



# THE LEADING EDGE

NEWSLETTER OF MUROC EAA CHAPTER 1000

Voted to Top Ten Newsletters, 1997, 1998 McKillop Award Competition

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<http://www.eaa1000.av.org>

December 1999

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:



### PROJECT POLICE OFFICER TRAINING FIELD TRIP

**Tuesday, 21 December 1999**  
**1700 hrs (5:00 PM Civilian Time)**  
**Erbman's, Hojo's, Opie's, and**  
**The Golden Cantina**  
**Edwards AFB and Rosamond, CA**  
**(See Page 2!)**

Inasmuch as the USAF Test Pilot School is in the process of moving to a different building to allow renovation of Boyd Hall, we don't have our normal meeting place available (Watch next month for information on how to find the new site). In addition, a major *Project Police* operation to visit the **Flabobians** is just around the corner. Therefore, the **Kommandant** and his **General Staff** have declared that December's gathering will be a *Project Police Officer Training Field Trip*. If you did this in any other EAA Chapter, they'd probably call it a Project Tour. But, hey! You're not in just any EAA Chapter!

We'll visit three projects this time. First we'll see **Russ Erb's Bearhawk** on Edwards AFB at 1700. The flaps and ailerons are done, and you can expect to see a wing in the jig. We'll depart at about 1730 for Rosamond to see how **Howard Judd's Giles G-202** is coming along. It's been almost two years since we last inspected it. At roughly 1830 we'll depart for our third stop to inspect **Doug Dodson's Glasair II-FT**. Here we'll even get some hands-on time, and Doug expects to conveniently be

needing a bunch of EAAers to help him mount the fuselage on the wing.

After a highly successful round of project inspections, we will proceed to the **Golden Cantina** to revel in our victory and solve all of aviation's problems over a burrito.

Come and learn from the experts how to barge in to a workshop, ask a non-stop barrage of inane questions, offer opinions in areas unfamiliar to you, and see what fine craftsmanship looks like. There may even be a training session in the proper use of the dreaded P<sup>2</sup>3DI!

If you enjoy this trip, be sure to tell your board of directors! Other future victims could include **Dave Evans (RV-4)**, **Jim Payne (ASH-25)** and his new hangar, and **Bob Waldmiller (Excalibur)**, plus others!

## Turn the page to find convenient maps to the target areas!

### The Prez Sez...

Victory! Yes, once again the membership has spoken and the Board has received a resounding mandate to proceed on our policy of benevolent **Kommandant**-ship and the pursuit of the perfect CCC. Well, almost... I am pleased to announce that we've elected some (maybe not so...) fresh faces to the Board. **Bill Irvine**, who you may know as the owner of a complete Cessna 310 kit has succumbed to my pressure to participate in chapter leadership as a Director. We'll be welcoming his inputs at board meetings and chapter gatherings and we'll be grooming him for big, BIG, things in the future (watch out, Bill).

(continued on Page 2)

## IMPORTANT PROJECT POLICE DATES YOU NEED TO KNOW!

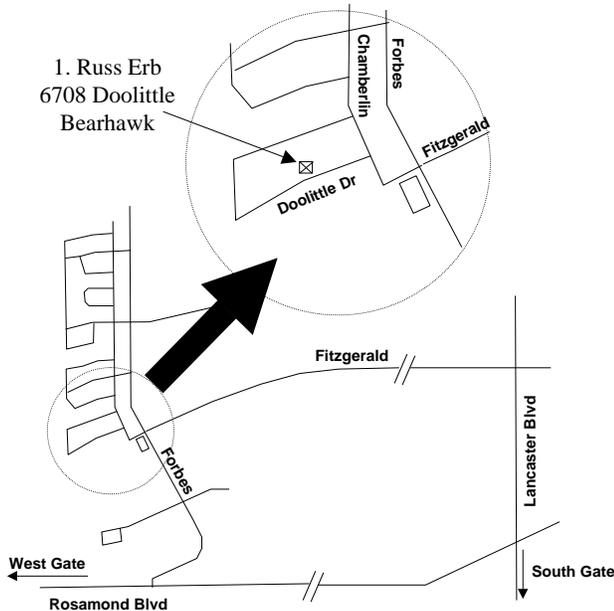
EAA Chapter 1 Open House, Flabob International Airport, 26-27 February 2000  
 therefore *Operation Rubidoux Sundown VIII* Inspection of Flabob, 26 February 2000  
 Ninth Annual *Scotty Horowitz Going Away Fly-In*, Rosamond Skypark, 20 May 2000  
**It's Time To Pay Your Dues! \$20**

