

# THE LEADING EDGE

## NEWSLETTER OF MUROC EAA CHAPTER 1000

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

<b>President</b>	<b>Gary Aldrich</b>	<b>661-609-0942</b>
<b>Vice-President</b>	<b>Hellmuth Steinlin</b>	<b>760-963-5445</b>
<b>Secretary</b>	<b>Kent Troxel</b>	<b>661-947-2647</b>
<b>Treasurer</b>	<b>George Gennuso</b>	<b>661-265-0333</b>
<b>Newsletter Editor</b>	<b>Russ Erb</b>	<b>661-256-3806</b>

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

September 2016

*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:



**Oratex Covering Demonstration**  
**Oshkosh 2016 Report**  
**Tuki's Taco Tuesday!**  
**Tuesday, 20 September 2016**  
**Bearhawk Manor**  
**1730 hrs (5:30 PM Civilian Time)**  
**Rosamond, CA**

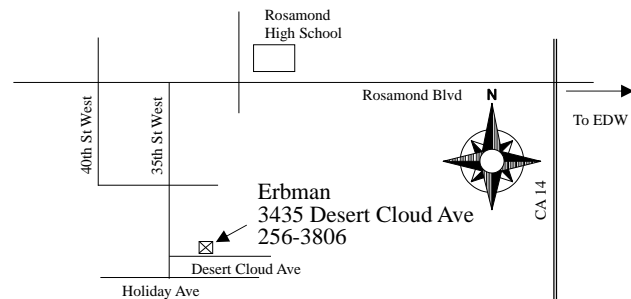
This month brings you a trifecta of sport aviation excitement. First up, our **Vice Kommandant** has arranged a demonstration of the **Oratex Covering System** which he learned about during his Oshkosh trip. The Oratex covering system is a new type of fabric covering for Experimental Amateur Built aircraft. From their web site, "Oratex represents a major breakthrough in aircraft fabric covering systems. No solvents, no paint, no stench, no exposure to toxic chemicals of any kind. Just glue it, shrink it, and fly!" The demonstration will take place in the very workshop where the **Combat Bearhawk** was built. (Most people would just call it **Erbman's** garage.) Unlike a previously attempted venue, the workshop is air conditioned.

After an exciting demonstration, we will move inside Bearhawk Manor where the big-screen TV (not quite as big as the late **High Cay Jumbotron**) will be available for showing pictures and presentations by anyone who attended **AirVenture 2016**. Even though **Opie** went to Oshkosh, he has taken extreme measures to avoid making a presentation, namely moving to Texas. We're sure that

**Joe Ford** will have a very interesting and informative presentation. (That gasping sound you just heard was Joe realizing that he was expected to have something prepared.)

For the third part of the trifecta, our **Schmoozemistress Tuki** has prepared for you **Tuki's Taco Tuesday**. This spread was once described by **Opie** as being far better than anything **Coach's** ever produced. You'll be glad you came! (Sorry, **Opie**, that's what happens to you when you move away)

If the temperatures are warmer than comfortable and the garage door is not open, plan to come in the side door of the garage. Look for the signs. A convenient map and address for your navigation system are provided below.



### Last Month's Meeting

**EAA Chapter 1000**  
**Jethawk Stadium "The Hangar"**  
**Lancaster, CA**  
**23 August 2016**  
**Gary Aldrich, Presiding**

The August meeting was held at Jethawk Stadium in Lancaster, CA with 7 members in attendance.

Once again, our thanks go to the **City of Lancaster** for the use of their Skybox as the hometown Lancaster Jethawks, Class A affiliate of the Houston Astro's, hosted the High Desert (Adelanto) Mavericks. The Jethawks are in 1<sup>st</sup> place in the California League (South) as they head into playoffs. Unfortunately, there was no joy in Lancaster this particular night as the Mavericks defeated the 'Hawks 10 to 4.



Close examination of the photo below will reveal the **Kommandant's** bandages from recent facial reconstruction resulting from what he claims was a bar fight. He indicated that he is on the nose donor waiting list in case the surgery turns out to be less than hoped for.



