



THE LEADING EDGE

NEWSLETTER OF MUROC EAA CHAPTER 1000

Voted to Top Ten Newsletters, 1997 McKillop Award Competition

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June 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.

This Month's Meeting:



All About ARIA
Speaker: Bill Grahn
Tuesday, 16 June 1998
1700 hrs (5:00 PM Civilian Time)
USAF Test Pilot School Auditorium
Edwards AFB, CA

Well sports fans, this month we have a special treat in store for you, our very own Chapter 1000 *Project Policeman* and all around good guy **Bill Grahn** will be presenting. Bill will give us a short presentation (with honest to goodness overhead projected professional slides!!) on the ARIA aircraft. The acronym stands for Advanced Range Instrumentation Aircraft. This is a fleet of four aircraft (C-18's) that were extensively modified in the 1960's to support the Apollo space program as flying telemetry stations. Their mission was to gather telemetry data from the spacecraft in areas where they did not have ground tracking stations. They have been used through the years on many other projects including ballistic and cruise missiles, and probably some that Bill can't tell us about under penalty of death. Once Bill has filled our puny little heads with the interesting technical data, we will get to tour the real thing. Bill has arranged to have an ARIA aircraft parked out behind the TPS and will give us a chance to actually go on board and look it over. It promises to be a fun and informative evening, so don't

miss this once in a life time event (how often do you think an opportunity like this comes along? Just asking...).

- George Gennuso

Scotty Horowitz Returns To Rosamond; Thousands Flock To Send Him Away Again!

Okay, maybe not thousands. Would you believe... 115? I never know whether to trust reports from the *Project Police Really Incredibly Large Office of Overstated Exaggerations*. Anyway, on with the story...

On 16 May 1998, the *Project Police* of Chapter 1000 opened the doors of their hospitality suite once again to welcome both their own and EAAers everywhere in the spirit of friendship and with promises of not demanding the usual chocolate chip cookie (C³) tribute. EAAers from the world over (or at least near by) flocked to the field to join in the festivities and try their hand at the spot landing contest. These are the chronicles of events.

Setting Up

Like most fly-ins, the heavy duty action started the night before the airplanes started arriving. **Jack Roth** had delivered tables, chairs, and the now famous Chapter Booth to the airport, but was unable to stick around to set it up. **Russ Erb** arrived with the grill in tow. As an original member of the *Booth Construction Battalion*, he tried to dig up sufficient memory of how the booth was assembled to guide **George Heddy**, **Sten Martinez**, and **Arlene Martinez** through the booth setup procedure. It was at this time that we discovered one of the hazards of having a Chapter Booth designed by a Master Engineer and assembled by a team of homebuilders to exacting tolerances: Thanks to El Niño (a.k.a. "Mr. Ninny" around here), the additional wetness in the ambient atmosphere had caused the wood to swell in excess of its original assembled dimensions. Stated alternatively, it was difficult getting some of the parts to fit. With EAA ingenuity and the help of a persuader (i.e. hammer) we managed to get it together.

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Unfortunately, there was a fly in the ointment. However, since it was getting dark, we didn't need the ointment. What we did need was tables! We had enough for serving and plenty of chairs, but nowhere to set your plate for eating...Hmmm, not a good way to impress the incoming hordes with the omnipotence of the *Project Police*....

Acting semi-unilaterally, **Russ Erb** and **George Gennuso** hatched a recovery plan. They met at the Skypark early the next morning, unloaded the Pedal Pitts, and headed back toward the base. Eight 8-foot and four 6-foot tables were secured from the Outdoor Rec Center and quickly spirited back to the Fly-In site, much to the relief of the now assembled **Arlene Martinez**, **Jack Roth**, and **Glenna** and **Charlie Wagner**. The CAP cadets had already set up the chairs as though someone was giving a presentation. The arrangement was quickly rearranged to accept the tables.

Shortly thereafter, the guest of honor, **Scott "Doc" Horowitz** arrived in the back of his astronaut limousine, cleverly disguised as chauffeur **Norm Howell's** SUV. Doc arrived to the sound of Norm commanding "Ruffles and Flourishes for the arriving Astronaut!" **Russ Erb**, being one of the few people who may have understood the order, obliged with the obligatory "Da-di-di-da-da-daaaah." Check with an authority on military music to find out how that really goes.



Doug "Opie" Dodson, former Chapter 1000 Prezident, commandeered some of us to assist him in unloading his Glasair II FT and **Gail Nusz's** Midget Mustang out of a Ryder truck into Gail's hangar. Doug was out from Det 4 on a house-hunting trip in preparation for the closing of Det 4 next month and his return to the staff of the USAF Test Pilot School. With the assembled group of pilots, flight test engineers, and astronaut we managed to get the aircraft out of the truck with no noticeable damage.

The Main Event

And the masses came, ate, and were filled. Once again this year, **Glenna Wagner** did what she does better than any of us. She planned and provisioned a wonderful feast of Polish Sausage dogs with a more than complete smorgasbord of side dishes. Drinks of all types were readily available. Complementing Glenna's work were grill-meisters **George Gennuso** and **Jack Roth**.

Complimenting Glenna's work was everybody present. A critical test dog, selected at random, was found to be outstanding by the **Chapter Information Czar**. Glenna and her RV-6A building husband **Charlie** and daughter **Lisa** are moving north to Fallon NV. When Charlie finally finishes the airplane, he sez that they will be back for chapter events. **We just hope Glenna leaves us a good clue-bag on how to do this before we do it again next year!**

Chapter 1000 also thanks **Olaf Landsgaard** for the use of the main FBO hangar at Rosamond Skypark for our little bash.