# THE LEADING EDGE

## PROJECT POLICE OFFICER TRAINING FIELD TRIP

### Stop 1. 1700-1730

Russ Erb's Bearhawk  
6708 Doolittle Dr  
258-6335  
Edwards AFB



See the Bearhawk wing structure currently under construction.



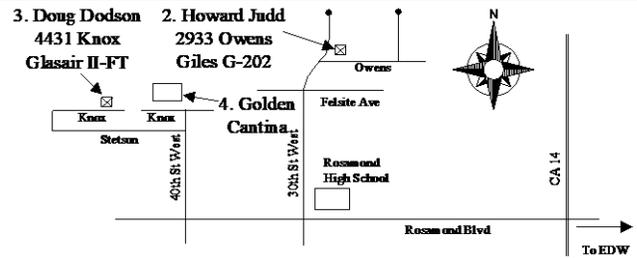
### Stop 2. 1800-1830

Howard Judd's Giles G-202  
2933 Owens  
256-0635  
Rosamond

### Stop 3. 1830-1900

Doug Dodson's Glasair II-FT  
4431 Knox  
256-7276  
Rosamond

Note that you'll have to turn down Stetson to get there...



### Stop 4. Sometime after 1900 Golden Cantina Rosamond

#### The Prez Sez (continued)

**Doug (Opie) Dodson** has also responded to my whining and has agreed to take away the easy part of my job...as Treasurer. A former **Kommandant**, Doug swore he wouldn't take another chapter officership until the Glasair was done. Guess he's gotten soft now that he's married. Anyway, his help is greatly appreciated, as is that of the returning board members. Let me make the same plea I did last year...If you don't like the way the chapter is doing business, TELL us. Better yet, depose (violent coups not sanctioned) the board member of your choice and do it YOUR way.

I'm sure that all of you are looking forward to this month's **PPTAF** raid. I know I am...been limiting my CCC input in preparation. I'm directing as many of you as possible to participate, as this operation will set the stage for Y2K ops.

Be careful out there!

Happy Holidays!

- Gary Aldrich, Kommanding

#### Last Month's Meeting

##### EAA Chapter 1000

Scobee Auditorium, Test Pilot School, Edwards AFB  
1700, November 16, 1999

Gary Aldrich, Presiding

This was actually a meeting! Yes, that's right, our annual meeting to conduct the chapter business of ~~railroading~~ electing a new slate of officers was held in November. No records of this meeting were made in an effort to protect chapter nuclear secrets from Red China. That, and our secretary was not present and Russ forgot the video camera. Therefore, we will now recreate the events as they may have happened.

#### Getting Flabby

For the first time in three months, a chapter meeting was held without Edwards AFB being in the throes of some exercise.

Schmoozing began right on schedule, at a time loosely described as "five-ish." **Schmoozemeister George Gennuso** led an exciting round of schmoozing and lie-

swapping. The beginning of the meeting was delayed while the members present completed the required consumption of the bag of "Chewy Chips Ahoy," the official *Project Police* approved store-bought C<sup>3</sup>s.

**Guests**

**Jeff Goedhard** was visiting with us. Jeff works for Boeing in the 767 Flight Test Program.

**Mark Dickerson** joined the chapter. Mark is the local rep for Veridian (formerly Calspan and Veda), the folks who operate the variable-stability Learjet used at TPS, the VISTA F-16, and other unique flight test assets.