**Jimmy D** received a text during the game from **Doug** and **Gail Dodson** expressing regrets for their absence. The Dodson's recently vacated their **High Cay Estate** at Rosamond Skypark for new digs in Texas. A recent exchange of email with Doug will give their current status:

"We don't move in until 9 September or so. So, we did what all red-blooded American kids do when they don't have a place to live... move in with Mom & Dad! We are staying in Waco with my parents. We are living the redneck lifestyle...extra cars in the driveway, 4 dogs, 2 cats and grandma in a single family dwelling!"

All attendee's supported the home team by sampling the ballpark faire. The **Kommandant** and I enjoyed tasty BBQ brisket sandwiches. I had a Stella while the **Kommandant** sampled the local Kinetic Brewery ales. **Erbdude** had a chili cheese dog, so we insisted he sit downwind of us for the rest of the evening. **Jimmy D** had a Kinetic IPA, which we know tastes like a "homeless man's derriere" according to **George "the Knife" Gennuso**. Speaking of the **Knife**, also known as the "ball magnet", George was unable to attend, so all were

safe from foul balls. Not so as in previous outings where structural damage was incurred (see photo below).



**Joe "Wino" Ford** downed two bottles of red, although he insisted that I say they were "individual serving" size. However, I remain unconvinced of this as the only task given to Joe was to arrange with park personnel to have our attendance recognized on the big TV on the scoreboard, which he managed to bungle. If you could actually read the photo of this (blame the Apple I5 night photo limitation), it reads: **Edwards Experimental Aircraft Association Chapter 100**. As a result, we now have to change our chapter designation from **1000** to **100** with EAA HQ.





While we were visited by local mascot "**Kaboom**", it was a far cry from the previous visit by **Buzz Aldrin** of **Dancing with the Stars**. Oh, I'm supposed to say that he was also an astronaut and the 2<sup>nd</sup> man to walk on the moon.



At the conclusion of the game and a disappointing loss, the **Kommandant** could not bring himself to declare "**Victory!**". Imbibement of several beers may have also contributed to this.

Most of this is true.

### - Kent Troxel

Minister of Propaganda

Chapter 1000 of the Experimental Aircraft Association of these United States of America and Occupied Territories  
*"We have more zeroes in our chapter than any other!" (or at least we used to!)*

---

### Kommandant's Korner

It sure seems like I was just writing about the exciting summer flying season and now it's almost over! Fear not, though, as the Antelope Valley slides into



Fall there are always excellent opportunities to aviate. The seasonal transition of the weather patterns often results in days that are moderate in temperature with mild or non-existent winds and clear blue skies. These are the days we extol to our friends and relatives in other parts of the country as "typical AV weather...70 and sunny...why doesn't everyone live here?" How quickly we forget the wild, gusty crosswinds and convective turbulence we see more often in our flying season. The slightly cooler temperatures leading up to "official" Fall make for pleasant morning flights and also encourage folks to attend the remaining local aviation events. By the time you read this, you will either have attended or missed attending the **Fox Airport Association Pancake Breakfast** (10 September). This laid back event at our local field is always fun. Good

food, good camaraderie, and interesting air machines to look at. Don't look for the Fightin' Skywagon on the show line, though, as we will be leaving (by car) that day for our annual pilgrimage to the beach in Carlsbad.

Next on the aviation calendar is the regional **AOPA Fly-in** on September 30 and October 1 at **Prescott, Arizona** (KPRC). While not as extensive an event as the previous national "EXPO" events held bi-annually on the west coast by AOPA, it has been reported as fun and educational with displays of new aircraft and pilot gear, aircraft demonstrations, and learning opportunities. Prescott is only a bit over two hours in the VC-180.

Unfortunately, previous commitments will prevent **Mrs. Kommandant** and me from attending.

(<http://www.aopa.org/community/events/aopa-fly-ins/2016-aopa-fly-ins/prescott>)

If you would rather not travel as far as PRC there is the "Aviation Expo" running 20-22 October at Palm Springs International (KPSP) (<http://aviation-xpo.com/>). It is sponsored by Flying Magazine and Scheyden Eyewear and boasts 300 aviation vendors, many static displays, and seminars for pilots. The event sounds for all the world like a reincarnation of the old-style AOPA Expo that was often held at PSP. I believe **Anne** and I will be trying to attend this one as we enjoy the short flight to PSP in the milder fall weather. She's also in the market for a new headset and we're hoping to survey the current offerings of the vendors. This might even be a good Chapter fly-out event!