This photo also documents compliance with the unwritten fly-in rules. If I told you what they were here, then they wouldn't be unwritten anymore. Suffice it to say that a U.S. Flag and an EAA banner were prominently displayed.



A Rosamond newspaper reporter was so excited about the prospects of a fly-in in his own town hosted by the Internet- and EAA-wide famous Chapter 1000 that he came out to cover the excitement. In his pursuit of the truth about the *Project Police*, he was able to do something that we haven't been able to do for years...namely, get the assembled members of Chapter 1000 to actually assemble long enough to have their photo taken. Take note, **Bob Mackey!** If anyone saw the resulting newspaper article, please make it available to the *Project Police Security Squad* so we can see which of our non-secrets were released.

Conspicuous in his absence was *Project Police Kommandant* and Chapter 1000 Prezident **Gary Aldrich**. While on record as saying he wanted to be there, we were out-prioritized by something about he had to be in Northern California for his daughter's graduation from college. The *Project Police* staff decided to let it slide this time, but recommended that to make up for it he should bring his daughter and the rest of his family to the *Eighth Annual Scotty Horowitz Going Away Fly-In* in 1999.

Fly-In Awards



Chapter 1000 member **Jenna Ware** of Oxnard CA was the winner of the 1998 Spot Landing Contest. She was presented with her plaque (ADA approved) by Newsletter Editor and Webmeister **Russ Erb**. Russ was chosen for this esteemed duty because, well, he was available. Jenna was also presented with a bottle of *Racer's Edge* aircraft polish, courtesy of Chapter 1000 member **Larry Sweetser**.

Jenna joins an esteemed group of aeronauts known for superb aviating with regard to ground references. Previous winners include **Bill Crawford** (1994), **Steve Irving** (1996), and **Ozzie Levi** (1997).



And she even did it without the aid of flaps! This is Jenna's Cessna 120, emblazoned on the side with "Jenna's Dream." This is a wonderful little airplane, with an interior that looks better than we suspect it did rolling out of the door in Wichita. Our favorite part of the panel was a placard that reminded the pilot "Don't Do Anything Dumb!"



Winners of the People's Choice award were Chapter 49 members **Rick and Don Lapinsky** for their "Ragwing Special." This aircraft was selected by the highly scientific, complex, and All-American method of letting the assembled masses vote. We decided to grant them the award, even though not one person identified the aircraft by its proper name. Most were some variation of "Pitts Ultralite." The plaque was presented by the namesake of our annual event, **Scott "Doc" Horowitz**. Rick and Don were also presented with a bottle of *Racer's Edge* aircraft polish.



Previous winners of the People's Choice Award are **Ray Modert** (Lancair, 1994), and **Scott Liefeld** (Pietenpol Aircamper, 1995).



The *Project Police* suspect that this piece of tail art on the Ragwing Special may have had something to do with its sweep in the polls.

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Scott Horowitz Meets the People

Scott "Doc" Horowitz, NASA Astronaut, Hubble Space Telescope Mechanic, and Charter Member of EAA Chapter 1000, was able to arrange his schedule this year to appear at his namesake fly-in. Where else but Chapter 1000 would somebody make a big enough impression to be invited back each year just to be sent away again? Scott had arrived the day prior in his NASA Aero Club T-38, which he landed at Edwards after a fly-by of Rosamond Skypark the previous day. This was Scott's 4th fly-in that he actually made it to, having also attended in 1992 (the original going away fly-in), 1995, and 1996.



Here Scott addresses the assembled masses, telling us about how our chapter newsletter circulates around the Astronaut Office, and usually garners him "extra attention" and ribbing whenever his name shows up in it.

Of course, as always, we had such a great time that we're going to do it all over again next year!

The Final Tally

In the final analysis, we did reasonably well this year, having sold about 115 lunches. While we had hoped to sell about twice that many, Mr. Ninny had other ideas. Although the weather here in the Antelope Valley was quite acceptable for a fly-in, all of the approaches from "Down Below" (*not to be confused with "Down Under," Graham*) and Bakersfield were blocked by excessive cumulo-puffys. As such, the threatened large invasion fleet from Chapter 1 was foiled, with the only Chapter 1 members making it through included three who slid in under the radar in their ground assault vehicle and one who arrived by air too late to have much effect. **Don** and **Don** from Chapter 7 made it in, and a small group of flour bombers (including **John Burchak**) from Apple Valley. The expected masses from the Bakersfield Bunch and Fresno were totally defeated by the weather in their attempts to cash in on the fun. This would have been great, except that the plan this time was to welcome everyone IN! Oh, well. Maybe next year...

Even though we only had half the expected turnout, **Prezident Aldrich** reports we still got away with a profit of **\$350!** Can't shake a towbar at that! Much of the *credit* again goes to Glenna, who had cleverly planned another event shortly after ours with the same menu! As a result, she was able to buy back much of the unused foodstuffs on that other event's account.

We're hoping that by next year, Mr. Ninny will have had his fun and our High Desert weather will be back to its

usual clear and warm self. Mark your calendars with the tentative date of **15 May 1999** for the ***Eighth Annual Scotty Horowitz Going Away Fly-In!***

See more details and more pictures in full color in the report on the Chapter Web Site!

- **Erbman**

Last Month's Non-Meeting

What're you reading this for? We told you last month that the **Seventh Annual Scotty Horowitz Going-Away Fly-In** qualified as a Chapter Gathering according to **Bob Mackey's Rules of Chapter Events** (*Bob seems to think the word "meeting" has a negative connotation*). Secretary Miles will be back here next month with another exciting fabrication of events that may have happened.

The Prez Sez...