**Briefing from HQ**

Chapter Views tape

**Program**

This month we had **Frank Roncelli** speak to us. You may know Frank as a Technical Counselor for Chapter 49, sheet metal guru, keeper of many cool tools, and all-around good guy. Though not an official member of Chapter 1000, Frank always seems to be around at our weekend events helping out and supporting us.

Frank spoke to us about his very interesting career in the shops at Lockheed. Prior to retirement, he worked on many different aircraft. All were outstanding examples of their breed. The Lockheed Constellation was the premier development of the piston-powered airliner. Frank talked to us about the incredible complexity of the installation of those large radial engines.

As turbine engines started to take over from pistons, Lockheed built the Electra. Unfortunately, the nacelles on the early models suffered from a whirl instability. Frank talked about bringing an aircraft in and testing it to find out why nacelles were ripping themselves off of aircraft. It turned out that several vibrational modes were combining at a critical joint and crystallizing the metal until it failed. The nacelle was redesigned to redistribute the vibrational modes and the problem was solved.

Obviously Lockheed knew a good man when they had one, and Frank was assigned to a super-secret project, which we now know as the YA-12 and SR-71 project. Frank still volunteers at the Blackbird Airpark just outside of LA Center in Palmdale.

If you need help on your project, especially in sheet metal work, give Frank a call!

**Adjournment**

When Frank was done talking, we adjourned, probably about 1830-ish. Many of us proceeded to the BK, a.k.a. *PPHFFRC (Project Police High Fat Food Replenishment Complex)*, where good times were had by all swapping more lies. Afterwards, Frank came over to inspect the Bearhawk project, and was surprised at the amount of stuff rammed into a 1-car garage with room left over to do something. He recommends you see it for yourself this month.

- **Erbman**  
Pseudo-Psecretary



**Young Eagles Update**

**Fox Field, Lancaster, November 13, 1999**

Perfect day for a Young Eagles Rally!! Clear blue skies, 70 degrees, winds light and variable. We also had a birthday party for future pilot Lauren Abraham (10 years old). I hope everyone enjoyed the flying and festivities. Victoria Rosales came to our rescue and helped us print up certificates in the dreaded absence of Ron "Dog-Gone-It" Wilcox. Paul Rosales handled the post flight certificates and pictures by himself until Dave Webber arrived - thanks Paul!! Space Miller brought his own fan club.

I have decided to have a rally in December this year to help us some with our numbers. I have a local Boy Scout group lined up for the 11th of December. Hopefully that will put us above 300 Young Eagles for the year. This is your last chance for the year to help out, so I'll see you there!!!!

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

The totals for November's rally are as follows: 7 pilots, 6 ground volunteers, and 21 Young Eagles.

**Ground Crew:**

- Kristin Abraham** *Birthday party coordinator*
- Victoria Rosales** *Pre-flight registration*
- Angela Webber** *YE greeter*
- Brooke Webber** *Ground level entertainment*
- Dave "I-Made-It" Webber** *Post-flight certificates and pictures*
- Paul Rosales** *Post-flight certificates and pictures*

<b>Pilots:</b>	<b>Equipment:</b>	<b>#YEs</b>
<b>Miles Bowen</b>	Cessna 170B	4
<b>Doug Dodson</b>	Mooney M20C2	2
<b>Don Gates</b>	Cessna 150	3
<b>Bob Hoey</b>	BD-4	2
<b>Ozzie Levi</b>	Bellanca Crusair	1
<b>Space Miller</b>	Cessna 172	6
<b>Con Oamek</b>	Bonanza F33A	3

**Young Eagles this Rally: 21**  
**Young Eagles this Year: 266**  
**Young Eagles Grand Total: 2562**

**Reminder Reminder Reminder!!!**

December rally will be at FOX FIELD on December 11th @ 0900 - see you there!!!