Finally, October 29 brings the annual reprise of the "**Wings, Wheels, and Chili**" event sponsored by The Rotary Club of Lancaster at Fox Airfield (KWJF). The **Skywagon** should be on display that day and I encourage other Chapter members with airplanes or cool cars to come on out as well. There are prizes for people's favorite cars and planes and a great Chili cookoff.

The info on this one was in last month's 'Edge. So, as you can see, there are still a number of enjoyable aviation adventures left in 2016 and I hope everyone can take in one or more of them.

Fly Safe and Check 6,

### - Gary Aldrich

Kommanding

---

### Determining Unusable Fuel...or Not...

If there is one thing that we know for sure, it is that when measuring something, uncertainties will conspire against us to make it as hard as possible to get a good answer. The more complicated the measurement, the more the uncertainties will conspire against you.

#### The Task

Since my Bearhawk was scratch built and was one of the earlier examples, there was no information available about how much of the fuel tank capacity was unusable. That is, how much of the dregs in the bottom of the tank would be trapped and unable to make it out of the tank and

down the fuel lines to the engine? Hopefully it is a small amount, but it would be good to know if you couldn't count on that last five gallons in the tank, especially if it showed up on the fuel gauge.

While I was updating my POH to cover the new ADS-B installation and other changes, I noticed that I still hadn't determined what the unusable fuel quantity was, or conversely, what the usable fuel quantity was.

### The Interim Solution

When I first built the Bearhawk, I measured the total capacity of the fuel tanks. Both of them measured at 25.5 gallons. With nothing else to go on, I decided that by looking at the tank geometry, 0.5 gallons would be a reasonable value for unusable fuel. That would mean that the total usable fuel would be 50 gallons, which was a very nice round number. That's what I loaded into the fuel remaining display, and it has worked just fine for seven years.

### The Procedure

The basic procedure would be to drain each tank, then refill the tank, measuring how much fuel was added. The difference between the total tank capacity and the amount added would be the unusable fuel. What could be so hard about that?

### Getting the Right Attitude

As for draining the tank, I had decided years ago that I was not interested in doing it the way **Opie** would suggest. Opie would say to select one tank, fly around until the engine quit, swap to the other tank and hope the engine would restart. It seemed there should be a way to empty the tank that didn't include creating a flight safety event in the process.

The only thing gained by being in flight was the difference in pitch attitude. It seemed that a flight pitch attitude could be attained in the hangar simply by jacking up the tail like we did for the weight and balance. Jacking the tail up puts the airplane in a less stable position than it is with the tail wheel on the ground. Since I would be handling avgas, I wanted to do it with the hangar door open, such that any escaping vapors would disperse without causing a health or fire hazard. When I first planned to do this procedure, the winds were blowing around 20 knots anytime I was available, and I didn't want the wind whipping around inside the hangar while the tail was raised and prone to catastrophically falling to the ground or causing some other form of major damage. Thus, I had to wait a couple of weeks until I was available to do it in the morning when the winds were calm.

Once the tail was raised, the tail wheel was supported on sawhorses and blocks, but the shop crane was left engaged. Yes, hydraulic cylinders may leak down with time, but leaving the crane engaged was insurance against a repeat of last year's fun when the airplane fell down.



**Tail raised to fuselage level position (nominally flight attitude)**



**Shop crane to do the heavy lifting**



**Close-up of lifting fixture attached to fuselage handles.**

Notice the slight buckling in the fabric caused by flexing of the longeron because the front of the handle is not located at a cluster joint





**Tailwheel supported on sawhorses and blocks**

### **Draining the Tank**

The key to getting the fuel tank down to unusable fuel was to drain it in the same fashion that the engine drains it. While that could be accomplished by disconnecting the fuel line at the carburetor, such a process would be messy and could possibly cause damage. A much simpler method would be to drain the fuel through the gascolator drain. The fuel would still come out of the tank through the same fuel lines as it would in flight.

One method that would certainly not be acceptable would be to drain the tanks through the sump drains. This is a different path out of the tank. If the sump drain is truly at the lowest point in the tank, the resulting fuel left in the tank would be less than the amount left when draining through the fuel lines.