Hard to believe another month has passed and the shadow of the NLE falls on my shoulder like one of Mr. Dickens' ghosts. The **Seventh Annual Scotty Horowitz Going Away Fly-In** is barely receding in the rear-view mirror and we are already looking forward to our next chapter adventure! Since my impressions from the Rosamond gaggle are all second-hand I'll let you read the eyewitness accounts elsewhere in the newsletter. However, let me add my thanks to the great folks who made it all happen: **Glenna Wagner**, who pulled it all together (*you did train someone for next year, right?*); **Russ Erb**, who recovered a near fatal error on my part by renting tables and chairs; **George Gennuso**, on-scene **PPTAF** commander; **Jack Roth**, booth-meister and all-round transportation guru; and all the rest who gave of themselves to ensure a good time was had by all. Of special note is the ultimate contribution of chapter member, supporter, and lawyer **Olaf Landsgaard** who donated that trivial item--the airport! Everyone who enjoyed themselves on Saturday needs to drop by many times and support Olaf's fuel concession...tell your friends as well. As El Niño fades into our memory we are looking forward to a summer filled with flying (or building) and Young Eagles. A glance at the events schedule in our newsletter, on the web site, or (gasp!) in other publications will reveal a veritable cornucopia of flying fun. I've set my personal sights on the Father's Day fly-in and airshow at Camarillo (CMA). I think we owe it to Chapter 723 to support them and have some fun as well. It would be an excellent target for a Chapter 1000 fly-out. See you there?

Fly Safe and Check Six!

- **Gary Aldrich**

New Members

The power of a concentrated gaggle of *Project Police* officers is irresistible to many folks. Two new members were signed up at the **Seventh Annual Scotty Horowitz Going Away Fly-In**. **Bernie Bakken**, yet another member of EAA Chapter 1, conceded defeat before he even arrived. He showed up at the Fly-In with checkbook in hand and a New Member Information Sheet already filled out. Bernie lives in Tujunga CA, and spends the time he's not working on his KR-2 as a Construction Manager at NASA's Jet Propulsion Laboratory (JPL).

Ryan Smith, USAF Test Pilot, has been threatening to join the *Project Police* for some time now. He was last seen with the *Project Police* during their stunningly successful raid of **HoJo's Secret Aircraft Factory** in January of this year. During the Fly-In, your NLE spotted him and his lovely wife **Kelli** and presented him with a New Member Information Sheet to fill out. This plan worked, as he filled it out and coughed up a sufficient tribute to the *Project Police* to cover dues for a year. Ryan lives in Rosamond just down the street from HoJo's Secret Aircraft Factory. He lists his aircraft as "Looking," a type that the *Project Police* are not familiar with, but are willing to investigate. Ryan recently completed training at EPNER, the French Test Pilot School. He now works on the staff at TPS with **Russ Erb, Gary Aldrich, Howard Judd**, and **Al Norman** (who recently re-upped after an unexplained year's hiatus). We have already given him his first assignment, namely to get **Mike Masucci** (code name "Sooch") to quit just threatening to join and actually do it!

A couple of months ago, your board of directors unanimously agreed to add **Olaf Landsgaard** to our esteemed list of Honorary Members, in recognition of his service to aviation as the **Rosamond Skypark FBO**. Olaf has graciously made the FBO hangar available to Chapter 1000 for both the Sixth and Seventh Annual Scotty Horowitz Going Away Fly-In and also Charlie Wagner's Electrical Workshop. He has also made several other improvements to the FBO area, including a model installation of avgas on the field for the first time since 1993. Olaf has soloed, but has yet to complete his pilot's license. When Olaf isn't hanging around the airport, he runs a legal practice in Rosamond.



Young Eagles Update

A rally was held on 16 May 1998 at Fox Field as the big Fly-In was getting going at Rosamond. We'd tell you more about it, but **Dave and Dave (McAllister and Weber)** haven't bothered to submit the report yet. Maybe next month...

Chris Reeder Moves To Texas; Cited With Gross Buffoonery!

Casual discussions by the *Project Police* with **Larry and Jane Barrett**, owners and operators of **Mountain Valley Airport** in Tehachapi, revealed that *Project Police Officer Chris Reeder* finally made it successfully to Sheppard AFB in time to start USAF Undergraduate Pilot Training. We still have not heard from him with his new mailing address (so he's not seeing this), possibly because he is not willing to admit his **Gross Buffoonery** to the *Project Police Board of Inquiry*.

You may recall that Chris was madly working all hours of the night at Mountain Valley Airport to complete the recover and upgrade to his Pitts Special in time to fly it to Texas instead of trucking it. The Pitts is equipped with a main fuel tank in the fuselage and a smaller reserve fuel tank in the upper wing. As Chris was winging his way toward Texas, he seemed to be running out of fuel far earlier than he expected. Eventual inspection of the aircraft revealed that in the rush to get it out the door, Chris had labeled the fuel selector **BACKWARDS**, with main being reserve and reserve being main! Since the reserve tank is smaller than the main tank, he was experiencing fuel starvation far earlier than he expected.

DON'T LET THIS HAPPEN TO YOU!

Corrosion Control: Where Do You Find Corrosion?

This article is repeating the very obvious and is sophomoric for experienced persons. But, I have been amazed how some persons have been convinced that there is no corrosion, say, on/in a wing.

I have heard of a "salesman" opening an inspection plate and showing that the skin inside was nice and shiny. The skin that you can see is not what corrodes. **It is the skin that you cannot see that corrodes.** It is where the ribs, stringers, or spars are covering the skin (the faying surfaces).