- **David McAllister**

## Chapter 1000 Names "Technical Assistants"

Chapter 1000 has existed for about 8 years now mostly without a local technical counselor. I suspect that this is mostly due to the lack of someone who was a) qualified to serve as a tech counselor (have built or restored an airplane or hold an A&P rating), and b) willing to serve as one. **Gary Sobek** is currently on the books as a Technical Counselor for Chapter 1000, but is not readily accessible to many of our members.

Most of our long term members have figured out who knows how to do what. For our newer members, it would be nice if this were somehow documented somewhere so that they wouldn't have to spend years figuring it out.

To that end, we are naming some chapter "Technical Assistants." This is someone who is perhaps not fully qualified to be a technical counselor but has enough knowledge in a particular area to be of help to other builders.

If you have questions in an area listed, contact one of the names listed. If you would be willing to serve as a "Technical Assistant," contact Russ Erb to tell him what areas you feel yourself qualified in.

<i>Composite Construction</i>		
<b>Doug Dodson</b>	73773.1546@compuserve.com	256-7276
<b>George Gennuso</b>	pulsar1@qnet.com	265-0333
<b>Norm Howell</b>	testwest@qnet.com	256-1643
<b>Brian Martinez</b>	brianmartinez@cs.com	943-5379
<b>Bob Waldmiller</b>	waldmilr@qnet.com	256-0932
<i>Wood Construction</i>		
<b>Bob Waldmiller</b>	waldmilr@qnet.com	256-0932
<i>Aluminum Sheet Metal Construction</i>		
<b>Miles Bowen</b>	mbowen@cybersurfers.net	822-0806
<b>Russ Erb</b>	erbman@compuserve.com	258-6335
<i>Welding/Welded Steel Tube Construction</i>		
<b>Russ Erb</b>	erbman@compuserve.com	258-6335
<i>Engine Installation</i>		
<b>Bob Waldmiller</b>	waldmilr@qnet.com	256-0932
<b>Doug Dodson</b>	73773.1546@compuserve.com	256-7276
<i>Electrical Systems</i>		
<b>Miles Bowen</b>	mbowen@cybersurfers.net	822-0806
<i>Instrumentation and avionics requirements for VFR/IFR</i>		
<b>Gary Aldrich</b>	gary_aldrich@pobox.com	609-0942

## Notes on Steel Working Tools

It probably comes as no surprise to readers of this newsletter that having the proper tools for a job makes the job much easier. Perhaps this is why we tend to accumulate tools so quickly. I haven't checked lately, but I wouldn't be surprised if my tool expenditures are still ahead of my material expenditures.

Growing up, I was exposed to two primary building materials: wood and steel. I found wood very easy to work with, but steel was very difficult and I came to avoid it whenever possible. Looking back, I can see that the primary reason I didn't like working with steel was that my Dad's shop was not well equipped with tools for that purpose (while it was equipped for wood working). I seem

to remember having a hack saw, tin snips, and a file or two. Not exactly what you would want to start building an airplane with, unless you have an unnatural aversion to power tools.

So naturally this childhood aversion would drive me to build an airplane with a steel tube fuselage and tail, right? Actually it was more of a case of ignoring those childhood memories and figuring that a few good power tools would help.

Sure enough, with a better set of tools, steel was significantly easier to work with. The tools that I use most for steel are a horizontal/vertical metal cutting bandsaw, a 1 inch belt sander, a grinder (same one that has the Scotch Brite wheel for aluminum on the other side), a Moto-Tool with a 1/2" grinding wheel and a fiberglass cut-off wheel, a 3" metal shear, a tubing notcher, and the usual assortment of drills and files. Of course there's some sort of welding equipment for putting together the stuff you've cut apart, but I'll save that discussion for a different article.

