. The maximum force that these surfaces can react on the structure are limited by the maximum lift coefficient and the local dynamic pressure (the technical term for this pressure is "Q" just to confuse you ordinary people). Fortunately, almost every airplane has a handy little meter that is measuring this "Q" - it's called an airspeed indicator.

If your airplane designer did his job right, the critical level of this dynamic pressure is labeled "Max. Maneuvering Speed." Strange as it may seem, this is not really a speed at all, but a pressure level that corresponds to an INDICATED air speed. No corrections for temperature or altitude - the critical thing is indicated air speed which is an established, directly measured pressure level. The maximum maneuvering speed is generally defined as that value where you can make any input with the controls without fear of damaging the structural integrity of the airplane. It also is described as the operating point where you can run into any PROBABLE level of gust without structural distress (bonafide funnel clouds are also not a design point - any force that can drive a straw through a tree trunk is not some place where you can survive in your airplane).

Now the "G" number that would be indicated (if you had the meter) can be over a wide range of values depending on the loading conditions of your plane when this gust is encountered. For most systems the stated design value corresponds to the expected "G" levels if you encounter these conditions at maximum gross weight. If you are lightly loaded the indicated "G" level will be higher (and the seat of your pants would be given a bigger whack), but the structural stress is the same. conversely, if you are loaded over gross weight - do you break? NO, the stresses are the same, but the perceived "G" forces are less. The limiting indicated air speed remains the same.

There is a rough correlation between "G" levels and maximum maneuvering speed, and it points out why those slippery, high efficiency designs have to be made extra stout. Everyone wants one of those airplanes that will land at a brisk walk, and cruise at over 200 mph. Well that is a real tough call because a basic 4G type structure can be over stressed if it flies any speed over twice stalling speed. For example - 50 is a nice landing speed, but twice that for potential 4G forces is only 100 mph. The fabled "unbreakable" 9G design only takes you to 150, and if you intend to hit big gusts while cruising at 200 you better be ready for a 16G hit. The light wing loading for those slow stall speeds will really loosen your teeth in rough air, which is one reason that effective flap systems are so popular for high performance planes.

That is one problem with aerodynamically "clean" airplanes. Another alligator waiting to snap up the unwary pilot is the rapid speed buildup if you fall out of a botched aerobatic maneuver. The speed builds up and the fast approaching hard ground pumps the adrenalin into the efforts to keep the blue side up and the green side down. This has often folded the wing halves up in a low lift "prayer like" position as you plummet to earth.

The more optimistic side to this is that the key word in max. maneuvering speed is INDICATED. This is another good reason to fly fairly high. At altitude the actual true airspeed is quite a bit higher than indicated airspeed, and you can cover quite a bit of ground without venturing too far above the magic indicated number in regions of questionable roughness. The vertical speed of the gust that might break your airplane has to be high enough that the resultant angle of attack on your wing approaches the 15 or so degrees of stall angle. The likelihood of the first gust you encounter at the edge of "turbulence" being this high, is very small, and you should have sufficient time after your teeth have been slammed together, to drop the speed to a safe (but not necessarily comfortable) level.

- Vance W. Jaqua
Jaqua Systems, Aerospace Engineering Consultants
EAA Chap 1000 Det 8, Camarillo CA
(*Vance recently upgraded himself from honorary to full member, and as such became eligible for Det status*)

Chapter Library Update

Chapter 1000 extends its thanks to **Frank Roncelli**, for searching through his stash of back issues of *Sport Aviation* and filling in a lot of the gaps in the 1970s section of the Chapter 1000 Library.

We have a virtually complete set of *Sport Aviation* from about 1970 to 1990 in the chapter library. We also have a few selected issues prior to 1970. These are available for the members to check out as desired. If you need something after 1990, see **Russ Erb**, who's personal collection is complete from 1990 on.

The chapter library is located in the Test Pilot School library. It is open during normal duty hours. If you can't make it by then, contact Russ and he'll check it out for you or meet you there and open the door.

In a future newsletter we plan to publish a complete list of what is available in the library.

Buck Rivetz' Web Page Review

Project Police Det <DATAMASKED>

"We're here to help!"

Target for the Month:

Exotic Aircraft Company
URL: http://www.barnstormers.com
Date of Review: 3-4 Feb 98

Here we are again for another great and informative column for the computer literate. Even if you're not computer literate, it's a good place to start. I didn't know if I was going to make it this month, with so many contributions to the Chapter 1000 Newsletter, it's tough to get any space nowadays.

This month's target is a small aircraft restoration and maintenance facility situated locally (at least geographically-in the big scheme) at the Southwest corner of San Diego's Gillespie Field. For those outside the southwest, just try the above URL and enjoy the visit.

Let's take a look, shall we….