Have the "salesman" take out some rivets at the trailing edge of the wing near the wing root so that the faying metals can be separated enough to look at the faying surfaces. That is where the corrosion will be.

The situation in the previous paragraph is why I am so adamant about trying to control corrosion on any airplane my grandchildren (and their mother) will fly. (I don't have any control over what their father flies.) *(All right, already! I've got the alodine barrels, I'll get the stuff when we get back in July!!)*

AC 43-13 (para 252 b. (1)) also warns of corrosion in the tail of a steel tube fuselage. I have heard "war" stories of persons tapping the tubes near the tail skid (wheel to you modern folk) with a plastic hammer (so as not to hurt the pretty fabric) and to have the tubes collapse in a pile of rust.

For a tricycle gear the dangerous corrosion on the steel tube framework is at the low spot when parked. This could be near or at the main gear for a configuration such as the old Piper Tri-Pacer.

On a sheet metal fuselage such as a Cessna 172 look for corrosion in the middle of the fuselage at the low point when it is parked. The most obvious (but hidden) place is the faying surface between the bulkhead (or intercostal) and the belly skin.

Look for drain holes that might be plugged with grass or dirt. Look around the drain holes on the inside for signs of water puddling. Look for corrosion behind various drains, especially relief tubes (*assuming the tube hasn't pulled out--Norm!*).

Remove wing attach bolts (or any other bolts) and check for rust. Check around the holes they came out of for rust or powdery residue. Check the bushings for corrosion and cracks.

It goes without saying (but AC 43-13 says it anyway) "In general, landplanes do not receive corrosion proofing to the same extent as do seaplanes manufactured as such."

Be cautious of a landplane converted to a seaplane.

If there any welds visible, check to see if the paint is coming loose. Sometimes welds are not cleaned thoroughly and the paint loses adhesion. This is a sign of corrosion and can lead to metal fatigue.

Those of you that are wood enthusiasts don't get smug. The locations of corrosion on a metal aircraft were first found as rot (corrosion) on wood aircraft. Another problem with wood structures is "dry rot" underneath the shiny varnished surfaces. A light tapping on the shiny surface could indicate rotten core.

I have a "love/hate" relationship with box spars. For efficient structure, they are great. For corrosion/rot, they are horrible to inspect. It was a rotted wood spar that killed Knute Rockne.

Ask any "old" fireman who were on Hook and Ladder fire trucks in the days of wood ladders about "dry rot." (That could be another lengthy story.) (*Hey, Jack Roth, do you know anything about this?*)

(*Don't you composite guys get smug either. See the next article with Brian Martinez's response about how composites can deteriorate.*)

Don't let "Salesmen" use the shiny metal to blind your brain.

References

1. "Acceptable Methods, Techniques and Practices," AC 43.13-1A; "Aircraft Alterations," AC 43.13-2A
2. Aircraft Corrosion Control," originally published by IAP, Inc. According to "Craig" at 1 (800) 443-9250 the book order number is now JS312630 from Jeppesen Sanderson, 55 Inverness Drive East, Inglewood, Colorado, 80112. It is also available from EAA (1-800-843-3612, stock number 21-37597, \$10.95)

- Lee H. Erb

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Yes, Composites Can Deteriorate Too

(*The following e-mail was received here at Chapter 1000. Chapter 1000 Composites Expert **Brian Martinez** authors the reply*)

I read your article on composite construction on the web. After researching several designs, I decided to build a Vision, which is a composite aircraft. This aircraft is a plans built composite aircraft constructed using foam which is not gasoline soluble, and mostly bidirectional glass, unidirectional glass and epoxy. Everything is post cured at 150 degrees for 4 hours after construction.

I would be curious as to what generation this design would fall into.

Being an engineer, I chose composite construction, over the others because of resistance to the elements. After all wood rots, aluminum fatigues and corrodes, and steel rusts. The only material that I know that gets stronger with age is concrete, but then you have to keep it under water, and it is just a bit heavy.

Enjoyed your article

Robert Mardis, P.E.

Robert:

Not knowing the design that you mentioned I don't know all of your specific details. Based upon what you describe, however, I'll just say its in my 3rd Gen. I should point out that my generations are an arbitrary grouping in order to more easily describe the progression of largely fiber reinforced composite aircraft to folks who have no clue. So it's loose, but it gets the point across; gets folks thinking in a paradigm.

Metals oxidize and wood and other natural organic materials can degrade due to biological actions. Composite materials also degrade with age. Even though your aircraft may be post cured, that post curing in no way comes close to the high temperature/pressure autoclave processing that most aerospace industry grade airframe parts receive. Those process times can be over 24 hours and at temperatures over 300 deg F. As a result, your parts will have a higher incidence of microcracking due to voids and brittle fracturing as your parts age. Your aircraft will be more prone to creep under heat loading which over time will cycle your structure. Your aircraft will last a long time (especially if you keep it in a hangar), but not as long as the mil spec, carbon fibre/toughened high temperature epoxy resin, and industrially manufactured part. Make no mistake, composites for amateur construction are not a panacea in design. Remember, from the design engineering perspective, the material chosen comes as the result of a tradeoff. What you are getting is a performance improvement because you can achieve better surface smoothness more easily with composites and you will generally need no more than woodworking tooling to prosecute basic construction. You can also get closer to a true monocoque structure without excessive fasteners.

Most of us are not capable of getting the maximum allowable performance out of a composite structure, even when that part is largely prefabricated. The best that most of us will accomplish in our hangars and garages is at or

just a little bit better than ordinary aluminum...and aluminum is good stuff.

Hope this clears up the picture a bit. Remember, all aircraft are design tradeoffs. Stay within your limits. Good luck with your project...and keep EAA Chapter 1000 in your technological heart and mind.