### Horizontal/Vertical Metal Cutting Bandsaw

Harbor Freight  
<http://www.harborfreight.com/>  
Item 37151 \$179.99

This bandsaw uses 1/2" x 64-1/2" blades, which are available with either 10 teeth per inch (tpi) or 18 tpi. For aluminum bar stock, I've found that the 10 tpi blade works best. Using an 18 tpi blade results in the aluminum shavings sticking in the teeth and thus clogging up the blade to the point that it doesn't cut anymore. With the 10 tpi blade, the shavings fall out properly. For steel, I normally use the 18 tpi blade for steel.



By adjusting a belt on pulleys, the saw can be run at three different speeds. Guidance is given on selecting speeds, but typically I just run it on the slowest speed with adequate results.

In the vertical position, it can be used like a conventional bandsaw, feeding the stock through by hand. This is the best position for "ripping." Cuts can be made to any length for a width on the inside up to 2-3/4 inches wide. Because of the 1/2" width of the blade, cuts are mostly limited to straight cuts. **Charlie Wagner** showed me that when using the saw in the vertical position, the best way to keep the saw from falling over or scooting across the floor is to sit on the base portion like you would sit on a horse. The only odd thing about this, other than making sure the vise is out of the way, is that it puts the power switch under your *Project Police* "hinders."

For "cross cutting," it is far more convenient to use the saw in the horizontal position. In this case, you secure the workpiece in the vise, lower the saw blade onto it, turn the power on, and walk away to do something else. The cool part of this design is that it will work away at sawing through the piece, feeding itself by gravity, then shut itself off when it is done!

To use the saw in the vertical mode, a work table is provided. However, this table must be removed to use the saw in the horizontal position because of interference. **Charlie Wagner** has shown that the table can be cut down in such a way that there is no interference, yet still be useable in the vertical position.

**1" Belt Sander**

I use a 1"x30" belt sander from Sears. It gives you about 4-1/2 inches of working space. There are also 1"x42" belt sanders (shown here) available. I found out about the bigger size after I had bought mine, but I have not been constrained significantly by the shorter working area.



My belt sander has a 5 inch disk sander on the other end of the motor, which I have pretty much never used. I don't care much for disk sanders because they remove material unevenly.

This is mostly because the tangential velocity of the sanding medium increases as you get further from the center. (If you have an application where a disk sander is better than a belt sander, send it in for publication--I'd love to hear it!)

I first thought it would be more useful to have a wider belt, such as a 3" or 4" belt like woodworkers use. Even so, I bought the 1" wide belt sander because 1) it's what "everybody" said to use, and 2) it was less expensive. As it turns out, it has been quite satisfactory for virtually everything I've needed to do. I think the difference comes from where wood is typically "wide" (3/4" or greater), steel is typically "thin" (under 1/8"). For doing edges and convex curves, the 1" belt is plenty wide. On the rare occasion that I need something wider or close into an acute corner, I clamp my handheld 3" wide belt sander upside down on the work table.

The belts are available at Harbor Freight in 80 grit and 120 grit. Buy them in the 5 pack package, which is dirt cheap compared to buying them individually at Sears. I have found these belts to be of good quality, and they last significantly longer than I would have expected.

I recommend that you use different belts for sanding steel and aluminum. That way you won't get little bits of aluminum embedded in your steel or, worse yet, little bits of steel embedded in your aluminum. Dissimilar metal corrosion, you know. Same reason you don't use steel wool on aluminum.

**Grinder**

I use a basic bench grinder, again from Sears. I decided on the 6" grinder after long and exhaustive research (specifically, I opened the Avery catalog and determined that their Scotch Brite wheels are 6" in diameter).



Grinders are similar to table saws, in that they come with guards that people tend to take off and not use. Now I'm all for safety, but there are times when safety devices get in

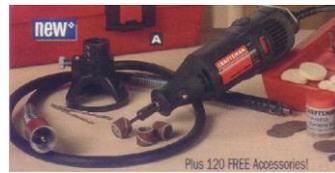
the way and make the job less safe, or prevent the job from getting done.