Long before starting this process I flew the airplane until the tanks were at least down to half full. This reduced the time necessary to drain the fuel and the number of gas cans necessary to contain the drained fuel. Additionally, I know from previous experience that if the tanks are full with the tail raised and no dynamic pressure on the vent, some fuel will likely start draining out of the tank vent. This can be avoided by having the tanks less than full.

I borrowed four 5-gallon gas cans from **Dave Vanhoy**, which I figured would be sufficient with the one can I had. A gas can was placed under the gascolator with a long funnel to catch the flow of avgas. A baggage scale was placed under the gas can. A tare weight was measured with the empty can. Twenty five pounds (corresponding to 4.2 gallons at 6 pounds/gallon) were added to the tare weight to give the weight at which filling would be stopped. This procedure was necessary because there was no easy, reliable method to see how much gas was in the can so that it could be stopped before it overflowed and made an expensive mess.



**Gas can with funnel on baggage scale**

While draining, the fuel selector was set to LEFT or RIGHT such that only the tank of interest was drained. After the tank was drained, the gascolator drain was closed.

### **Refilling the Tank**

The initial filling of the tank was done with the avgas that was just drained. The avgas was poured back into the tank using a "Mr. Funnel" (Aircraft Spruce 05-00026), which has a filter which separates water and dirt from the avgas. The filter material looks very much like the same material that is in my gascolator. The funnel also has a sump to retain the filtered dirt and water. The filter has a large area, such that the funnel still flows very fast.

Accurately measuring volume is difficult for anything beyond a cup or two. In this case, it was much easier to measure weight and calculate volume. Prior to pouring, each gas can was weighed on the baggage scale. After pouring through Mr. Funnel, the gas can tare weight was measured. The difference, the net weight, was divided by six to determine the volume in gallons.

After pouring all of the avgas back into the tank, the dregs in Mr. Funnel were added back to the last gas can as part of the tare weight, since that fuel did not make it into the tank.

After finishing the RIGHT tank, the process was repeated on the LEFT tank.

After draining and filling both tanks, the tail was lowered back to the ground and the airplane was pushed out of the hangar. The airplane was then taxied to the fuel pump on the LEFT tank. Prior to taxi, the fuel remaining on the engine monitor was noted. After taxi, the fuel remaining was noted again, and the difference was the taxi fuel, which was subtracted from the fuel quantity in the LEFT tank. In this case, the taxi fuel was 0.1 gallon.

Using the fuel pump, each tank was filled to the normal fill line. The amount of fuel added to each tank was recorded from the pump. The fuel quantity added was added to the previous fuel quantity in each tank. This amount was then subtracted from the tank volume (25.5 gallons) to yield the amount of unusable fuel.

### So Whadya Get? Huh? Huh?

After all of that fuel handling, the careful weighing, and spreadsheet building, the unusable fuel for the RIGHT tank was calculated to be **0.8** gallons. Hmmph. Not that bad. A little more than I had guessed, but still a reasonable number.

For the LEFT tank, the identical process yielded a result for unusable fuel quantity of **-0.5** gallons(!). SAY WHAT!? I know I'm good, but not even I can stuff 26 gallons in a 25.5 gallon tank—at least not without making a sizeable mess!

### Are You Sure You Know What's Going On?

Actually I'm quite sure that there are some parts that I don't know what is going on. One of the hard-learned lessons in any experimental method is that no measurement is exact. Each measurement will be wrong by some small amount, and you can't do anything about it. If you could, it wouldn't be called uncertainty. The best you can do is get a better measurement method which will reduce the size of the uncertainty, but it won't eliminate it.

Mathematically, you will always run into problems when subtracting two large numbers to find a small number, such as in this case  $25.50 - 25.35 = 0.15$ . When the desired result is on the same order of magnitude as the uncertainties in the measurements, all sorts of heck can break loose in the results.

So where do I think the sources of uncertainty were? Let's make a list.

**Baggage Scale.** Sure, we always look to our instruments as sources of uncertainty. However, I don't think this is the culprit in this case. The scale has a resolution of 2 ounces. The precision seems to be better than 2 ounces, since I would put the same thing on the scale multiple times and get the same readout each time. Also, assuming a normal distribution for any precision error, this would not explain a vastly different result of several pounds between sides.