- Brian Martinez

Alternator B-Lead Circuit Breakers

(The following is an e-mail question I sent to Bob Nuckolls of *The Aeroelectric Connection* and his response.)

Our local Chapter 1000 electrical guru raised the question of why people put large breakers on the B-lead of the alternator. His point was that it is impossible for the alternator to put out in excess of its rated amperage (excess voltage, of course, is possible).

I thought about it for a while, and came up with this: Is the purpose of the B-lead breaker to protect against the power windings or the diodes shorting to ground and thus the battery popping the breaker?

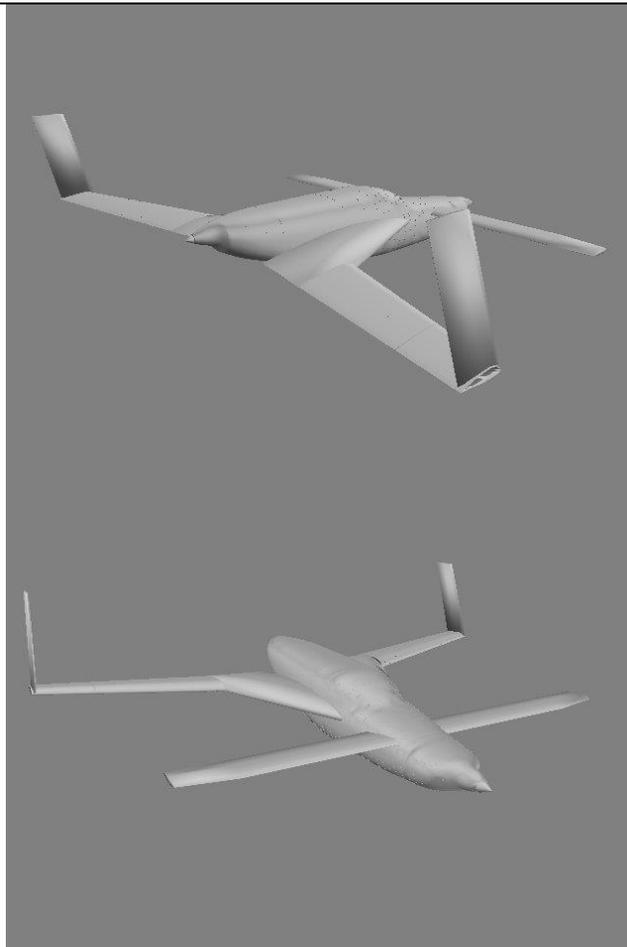
(The response:)

You are entirely correct . . . the fuse/breaker is used to protect the b-lead wire from BATTERY current should a diode or wire short in the alternator. This is such a rare event these days, I've moved b-lead protection out of the cockpit and onto the firewall in the form of an 80 amp fuse for a 60 amp alternator.

- Bob Nuckolls

Secret Project Revealed!

Project Police operatives have again been poking around in **Brian Martinez's** workshop area and have produced the following renderings of his latest design project. Our sources indicate that the design is based on Rutan's Defiant, but with custom molded fuselage shells of true lofted form (10% reduction in fuselage wetted area), no rhino rudder under the nose (rudders on tip sails), etc. Powerplants, and gear configuration TBD. Post-raid documents indicate the renderings to be the work of **Sten Martinez**.



Zenith Zodiac CH601 HDS

The name is certainly a bit of a mouthful but the end result is a very nice aeroplane. In the June 1996 *Western Flyer* (newsletter of the Western Australian Division of the Sport Aviation Association of Australia (SAAA)) there was an article from me where I described, in general terms, why I had decided to build the Zodiac. I still believe that I have made the right decision - unfortunately the building progress is almost negligible to this time. Maybe something like 15 weeks overseas so far this year may have something to do with it!

In this article I will comment on some of the information that I have obtained from other builders and from my trip to the USA and UK this year. There has been a lot of discussion on the Internet in the Zodiac builders forum - as can be expected a lot of this is ill-informed but most of the comments have been quite favorable.

For instance, recently there was a request from a prospective builder who asked if the Zodiac was a good aeroplane to build. The universal answer was yes, so that is a good sign.

One thing that needs to be kept in mind with this aircraft is Chris Heinz's design philosophies - keep it simple and keep it light. A further watchword of his is 'if it works then don't modify it'. These 'rules' upset some people as they are continually wondering why the design is not 'improved'.

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Anyway, back to my trip. The first part of the trip was the USA and I met Fred Long at Chicago where we set out in a rented car for the Oshkosh airshow. I won't go into details of Fred worrying about my driving - I don't think it was all that bad. I put Fred's nerves down to the fact that he was sitting in the right seat but it was missing the steering wheel. Later in the trip I gave him my new Lowrance Airmap GPS to play with and this kept him amused.

At Oshkosh this year there were two Zodiacs at the Zenair booth - one was the one featured in the August and September 1997 issues of *Popular Mechanics* (PM) and the other was one built in Canada by the Canadian distributors, Flypass. The PM aircraft, a tri-gear 601 HDS aircraft, was built strictly according to the plans. The write-up in the PM article was very good - sufficient to say that the factory has been inundated with inquiries for information packs. The Canadian aircraft had a few minor modifications such as a revised canopy locking and slightly different wing tank arrangements but was fundamentally standard.

At the time I was seriously considering using their canopy locking system as it is a distinct improvement over the standard system which hinges to either side and has a fairly crude locking system. While at Oshkosh I saw the RANS S16 and it had a very neat forward hinged canopy and it got me thinking that it would be a better system on the Zodiac. More on this subject later.