I bring this up because I use the guard over the grinding wheel but not over the Scotch Brite wheel. This was for two reasons. First, some of the aluminum parts I used the Scotch Brite wheel on are long enough that the guard would be in the way. Second, a Scotch Brite wheel is typically used differently than a grinding wheel. The workpiece is placed on the part of the grinding wheel that is turning toward you, whereas the workpiece is placed on the part of the Scotch Brite wheel that is turning away from you. Since the guard is designed for grinding wheel use, it would cover the part of the Scotch Brite wheel that you need to use.

My guard came with a yellow plastic piece that holds a light bulb and supposedly serves as eye protection. Because of its color, I find it makes the part more difficult to see. I usually just move it out of the way and use goggles or safety glasses.

**Moto-Tool**

Another extremely useful tool is a Dremel Moto-Tool or one of the many look-a-likes. Of course, this tool does just about everything but hammer, but there are two uses that I am interested in for this discussion. With a 1/2" grinding wheel, this tool is useful for grinding all of those inside curves that none of these other tools (except some files) can get to.



The other use is with the fiberglass cutting wheel. This will cut in many areas that no other tool will get to. Be sure to get the cutting wheel made of fiberglass. The emory cutting wheels may be cheaper, but they have a MTBF on the order of seconds.

**3" Bench Metal Shear**

Harbor Freight  
<http://www.harborfreight.com/>  
Item 32153 \$49.99

You may have seen a 4 foot or larger shear, which is very nice for cutting thin sheets of aluminum in one motion. If you need to use one of these, call up **Frank Roncelli** and set up a time to use his. The drawback of these shears is that they don't have sufficient capacity for steel in thicknesses larger than about 0.032.



Enter the 3 inch bench metal shear. While the 4 foot shear cuts like a paper cutter, the 3 inch shear cuts more like a pair of scissors. Don't be fooled by the 3 inch dimension--the body of the shear is slotted such that straight cuts of any length can be made. It is also useful for trimming convex curves down to about 3/4 inch diameter.

The shear capacity is quoted as 12 gauge steel, which is a thickness of 0.1072 inch. I have demonstrated its

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capability to cut 0.100 4130 steel. Mike Meador has cut up to 0.125 4130 steel, but says you don't want to feed it a steady diet of such thick material.

An adjustable stop keeps the stock from twisting between the cutters, which is required to allow the cutters to do their job. This stop is a little less than 3/4 inch from the cutter, which means that the material on this side of the cut line has to be 3/4 inch wide or greater for the shear to work.

The handle for the shear is not permanently attached, but rather fits on a hex head like a box end wrench. You could conceivably use a wrench or socket instead, but the supplied handle seems sufficient for as thick of material as the cutters can handle. I did find that the handle tends to work itself off of the hex head with continued use--this could be quite a surprise if it came off while cutting! The simple solution is to remember to push it back on before each cut.

Rather than mount the shear directly to a work bench, I mounted it on a 2 foot 2x4 with counterbored carriage bolts. This 2x4 was then set across the short dimension of a EAA Chapter 1000 standard work table and held on with bar clamps.

For cutting the thicker pieces, the best technique I found was to hold the handle with my arm fully extended, step up on lower shelf, and then lean back, thus using gravity to supply the force to cut instead of muscles.

When making a cut longer than 3 inches, it is critical to remember what you learned in kindergarten about using scissors. That is, don't cut all the way to the end of the blade. Stop before the end of the cutter gets to the sheet and reposition the sheet. If you don't, the sheet will be distorted as the cutter continues to shear but the sheet immediately past the end of the blade is not sheared. Try it with scissors and paper (no rocks required) and you will see the same result.

(It appears Harbor Freight may have discontinued this item. However, they still carry other similar items.)

### Tubing Notcher

This is the doofus that holds your tubing at a particular angle and then uses a hole saw to cut the fishmouth end for a "perfect" fit. The most advertised version of these is the Ol' Joint Jigger (<http://www.jointjigger.com/>, \$165). Their



ad will lead you to believe that any other tubing notcher is inferior. This may be true, but it doesn't mean the others are inadequate. I use one from Harbor Freight (Central Machinery, Harbor Freight Item 35782, \$60) which cost significantly less. I've used it several times and haven't had any trouble.