The first thing a visitor sees is a background GIF that is supposed to look like a WW2 Quonset hut. Works well on the computer and does not seem to take up a lot of down load time. As with any site, there's a menu on the first page. Not much else but the menu. From there you can take off (pretty bad pun, huh?) to a Welcome screen, the obligatory "What's New Around the Hangar?", the "Restoration Shop", "What's Going on in the Hangar", the "Marketplace", "Aviation Collectibles", a local event having something to do with cheesecake, and a Guestbook. A recent addition is a page on aircraft (generally WW2 warbirds) wreck sites.

The Restoration Shop is a pretty interesting couple of pages in that there is a small "How To.." section. The only "how to" item was a sequence on how to paint the old 1930's style US National Insignia (Blue ball with white star and red meatball). It also shows the current projects in work (Boeing Stearman)

The "Real Time Hangar" is envisioned to give a timed video shot of the hangar interior as work is being performed. Unfortunately, this was INOP at this review time.

Marketplace is the place to check out if you're in the market for a part, aircraft, or just need to browse. In these pages, you could find aviation collectibles, a small aviation fine art gallery, commercial and corporate aircraft, engines, experimental aircraft, helicopters, sport aircraft (antiques and general aviation), salvage yard "treasures" (static display items), a surplus store (more static display items), utility aircraft, and finally, warbirds. All the aircraft listings contain aircraft for sale, projects, and notices from individuals looking for a specific aircraft. Although not overly excessive, there is a plenty here to keep your interest.

Under the Aviation Collectibles, you can find any antique items or even leave a note that you are looking for an item. If you're in the market for the business end of an F-4, this is the place. How about the P-40 shell used in the movie "1941"? Other cool items of interest include ejection seats ('never know what Vern's Kiwi needs next), surplus instruments, old wood props, and anything else you might desire.

Finally, if you have a business you would like to promote, Exotic Aircraft will provide advertising and links to your web page. Only two businesses there at this time, but its a start.

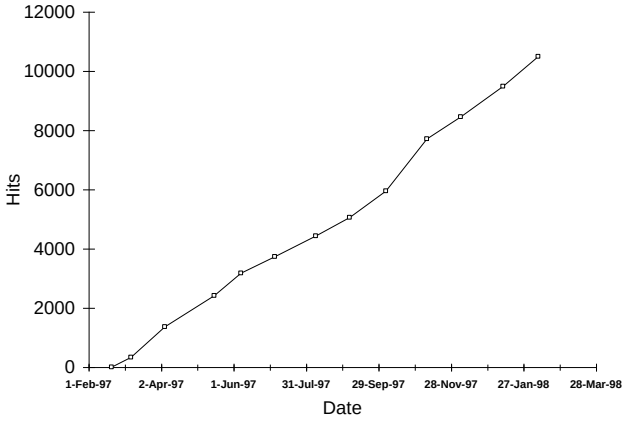
Overall, this is a great site and worthy of the trip to the cyberport (is this a new term?!) Although some pages are listed as under construction, there's some good content for the browser and Chapter member who just wants to look around an old hangar.

APPROVED!

- Buck Rivetz

Web Site Update

10K! We broke 10K in just under one year! As of 8 February 1998, we have **10492** hits on our Web Site. The hit rate is up again to 35 hits/day. See the graph of the activity below.



Usage History on http://www.eaa1000.av.org

Not a whole lot new on the ol' web site this month, as I've been working on the next update of WinYEFC and another article for *Sport Aviation.* I have added a few more pictures of **Jim Piavis'** Boredom Fighter, **Bill Grahn's** projects, and northern members **Norm Dewitt** and **Ed Dutreaux** aircraft.

Jim Piavis has launched his unofficial Boredom Fighter web site. You can get there from the Homebuilt Aircraft Builder-Sponsored Web Sites section of the Aviation Links page.

Thanks to the worldwide reach of the web, we finally have an answer to **John Miltner's** question about his grandfather's airplane (Now if we could only find John to let him know--anybody know where he went?): "John Miltner's grandfather's homebuilt appears to be a Heath Parasol, a popular kit plane in the late 1920's. It used a converted Henderson 4-cylinder inline motorcycle engine, considered extremely reliable at the time. Dave Tharp, Virtual Museum Curator, Motorcycle Online Magazine, tharp@motorcycle.com."

Here are some e-mails received by your webmeister:

"Thank you for YE Certificate information. You at 1000 do a great newsletter. Wes Nelson Chap 376"

"I am sure you guys have heard it before, but GREAT WEB SITE! I have a question for you do you think some of the guys building a BD-5 or similar plan would be interested in a very solid air cooled engine in the 80-100 hp range. I am a mechanical engineer is the San Jose area that worked on a project for this aircraft some time ago. The builder gave up on the plane before we finished. (he was a doctor that lost a lawsuit) But I had done considerable work on the engine project. the over all

weight was 180 lbs. but that could even be reduced. output shaft max RPMS about 4500. The engine was aircooled inline four configuration with a excellent rep for reliability in the original config. Love to talk about this with someone from EAA1000 if there is any interest. Bill Jepson WRJJRS@aol.com"

"It's hard to stay out of your wonderful site; I just pointed out some of the intricacies of it, especially your index of technical articles in the mags, to our chapter members in Asheville, NC.