**Spillage.** This is not likely a culprit either, since the only spill I made while filling a tank was estimated at about half a cup, and that was on the RIGHT tank.

**Evaporation.** Evaporation is very small, or we would notice the fuel lost between flights to evaporation. Also this would not explain the large difference between sides.

**Fuel Totalizer.** This was only used to measure taxi fuel. The fuel totalizer has shown itself to be reliable time and again when comparing the fuel used to fuel added. Also, this value was 0.1 gallons from the left tank, which is smaller than the apparent error in the left tank.

**Fuel Tank Capacity.** I'm confident that 25.5 gallons is a good number. The tanks were built to be the same size, and when the volume was measured originally the results were the same within 0.1 gallon.

**Roll Attitude (Wings Level).** Ah, at last! A culprit I can believe in! I must admit that I did not think to carefully level the wings side to side during this test. The hangar floor can be assumed level. Friction in the shock struts can leave one extended more than the other, which can cause a slight roll angle. However, the real issue is

that the pavement in front of the Rosamond Skypark gas pump is not level. It's not hard to see which way it tilts. The position I normally park the airplane for refueling, with the tail pointed at the pump, results in a degree or two of right roll. Because the fuel tanks are long and skinny spanwise, filling to the same mark with a slight roll angle can make a big difference in the apparent volume of the tank. With a right roll, the filler port of the LEFT tank will be higher than normal relative to the rest of the tank. As a result, the LEFT tank will take slightly more fuel, which will make the apparent unusable fuel less, or even negative. The filler port on the RIGHT tank will be lower than normal relative to the rest of the tank. This tank will take slightly less fuel, which will make the apparent unusable fuel greater. This analysis matches the experimental data.

### Lessons Learned

Three steps were taken to improve safety without having to be "relearned" after something went wrong. One was to operate with the hangar door open so that fuel vapor could not accumulate to concentrations that were either unhealthy to breath or combustible. The second was to do the test during calm winds so that the airplane would not be blown around and possibly fall. The third was to wear latex gloves to minimize avgas contact with skin. Not only is it easier to clean up (i.e. remove the gloves) but there is less health risk.

Now for the stuff I could have planned better for.

**Spillage.** There will be spillage. I don't care how careful you are, the probability of spillage is high enough that it is going to happen eventually, especially when handling this much fuel and this many containers. Accept that and plan to mitigate the result. Have a roll of paper towels on hand and a place to let the avgas evaporate from them safely before throwing them away.

**Venting.** Unlike the gas cans of years past, these plastic cans are not vented. If used as the manufacturer intended, the can is vented through the pour spout back into the same hole the gas is coming out of. I had removed the pour spout for better access to the can. The funnel I was using has a very shallow taper, and can jam into the gas can in such a way that it makes a very nice seal. The outlet at the bottom of the funnel is very small, maybe 3/8 inch diameter. If the flow rate from the gascolator is high enough to completely fill the outlet of the funnel, the gas can will pressurize and stop any further flow into the can. At that point, the funnel will just fill up until it overflows on the floor.

(The embarrassing part of this story is that I had filled five cans with no problem. At this point I envisioned this problem as a possibility in my mind, but then decided that since I had been through five cans without it happening it wouldn't be a problem. About a minute later it happened. Ugh!)

The solution is very simple, and one that I've used many times before. Stick a piece of welding rod or something else between the funnel and the gas can so that the seal cannot form. This small gap will let the air out of

the can so it will not pressurize. I recommend bending the top of the welding rod such that it won't fall in the can.

**Don't Overfill the Can Before Pouring.** If you've ever poured milk on your cereal from a newly opened gallon jug, you'll understand this problem. It's tough to control the pour when the liquid starts coming out while still eight inches above the receptacle. Since I couldn't raise the funnel up to the gas can like I do with my cereal bowl, I found that it was best to use half-filled gas cans to pour into Mr. Funnel. Another option could have been to use a better pour spout.