Don't try to save even more money by just using a hole saw from the hardware store mounted on a 1/4" bit--it won't work (I tried it). Since the hole saw is cutting the tube without the stabilizing presence of the center drill bit, the mandrel requires a lot of stability against side forces. The tubing notcher uses a

long, heavy bearing shaft to provide this stability. This shaft slides in plain bearings, and should be oiled during use and kept clean from dust and shavings.

The tubing notcher uses bimetal hole saws that are available at many sources, including your local Home Base or Home Depot. These hole saws screw on the mandrel with either 1/2 inch or 5/8 inch threads. The tubing clamp can hold tubes up to 2 inches in diameter. I was able to get hole saws at Home Base in diameters from 3/4 inch to 1-1/2 inches, and have seen hole saws available up to 2 inches in diameter. The minimum practical length of tubing that can be notched is around 4 to 5 inches because of the location of the tubing clamp.

When cutting, be sure to use plenty of cutting oil. Don't try to use motor oil--it doesn't have the same properties. A good cutting oil is available from Avery (Rapid Tap Cutting Fluid, 4 oz., #7016, \$3.50). Be sure to feed the saw slowly and lightly into the part. The tooth on the hole saw is generally excessively large compared to the thickness of the tubing. As such, if it is fed too fast and with too much pressure, the tooth can be forced to take too large of a bite which will result in breaking the tooth.

### Drill Bits

A discussion of drill bits could fill a book. In short, I recommend using cobalt bits with 135 degree split points for drilling aluminum and especially steel. High speed steel bits dull too quickly. The 135 degree split points reduce "walking" by the drill when starting a hole. Using cutting oil also speeds the drilling process and helps the bits last longer.

Cobalt drill bits are available in number sizes and fractional sizes from Avery. Home Base also has cobalt drills in some fractional sizes.

I am told that titanium nitride drill bits are even better than cobalt drills. I have not tried any, so I can't say. I have seen titanium nitride drill bits in fractional sizes available at Home Base.

### Files

Some operations still have to be done by hand, and for that you'll need a set of files. I'd recommend that you have at least one "normal" size mill bastard (yes, that's what it's called) file, available at your local hardware store, and a set of specialty files like Avery's Swiss Pattern Needle File set (12 pieces, #475, \$22, or 6 pieces, #476, \$11.50).

### In Summary...

I have since found that if you have some appropriate tools, steel is not that difficult to work with. In fact, the belt sander and grinder look pretty cool when making a big shower of sparks--you feel like you are really doing something. However, you'll want a good pair of leather gloves as the parts do get hot!

- Russ Erb

Lunar Maximus

Looking for something to do the day after our exciting Project Police Officer Training Field Trip? Then read this, sent in by Doug Triplat:

Everyone should mark their calendars this month -- It will be the Last Lunar Hurrah of the Millennium:

This year will be the first full moon to occur on the winter solstice, Dec. 22, commonly called the first day of winter. Since a full moon on the winter solstice occurred in conjunction with a lunar perigee (point in the moon's orbit that is closest to Earth), the moon will appear about 14% larger than it does at apogee (the point in it's elliptical orbit that is farthest from the Earth). Since the Earth is also several million miles closer to the sun at this time of the year than in the summer, sunlight striking the moon is about 7% stronger making it brighter. Also, this will be the closest perigee of the Moon this year since the moon's orbit is constantly deforming. If the weather is clear and there is a snow cover where you live, it is believed that even car headlights will be superfluous.

On December 21st, 1866 the Lakota Sioux took advantage of this combination of occurrences and staged a devastating retaliatory ambush on soldiers in the Wyoming Territory.

In layman's terms it will be a super bright full moon, much more than the usual AND it hasn't happened this way for 133 years!

