

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>

March 2021

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 **Virtual** Meeting:



St. Patrick's Day Eve Celebration

Tuesday, 16 March 2021
1700 hrs (5:00 PM Civilian Time)
Your COVID-19 Defense Bunker
Undisclosed Location, USA

It's not that EAA Chapter 1000 has a significant reason to celebrate St. Patrick's Day, even if the thought of free green beer sets **Opie's** liver a-twitter. It's just the way the calendar falls this year. It follows on the heels of The Ides of March, of which legend tells us to "beware". The real holiday for celebrating is the day prior to that on 3/14, known throughout the STEM community as Pi day, or π day. Chocolate cream π is an excellent choice for celebrating.

This month's gathering in Zoomland will be heavy on the socializing. We will meet around 1700 hours for **schmoozing**, though once again you will have to provide your own schmooze snacks. You can ask **Stormy** about how **Stoney Broke Manor** survived record cold temperatures (while he was in Florida), only to get zapped by lightning, taking out about half of the control electronics in the house. Or you can ask the **Kommandant** about progress on building the new museum outside the West Gate, and the possibility of holding our meetings there in a post-COVID world.

Libations are allowed, as currently the Peoples' Republik of Kalifornia has not identified ZUI (Zooming Under the Influence) as a chargeable offense.

Members of the Dets: We're on Zoom again, so you get to participate too. Maybe **Kanard** has found a better solution for Internet access.

When we get done talking to ourselves, you may visit the drive-through of your favorite quick-service restaurant.

Details and links to join the Zoom meeting will be sent by e-mail to the same distribution list no later than Monday, 15 March. If you've never Zoomed before, you have some time to figure it out. You'll need at minimum a smartphone or a computer with speakers and a webcam. Contact **Erbman** or your local teenager if you need help, but don't wait until the day of the meeting to start.

Once again, you don't need to worry about contacting **Erbman** to arrange base access because you can't get on the base anyway.

- **Erbman**

Subbing for the **Vice Kommandant**



Your dues are due now!
\$20 to Knife
See back of newsletter for address

If you prefer, you can pay online by **PayPal**® at the Join/Pay Dues link on the [EAA Chapter 1000 web site](#).

You may also qualify for the government sponsored EAA Chapter 1000 "Free Dues" program.¹

¹ Simply write your name on a government printed "Free Dues" coupon and hand it to any chapter officer. "Free Dues" coupons are available at any bank, ATM, and many businesses. Ask for it by the secret code name "Twenty Dollar Bill."

Last Month's Meeting

EAA Chapter 1000

Your COVID-19 Defense Bunker

Zoomland, USA

16 February 2021

Gary Aldrich, Presiding

Last month a small but hardy group of *Project Police Officers* gathered in Zoomland for some socializing and the opportunity to hear **Erbman** yammer on for an hour or so.

In keeping with the news of the day, we asked **Opie** and **Opus** about their experiences when North Dakota weather came to Texas. **Opie** showed pictures of his snow slide. One of the great things about meeting in Zoomland is the ability to see our *PPOs* in the Dets.

After the **Kommandant** was summoned to the meeting, we set about getting to the program. Our program was titled "What Were They Thinking? The Douglas XB-42 Mixmaster" and was presented by **Erbman**, with historian **Mike Machat** present for backup.

Rather than just a lecture about design and the use of aviation art in selling a new concept to the Air Force, this presentation included quiz questions in the form of Zoom polls, allowing all of the *PPOs* to participate.

If you were like **Stormy** and thought you had some good excuse for not attending (really, I hear there is cellular Internet service available along I-20 now), these quizzes are reproduced for you here. If you read the whole newsletter, you may even find the answer key.



What my Mother thought of when she heard
"Mixmaster"



1. Where are the engines located?
 - a. Aft of the fuselage in front of the props
 - b. Buried in wings
 - c. Top of fuselage behind the cockpit
 - d. In the maintenance engine shop
2. How are the engines connected to the props?
 - a. A series of P-39 extension shafts
 - b. A single long shaft
 - c. A flexible shaft
 - d. Engine drives an alternator that drives an electric motor



3. What is the benefit of coaxial pusher props? (multiple correct answers)
 - a. Low drag due to lack of engine nacelles
 - b. No yaw moment if an engine fails
 - c. Lower drag since airframe is not in high velocity slipstream
 - d. Provides a maintenance full employment program
4. Why the cruciform tail?
 - a. Reduces the dihedral effect of the mid wing
 - b. The pusher prop location requires additional directional stability
 - c. Ventral fin protects from ground prop strike
 - d. Reduces left turning tendency from slipstream



5. How was the Double Bubble Canopy received?
- Pilots loved it, since bomber pilots could live out their fighter pilot dreams
 - Pilots hated it, since communication was harder
 - It was replaced with a single cockpit to reduce build costs
 - It was replaced with a single cockpit to reduce interference drag



6. How did the main gear retract?
- Forward into the fuselage
 - Up into the wings
 - Rearward into the fuselage
 - Jettisoned after takeoff
7. Where did the Tail Gunner sit?
- In the aft fuselage under the propeller shafts
 - Between the pilot and copilot
 - Next to the bombardier
 - In the copilot seat
8. What did the XB-42 lead to? (multiple correct answers)
- XB-42A with jet pods for higher speed
 - XB-43 all jet bomber
 - Douglas DC-8 airliner
 - Prescott Pusher

9. So why didn't the XB-42 go into production? (multiple correct answers)

- It was not significantly better than other prop driven bombers in performance or reliability
- Rising development costs caused the Air Force to cancel the contract
- Just like the XR-12, it was cast aside in the transition to jets
- Lost the flyoff competition to the North American B-45 Tornado

If now you are really feeling depressed about missing the meeting, or if you were there and want to relive the experience, you can do that at <https://youtu.be/L3iyGHK6Tw4>.