On the Saturday evening was the annual Zenair builders dinner and, by chance, I was seated at the same table as the Zodiac designer, Chris Heinz. After the dinner I had a discussion with Chris about some of the modifications I had in mind for my Zodiac and he agreed that my ideas were quite sound. These proposed modifications were fairly minor but included a modified wing tank configuration, the 120HP Jabiru, moving the firewall forward, modified seat belt mountings and a removable instrument panel. On the subject of dual control sticks and a modified canopy hinging he could not offer any particular advice other than to reiterate his previous comments about keeping the weight down.



Zodiac 601HDS in front of the Zenith factory in Missouri.

The next stop after Oshkosh was the Zenith factory at Missouri where Fred and myself both went for test flights on the factory demonstrator 601. The weather was lousy, with a ceiling of only about 700-800 feet so that each flight

was not much more than an extended circuit. Fred agreed with me that it is a pleasant aircraft to fly.

After the USA I flew over the UK and, fairly conveniently, was staying at Salisbury and I took the opportunity to visit Alan Cozen at Goodwood where he has his CH601HD hangared. This aircraft was the subject of a protracted certification exercise with the Popular Flying Association - PFA - as they claimed that it lacked longitudinal stability and insisted on a larger tailplane. In the UK the PFA is, effectively, the ruling body on homebuilt certification and they claimed that the standard HD model failed the phugoid stability test. In other words when the stick was displaced fore and aft the aircraft did not properly return to the stable flight condition. All this had been written up in the December 1996 issue of *Pilot* magazine and there had been a lot of discussion on the Internet before I left on my trip. At this time I did the stability calculations for the HD model and it certainly was not within the accepted stability range so I can see the reason for the PFA stance. As a matter of interest I also did the stability calculations for the HDS model (the one that I am building) and this works out fine as the wing area is smaller so the ratio of wing to tail areas is better.



Alan Cozen's Zodiac 601HD in the hangar at Goodwood (UK), with a forward-opening canopy

Anyway, this was not the main reason for my visit to see Alan. What I wanted to see was the modified control stick assembly where he now has dual sticks instead of the central stick. I was not keen on the central stick as I am right handed and this would mean that to operate the radio, GPS and similar functions would be difficult. I would either have to try to fly with my left hand on the central stick or muddle along with my left hand on the radio etc. (which presumably would also be in the centre of the aircraft). The modifications he did were quite simple and I have a set of his drawings that he submitted to the PFA for his certification so it should not be a problem here - certainly if the Experimental Category is introduced.



Alan Cozen's dual stick conversion in lieu of the standard centre stick

Another modification he did was to have a forward hinged canopy which is supported by gas struts. I like this and intend to do the same to mine. I have his drawings for this also and it is interesting to note that the weight penalty for this mod is only 2.1Kg. Alan was a very interesting person to talk with and I certainly appreciated the time he spent showing me these - and other mods he made to the aircraft.

I now have a very clear picture of what I want to do so all I have to do now is to put in the necessary hours and dollars to see my dream realised.

If anyone else has a dream of building anything else other than an RV then this design has a lot to recommend it.

- **Graham Byass**

EAA Chapter 1000 Det 10
Perth, Australia

EAA Chapter 723 Camarillo Fly-In

This year's Father's Day Fly-In, sponsored by Camarillo's EAA Chapter 723, will be held on 20-21 June 1998. This year will include a pancake breakfast in the morning and an aerobatic show in the afternoon. There will be the usual collection of static displays, Fly Market, and vendors. You say your spouse isn't interested in spending the day looking at airplanes? Let her take the shuttle bus to the Camarillo Premium Outlet Mall near the airport. Also planned are activities for the kiddies.

Admission is a \$5 donation for adults and \$2 for kids 6-15. The little guys and gals are free. Gates are open 0900 - 1700 Saturday and Sunday. Avoid all of this by flying in your display aircraft and get in FREE.

If there is interest in forming a **Project Police Tactical Assault Force (PPTAF)**, it looks like **President Aldrich** has volunteered to be a focal point for such an uprising. Your NLE will be in Texas conducting additional taxi testing on Lee Erb's latest project, detailed in this news-rag last month.

Maintenance Guidelines For The Owner-Pilot/Builder

(Recently, former Chapter 1000 member and Technical Counselor Bob Daniel, now at Altus AFB in Oklahoma, was cited by the **Project Police** with borrowing a copy of Sport Aviation and never returning it. He was unable to locate said magazine, and as such was fined with a requirement to submit an article for **The Leading Edge**. The following is an article he put together for EAA Chapter 1014. It's a good one, so we'll let him slide with a re-run.)

As an owner-pilot and builder, FAR Part 43 allows you to perform certain types of inspections and maintenance on your airplane. As the builder you are considered the manufacturer and such you may receive a repairman's certification by due process as outlined in Advisory Circular 65-23A. This partial list does not apply to a builder with a repairman's certificate. The builder has full capability to relicense (do an annual) and do the full range of maintenance tasks to keep the aircraft airworthy.

The following is a partial list of inspections and maintenance that you as owner-pilot can do.

1. Repair or change tires and tubes.
2. Clean, grease, or replace landing gear wheel bearings.
3. Add air or oil to landing gear shock struts.
4. Replace defective safety wire and cotter keys.
5. Lubricate items not requiring disassembly (other than removal of nonstructural items such as cover plates, cowling or fairings).
6. Replenish hydraulic fluid.
7. Refinish the exterior or interior of the aircraft (excluding balanced control surfaces) when removal or disassembly of any primary structure or operating system is not required.
8. Replace side windows and safety belts.
9. Replace seats or seat parts with approved replacement parts.
10. Replace bulbs, reflectors, and lenses of position and landing lights.
11. Replace cowling if removal of the propeller is not required.
12. Replace, clean or set spark plug clearances.
13. Replace hose connections, except hydraulic connections.
14. Replace prefabricated fuel lines.
15. Replace the battery and check fluid level and specific gravity.