It's nice to have something like you have to be proud of, but ain't it sad that you have to publish a disclaimer at the bottom of the page! Being a lawyer I think sometimes the nuts of the human race, as well as of the legal profession, will drive us to chaos. It's reminds me of the cases in which those who receive help from Good Samaritans turn on them and sue them. Here you are bestowing your largesse on others and having to suggest that they not sue you for it. Larry Smith, Asheville, NC, EAA30504"

- Russ Erb, Webmeister

Chapter 1000 Calendar

Feb 17: No EAA Chapter 1000 Monthly Meeting

Feb 21-22: EAA Chapter 1 Open House, Flabob International Airport, Riverside CA. (909) 686-1318

Feb 21: ***Operation Rubidoux Sundown VI***. (805) 258-6335

Feb 28: Electrical Workshop, 9:00 a.m. Rosamond Skypark (L00). (760) 769-4336

Mar 4: EAA Chapter 49 Monthly Meeting, 7:30 p.m., Sunnydale School. 1233 S. Ave. J-8, Lancaster, CA. (805) 948-0646

Mar 10: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., Edwards AFB. Test Pilot School, MOL Room (805) 490-1476

Mar 15: Antelope Valley 99's St. Patrick's Day Poker Flight, 9:00 a.m., Rosamond Skypark (L00). (805) 256-4357 or (805) 948-5960

Mar 17: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (805) 490-1476

May 16: Seventh 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

Instruments For Sale: (Harry Richardson 805-256-8355)

TURN AND BANK, R. C. Allen, electric, 3-1/8 inch Model 28P61-D2S, $300.

TACHOMETER, (two), Grayson Heat Control Limited, electric, Type E-13, single engine, $100 each with

TACHOMETER GENERATOR, (two), Chicago Flexible Shaft Co. Series AN5530, $100 each.

ENCODING ALTIMETER, Aero Mechanism, Model 8104B-20, $600.

FUEL GAUGE, Garwin Inc., 3-3/8 inch, dual, $75.

RMI, Aviation Instrument Manufacturing, slaved D.G., $1000.

REMOTE COMPASS, Aircraft Instrument and Development, with transmitter, $350.

RATE OF CLIMB, Bendix, AN5825-1, 0 to 6,000 ft/min, 3-3/8 inch, $200.

TEMPERATURE GAUGE, U.S. Thermometer, probe type, $20.

TRUE AIRSPEED INDICATOR, Aero Marine Instrument, mph and knots, $150.

OIL TEMP/OIL PRESSURE/FUEL PRESSURE, General Electric, $150.

OIL PRESSURE/CYLINDER HEAD TEMP/OIL TEMP, Garwin/Porter-Strait, $150

CYLINDER HEAD TEMP, Hickok, U.S. Surplus, $35.

TURN COORDINATOR, Mitchell, pictorial turn and bank, 2 minute turn, TSO C3A Type II, needs overhaul, $35.

ATTITUDE INDICATOR, Bendix, Type J-8, 3-3/8 inch, $650

ATTITUDE INDICATOR, Bendix, electric, Type 1978128-1, with

GYRO POWER SUPPLY, Hopkins, Type 0155, input 14VDC, output 115VAC, 3 Phase, 400 Hertz, $750.

To join Chapter 1000, send your name, address, EAA number, and $15 dues to: EAA Chapter 1000 Treasurer, Mike Meyer, 6809 Spaatz Dr, Edwards CA 93523. Membership in National EAA ($35, 1-800-843-3612) is required.

Contact our officers by e-mail:
Gary Aldrich: gary_aldrich@pobox.com
George Gennuso: pulsar1@qnet.com
Miles Bowen: miles_bowen@ple.af.mil
Mike Meyer: aerosong@ptw.com

Inputs for the newsletter or any comments can be sent to Russ Erb, 805-258-6335, 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!*

FINAL WARNING!

Pay up your dues ($15) NOW! Next month we'll print the *Dues Delinquents* list! Don't suffer the embarrassment of being on it!

THE LEADING EDGE
MUROC EAA CHAPTER 1000 NEWSLETTER
C/O Russ Erb
6708 Doolittle Dr
Edwards CA 93523-2106
http://www.eaa1000.av.org

ADDRESS CORRECTION REQUESTED

THIS MONTH'S HIGHLIGHTS:
NO REGULAR MEETING! GO TO FLABOB!
UPCOMING ELECTRICAL WORKSHOP
BANQUET PROGRAM REPORT
ALL ABOUT MANEUVER SPEED

DUES ($15) DUE! PAY UP!