**Electronics Time Out.** As mentioned before, I used the scale to determine when to stop filling the gas can so it wouldn't overflow. The can started out around 3 pounds and was filled until it was 28 pounds. However, somewhere around 20 pounds, the battery powered scale would decide that it had been on long enough and turned itself off. If I just turned the scale back on, it would re-zero itself and show zero pounds, about 20 pounds off. Therefore I had to close the gascolator drain, remove the gas can, turn the scale on, replace the gas can, and open the drain.

### So What's the Final Answer?

Short of spending another four hours to repeat the test more carefully, can we get a meaningful result out of these obviously flawed data? Considering that the expected source of error was filling the tanks when the wings were not level, and that the roll angle was very small, we can safely assume that the errors are linear. If we further assume that the amount of extra fuel in the left tank was equal to reduction in the amount in the right tank, we could simply average the results to find what the actual unusable fuel in each tank would be. In this case,  $(0.8 + (-0.5))/2$  would be 0.15 gallons of unusable fuel in each tank.

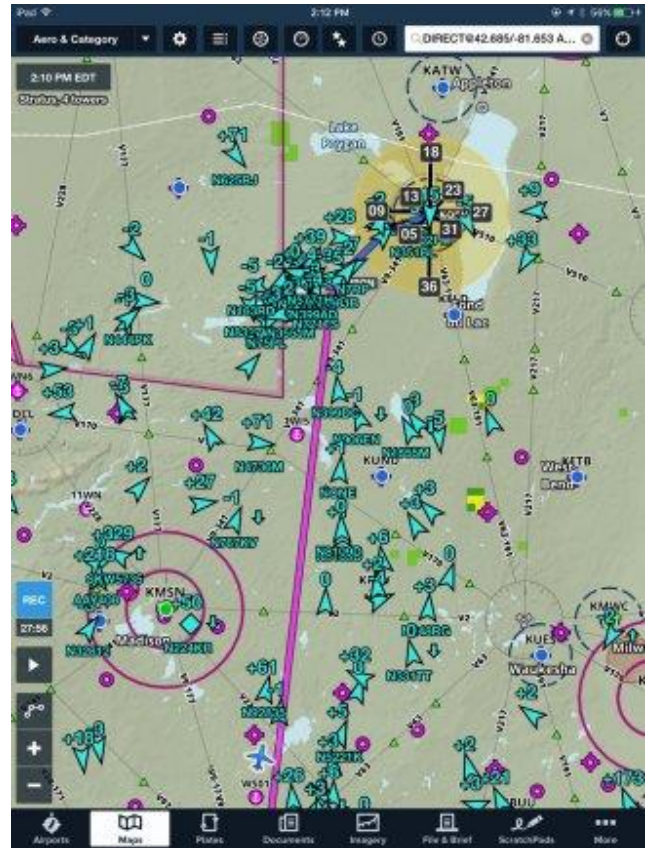
This amount is very small, which increases confidence that the fuel system is well designed. From a practical standpoint, the original value of 0.5 gallons unusable is still reasonable, and the round number of 50 gallons is somehow satisfying. The difference of 0.7 gallons total equates to about four minutes of engine run time at cruise power. **Therefore, I will continue to operate the airplane figuring 50 gallons of usable fuel and 1 gallon of unusable fuel.** I find it quite entertaining that I got the same result as when I just applied "engineering judgement". (That's what engineers call it when they guess.)

Finally, I watched the fuel sight gauges as I was draining the fuel. The fuel level disappeared from the sight gauge minutes before the fuel was completely drained. If you are still airborne when the fuel has disappeared from the sight gauges, you better have superior skill, because your judgment has failed you.

- Russ Erb

### Hmmm, Where's The Declutter Button?

AvWeb ran this picture with one of their stories. Apparently somebody made a screen capture of their Foreflight app as they were approaching Oshkosh while the Fisk arrival was active.



Is it any wonder that Chicago center refuses "flight following" requests during Oshkosh week?

On further investigation, this screen capture probably came from someone at Foreflight. Note in the upper left corner the map selected is "Aero & Category". The "Aero" or aeronautical chart is something new in Foreflight 8, and this picture was published over a month before Foreflight version 8 was released. Hmmm...



### Web Site Update



Just a reminder that the EAA Chapter 1000 Web Site is hosted courtesy of Quantum Networking Solutions, Inc.

You can find out more about Qnet at <http://www.qnet.com> or at 661-538-2028.