Although fore mentioned work is allowed by FARs, each individual should make a self analysis as to whether or not he or she has the ability to perform the work satisfactorily.

If any of the fore mentioned work is accomplished, an entry must be made in the appropriate logbook. The entry shall contain:

1. A description of the work performed (or references to data that is acceptable to the Administrator).
2. Date of completion.
3. Name of the person performing the work.
4. Signature, certificate number and kind of certificate held by the person performing the work.

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The signature constitutes approval for return to service only for work performed.

Note: References and content of this handout are from FAA-P-8740-15A / AFO-0783

- **Bob Daniel**

Odds and Ends

A visit to the *Flying Snake Ranch* recently to recover the Pedal Pitts after the recent Fly-In revealed that the upgrades to **Gretchen Lund's** Mooney are progressing nicely. Of note was a clever solution to the labeling of those 52 wires on one connector that are all white and all look identical. Simply use your laser printer to print out a clear text label for the wire (such as "Oil Pressure" or "Landing Light") in 6 point type (or as small as you can read). Cut out these labels and attach them to the wires with clear heat shrink tubing.

Been looking for plastic 55 gallon barrels (drums) but don't want to pay more than \$60 for new ones? Working on a tip from **Charlie Wagner**, I found a source for used barrels in Apple Valley at the reasonable price of \$12 each. Call **Ron Needham** at 760-242-5988 to ask if he has some in stock. If so, you can pick them up at Victor Valley Fabrication. To get there, head east through Apple Valley on CA 18. The last traffic light is on Central Ave. Shortly after that, turn left on Joshua Road. Drive about 1/2 mile and it will appear on the right.

Which leads into the next point--why did I need plastic barrels? Within a month or two I will be opening the Chapter 1000 Alodining Facility in my garage. Okay, so it's primarily for corrosion treating the aluminum parts for my Bearhawk wing, but it will be available for use by any Chapter 1000 or 49 members who have parts they need to alodine. After all, somebody's got to take up the slack now that Charlie Wagner is moving his operation up to Fallon NV.

- **Russ Erb**

SFTE Symposium To Cover EAA Topics

The Society of Flight Test Engineers (SFTE) will be hosting their 29th annual symposium on 14-18 September 1998 in Reno NV. Those of you quick with the schedule will note that it ends just in time for the start of the Reno Air Races.

So why bring that up here? Thanks to organizers such as **Al Lawless**, this symposium will include several topics of interest to EAAers. These include "Propeller Design and Selection" by **Don Bates**, "Flying Competition Aerobatic Aircraft" and "Flight Testing of Aerobatic Aircraft" by **Dan Rihn**, and "Flight Testing Experimental (Homebuilt) Airplanes" by **Chris Heintz** of Zenair Ltd. Of course, there will also be the bevy of cool flight test subjects as well.

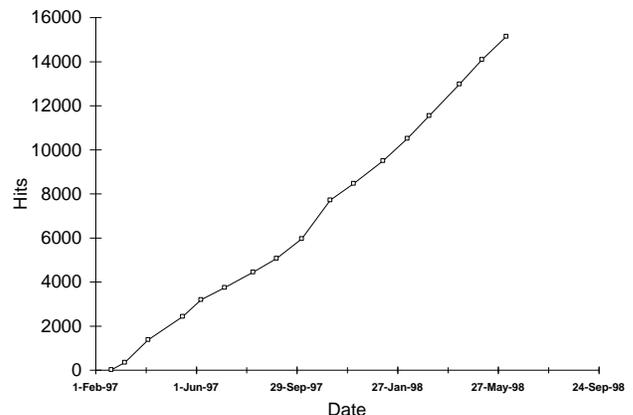
To find out more, call the SFTE office at (805) 538-9715 or go to <http://www.sfte.org>.

Top Ten Advantages of UAVs

10. UAVs don't need crew rest.
9. UAVs don't hog all the seats at the Officers Club during Happy Hour.
8. You don't have to call UAVs by some dumb nickname.
7. It doesn't bother UAVs that they don't know their parents.
6. UAVs don't have egos greater than all outdoors.
5. UAVs don't embarrass you at social functions by molesting the opposite sex and playing aircraft carrier on a beer soaked table.
4. UAVs don't throw up on your spouse's clothes.
3. UAVs don't need \$100.00 sunglasses to hide their bloodshot eyes.
2. UAVs don't bitch about not having carpeting, cable TV and a Jacuzzi tub when deployed, and finally...
1. You don't have to pay UAVs enormous amounts of per diem, a leather jacket, higher promotion rates, and bonus money to do a job they volunteered for.

Web Site Update

As of 6 June 1998 (Normandy D-Day, 54 years later), the hit count passed through **15130**. This brings the hit rate down to 36 hits/day, which is still well within what we have been seeing to date. See the graph of the activity below.