Our ancestors 133 years ago saw this. Our descendents 100 plus years from now will see this again.

I'm excited, and hope someone else might find this interesting! Remember this will happen December 22, 1999.

Just thought this would be interesting, now if I can remember the date. :-)

Pulsar In Search Of A Good Home

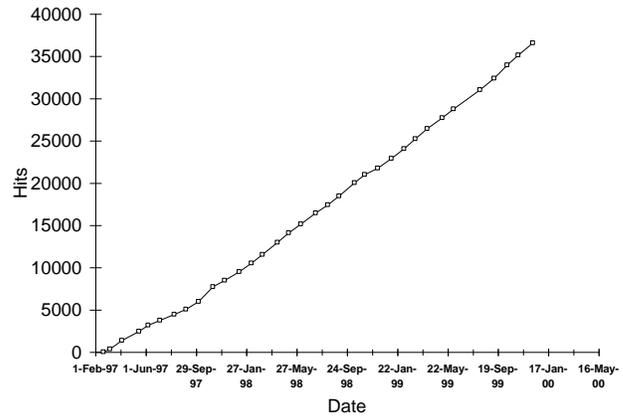
My Pulsar is ready to go to the airport for taxi tests and first flight. It's 20 ft. long and has a 24 ft. wingspan (low wing design). Is there anyone out at Fox field that has any hangar space that I could rent? If so, please contact the Chapter 1000 Vice Kommandant, George Gennuso at 661-272-6285 (day) 661-265-0333 (evenings), or pulsar1@qnet.com

Mark Your Calendars for Perpetuity!

After years of loosely floating around the calendar, your Board of Directors has finally defined the date for the Annual Scotty Horowitz Going Away Fly-In. From henceforth, the fly-in will be held on the third Saturday of May, thus ranging from 15 to 21 May.

Web Site Update

As of 11 December 1999, the hit counter stood at 36548, for a hit rate of 41 hits/day for the last month.



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

I find it interesting that our hit rate has remained fairly constant even though few updates have been made recently in the name of Bearhawk progress.

 Just a reminder that the EAA Chapter 1000 Web Site is hosted courtesy of Quantum Networking Solutions, Inc. You can find out more about Qnet at http://www.qnet.com or at 661-538-2028.

**Chapter 1000 Calendar**

**Dec 21: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Project Police Training Tour.** See newsletter for details (661) 609-0942

Jan 5: EAA Chapter 49 Monthly Meeting, 7:30 p.m., Sunnysdale School. 1233 S. Ave. J-8, Lancaster, CA. (661) 948-0646

Jan 11: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., Edwards AFB. Test Pilot School, MOL Room (661) 609-0942

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

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

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

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

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

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

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

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

**For Sale:**

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

To join Chapter 1000, send your name, address, EAA number, and \$20 dues to: EAA Chapter 1000, Gary Aldrich, 42370 61<sup>st</sup> St. W, Quartz Hill CA 93536. Membership in National EAA (\$40, 1-800-843-3612) is required.

Contact our officers by e-mail:

President Gary Aldrich: gary\_aldrich@pobox.com

Vice President George Gennuso: pulsar1@qnet.com

Secretary Miles Bowen: mbowen@cybersurfers.net

Technical Counselor Gary Sobek: gasobek@jps.net

**EAA Chapter 1000 Technical Assistants**

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<i>Engine Installation</i>		
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<i>Instrumentation and avionics requirements for VFR/IFR</i>		
<b>Gary Aldrich</b>	gary_aldrich@pobox.com	609-0942

Inputs for the newsletter or any comments can be sent to Russ Erb, 661-258-6335, by e-mail to [erbman@compuserve.com](mailto: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:**  
**PROJECT POLICE OFFICER TRAINING**  
**FIELD TRIP, 21 DECEMBER 1999**  
**NOTES ON STEEL WORKING TOOLS**  
**TECHNICAL ASSISTANTS NAMED**