**Chapter 1000 Calendar**

Sep 13: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

**Sep 20: EAA Chapter 1000 Monthly Meeting**, 5:30 p.m., Bearhawk Manor, 3435 Desert Cloud Ave, Rosamond CA. (661) 609-0942

Oct 11: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

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

Nov 8: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

**Nov TBA: EAA Chapter 1000 Monthly Meeting**, 6:30 p.m., Flying Dog Ranch, 4400 Knox Ave, Rosamond CA. (661) 609-0942

Dec 13: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

**Dec 20: EAA Chapter 1000 Festivus Etc Celebration**, 6:00 p.m., Kommandant's Quarters, 42370 61st Street West, Quartz Hill CA. (661) 609-0942

Jan 10: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

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

Feb 14: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

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

Mar 14: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

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

To join Chapter 1000, send your name, address, EAA number, and \$20 dues to: EAA Chapter 1000, Doug Dodson, 4431 Knox Ave, Rosamond CA 93560-6428. Membership in National EAA (\$40, 1-800-843-3612) is required.

Contact our officers by e-mail:

President/Flight Advisor Gary Aldrich: [gary.aldrich@pobox.com](mailto:gary.aldrich@pobox.com)

Vice President Hellmuth Steinlin: [hellmuthsteinlin@hotmail.com](mailto:hellmuthsteinlin@hotmail.com)

Secretary Kent Troxel: [kenttroxel@sbcglobal.net](mailto:kenttroxel@sbcglobal.net)

Treasurer George Gennuso: [pulsar1@sbcglobal.net](mailto:pulsar1@sbcglobal.net)

**EAA Chapter 1000 Technical Assistants**

Composite Construction		
George Gennuso	<a href="mailto:pulsar1@sbcglobal.net">pulsar1@sbcglobal.net</a>	661-265-0333
Brian Martinez	<a href="mailto:brianmmartinez@aol.com">brianmmartinez@aol.com</a>	661-943-5379
Wood Construction		
Bob Waldmiller	<a href="mailto:bob@waldmiller.com">bob@waldmiller.com</a>	661-256-0932
Aluminum Sheet Metal Construction		
Bill Irvine	<a href="mailto:wgirvine@yahoo.com">wgirvine@yahoo.com</a>	661-948-9310
Russ Erb	<a href="mailto:erbman@pobox.com">erbman@pobox.com</a>	661-256-3806
Welding/Welded Steel Tube Construction		
Russ Erb	<a href="mailto:erbman@pobox.com">erbman@pobox.com</a>	661-256-3806
Engine Installation		
Russ Erb	<a href="mailto:erbman@pobox.com">erbman@pobox.com</a>	661-256-3806
Electrical Systems		
Russ Erb	<a href="mailto:erbman@pobox.com">erbman@pobox.com</a>	661-256-3806
Instrumentation and avionics requirements for VFR/IFR		
Gary Aldrich	<a href="mailto:gary.aldrich@pobox.com">gary.aldrich@pobox.com</a>	661-609-0942

Inputs for the newsletter or any comments can be sent to Russ Erb, 661-256-3806, by e-mail to [erbman@pobox.com](mailto:erbman@pobox.com)

From the Project Police legal section: As you probably suspected, contents of The Leading Edge are the viewpoints of the authors. No claim is made and no liability is assumed, expressed or implied as to the technical accuracy or safety of the material presented. The viewpoints expressed are not necessarily those of Chapter 1000 or the Experimental Aircraft Association. Project Police reports are printed as they are received, with no attempt made to determine if they contain the minimum daily allowance of truth. So there!

**THE LEADING EDGE****MUROC EAA CHAPTER 1000 NEWSLETTER**

**C/O Russ Erb**

**3435 Desert Cloud Ave**

**Rosamond CA 93560-7692**

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

**ADDRESS SERVICE REQUESTED**

**THIS MONTH'S HIGHLIGHTS:**

**ORATEX COVERING DEMO 20 SEP @ BEARHAWK MANOR**

**OSHKOSH REPORT/TUKI'S TACO TUESDAY**

**JOE FORD CHANGES OUR CHAPTER NUMBER**

**DETERMINING UNUSABLE FUEL**