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

Around 25 April 1998, your web site staff installed counters on the index pages and selected other pages in an effort to get an idea of what areas our visitors were visiting. Here are the results of the first month or so of tracking:

Web Site Subject	Hits
Other Aviation Web Pages	939
<i>Project Police</i> Picture Pages Phor Pilots	338
Technical Articles	306
Aircraft our Members are Building or Flying	220
<i>Project Police</i> Blotter	170
What's New...	148
Flight Reports	126
Useful Reference Material	98

Recent Newsletters	81
Seventh Annual Scotty Horowitz Going Away Fly-In -- The Report (since 17 May)	77
Design Group	75
Schedule of Events	73
Weather Information	71
Cool Ideas from Chapter 1000	70
Operation Rubidoux Sundown VI... The Report	66
Articles of Related Interest	61
Info on Local Airports	58
Safety	54
Young Eagles Program	50
Chapter 1000 History	40
Meet our Chapter Officers	39
This Is So Cool! How Can I Create a Web Site For My EAA Chapter?	38
A Special Note to EAA Chapter Newsletter Editors	23
Project Police and the Chapter Leadership Conference	23
Summaries of Past Chapter 1000 Meeting Programs	17
Download WinYEFC	16
And now a word from our sponsor...	11

There are numerous conclusions, or at least inferences, that we can draw from these data (data are plural, you know).

1. The most popular section of our site by almost a factor of 3 is the links page to other sites. Hmm. Go figure.

2. The second most popular section is the Picture Pages. This fits in with **Norm's World Wide Web Theory** that the casual surfer is more interested in looking at cool pictures than in reading long diatribes on Pitot-statics. This is also supported by the popularity of "Aircraft our Members are Building or Flying."

3. The third most popular section flies in the face of Norm's theory. Our technical articles are almost twice as popular as the **Project Police** blotter. I guess more people are interested in learning something or finding something to put in their newsletter than in reading about our antics. Even so, the **Project Police** blotter is still popular.

4. Even though virtually everything on the site has been there for a long time, none of the sections are being totally ignored. Each area is drawing in at least a little interest. From this we can infer that we continue to get new readers, or at least readers coming back to look at something they haven't already seen.

5. Adding up the hits in the table gives a total of 3286 hits, with only 1522 new hits registered on the home page. From this we can infer that each person coming into the web site on average views at least two sections, so they're staying a while when they do come. Some of these numbers could be people systematically looking through the entire web site.

- Russ Erb, Webmeister



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 805-538-2028.

A Teaser...

Coming up in future editions of *The Leading Edge* for your reading enjoyment:

Grumman HU-16A Albatross Flight Report -- your NLE takes a flight in the Albatross and reports on what he finds

Zen and the Lost Black Art of Antennae -- a very interesting and understandable primer on antenna installation from our own **Paddles**.

And, of course, more exciting corrosion control articles...



The following is a paid advertisement...

Oshkosh '98

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Clip this AD for \$20.00 off.
 + \$10.00 for Chapter 1000 Members

Chapter 1000 Calendar

Jun 13: EAA Chapters 1000/49 Young Eagles Rally, 8:00 a.m., General William J. Fox Field, Lancaster CA. (805) 256-4829

Jun 16: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (805) 490-1476

Jun 20-21: EAA Chapter 723 Camarillo Air Show Expo 98, Camarillo Airport (CMA), Camarillo CA. (805) 383-0686

Jul 1: EAA Chapter 49 Monthly Meeting, 7:30 p.m., Sunnydale School. 1233 S. Ave. J-8, Lancaster, CA. (805) 948-0646

Jul 8-12: Northwest EAA Regional Fly-In, Arlington WA

Jul 11: EAA Chapters 1000/49 Young Eagles Rally, 8:00 a.m., General William J. Fox Field, Lancaster CA. (805) 256-4829

Jul 11: Flyout to Oceano (L52) (805) 943-9343

Jul 14: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., Edwards AFB. Test Pilot School, MOL Room (805) 490-1476

Jul 21: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (805) 490-1476

Jul 29-Aug 4: 46th Annual EAA AirVenture Oshkosh, Oshkosh WI

Aug 8: EAA Chapters 1000/49 Young Eagles Rally, 8:00 a.m., General William J. Fox Field, Lancaster CA. (805) 256-4829

Aug 8: Flyout to Fresno Sky Park (O6O) (805) 943-9343

Aug 18: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (805) 490-1476

Sep 11-13: EAA Chapter 1073 Wings On Air Fly-In. Truckee Tahoe Airport (TRK), Truckee CA. (530) 562-0617

Sep 12: EAA Chapters 1000/49 Young Eagles Rally, 8:00 a.m., General William J. Fox Field, Lancaster CA. (805) 256-4829

Sep 15: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (805) 490-1476

Sep 25-27: Golden West EAA Regional Fly-In, Castle Airport, Atwater, CA

Sep 27: Bohunk Fly-In, Bohunk Airpark (805) 942-7080

Oct 3: Edwards AFB Open House and Airshow

Oct 8-11: Copperstate EAA Regional Fly-In, Mesa AZ

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

RV-4 KIT. tail kit 60% complete, wing kit still in the box and a steel box beam 1/2 wing span jig. \$2800

A pair of 5" Cleveland wheels, bearings, tires and disks never been used \$400

Two 3" rims, disks, brake + wheel cylinders, bearings, axles, reservoir, extra rim. \$350.

Avionics, Flybuddy \$200+ ant, R-50 Loran+rack \$250, Escort II NAV/COM digital \$700.

Contact Joe Biviano at skypilot@jps.net or (805) 272-1172

To join Chapter 1000, send your name, address, EAA number, and \$15 dues to: EAA Chapter 1000, Gary Aldrich, 42370 61st St. W, Quartz Hill CA 93536. Membership in National EAA (\$40, 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

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!

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:

REGULAR MEETING 16 JUNE AT TPS

OFFICIAL FLY-IN REPORT

CHRONICLES OF GROSS BUFFOONERY

DOWN UNDER WITH THE ZENITH ZODIAC