Most of this is true.

- Russ "Erbman" Erb

Emergency Backup 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!"

Kommandant's Korner

How's everybody's "new normal" life going? Here in the most restrictive State, and the most restrictive County, therein,



Mrs. Kommandant and I

have been struggling to keep our spirits up amid the depressing news of small businesses shuttering forever, rising gas prices, and word from the Centers for Democratic Control and Propaganda (CDC) that despite the exponential increase in vaccinations and the dramatic decreases in effects of the disease there is "no end in sight" when it comes to face coverings, distancing, and travel restrictions. Makes me kinda wonder why we worked so hard to get us an "experimental" vaccine.

Of course, with general aviation being deemed "essential" by the California overlords we at least get to exercise our passion somewhat. I have continued to support the glider flight training enterprise at L94 by performing duties on both ends of the tow rope. Conversely, as the bulk of missions for the **Fightin' Skywagon** revolve around travel to new and interesting places and/or neat dining adventures, the VC-180 has spent most of the lockdown locked in hangar 703. We've also discovered another advantage to residing in far-northern LA County in that it's a relatively short drive to communities that are interpreting (ignoring?) California guidelines/mandates as they relate to dining indoors. With the winter weather still extant for a couple of more months it is refreshing to at least enjoy a meal in a normal (there's that word again) atmosphere with friends and not have to sit at Costco tables and eat out of styrofoam containers.

As for the rest of the aviation world (outside of the left coast) there is hope that large aviation gatherings are on the way back. Both **Sun 'n Fun** (13-18 Apr) and **AirVenture** (26 Jul-1 Aug) are pressing forward with event plans...albeit with some "recommended" COVID measures. The Navy's **Blue Angels** will be showcasing their new rides for the first time in public at the Lakeland, FL event. The new **F/A-18 Super Hornets** replace the legacy version and the switch in airframe is only the second in the 35 years since they parked their **A-4F Skyhawk IIs** (often called the "Scooter" or "Heinemann's Hotrod"). I, for one, have reserved lodging at the University of Wisconsin, Oshkosh in hopes that the pandemic will continue to fizzle out, common sense will trump hysteria, and another long-standing Sport Aviation tradition will return.

In the meantime, I've spent a lot of time surfing the interweb, seeking retail therapy or visiting sites where I can live vicariously in an unrestricted aviation world. One of the best aviation sites around is that of our own **PPO** and aviation legend, **Mike Machat**. His YouTube channel is, in a word, **AWESOME**. His professionally constructed videos and knowledgeable presentations are entertaining and educational. While we in the "Chapter with the Most Zeroes" have benefitted from Mike's aviation expertise in presentations at chapter events (or on Zoom), the new series is a must see, even if you think you're familiar with the topic of the video. You will learn something new, I guarantee it! Check them out. He's cranking out new ones on nearly a daily basis. So, I guess I will get back to surfing. Until we meet again, in person or virtually...



Fly safe (if you can), and Check 6

- Gary Aldrich
Kommanding

Where Have All The Fluorescent Tubes Gone?

"Long time passing..."

Back in 2002 I moved into **Bearhawk Manor**. The primary requirement in selecting this house was that it have a three car garage, which would be used as the **Bearhawk** factory. In order to accomplish this, I knew I

would need more light in the workshop than the single 60 watt incandescent bulb provided by the builder.

So just how much light do you need in a workshop? My good friend **budd davisson** once wrote on workshop lighting, saying something like "Your workshop should be bright enough that visitors reach for their sunglasses." Setting out to achieve this goal, I would eventually install seven 8-foot fluorescent fixtures with two F96T12 75 watt fluorescent tubes in each fixture, and that only covered the part of the workshop that the garage doors didn't cover when opened. For that area I used four "Shop Light" fixtures that I had brought from my previous workshops. Each "Shop Light" fixture has two 4-foot fluorescent tubes.

I figured that my choice of lighting was future-proof, because for all of my life that's how large areas were lit. You saw them in K-Mart. You saw a lot more of them in Wal-Mart. Commercial and industrial spaces were lit by fluorescents. Most hangars had some form of fluorescent light fixture in them. The current **Bearhawk** hangar has at least six such fixtures.

How could I go wrong with fluorescent fixtures? I have always been told that they were more efficient than incandescent light bulbs by creating more lumens per watt of energy and giving off way less heat.

The fallacies in my reasoning started to show as I drove my Tesla to Home Depot recently to buy replacement fluorescent tubes for the two in the garage that were failing. Not only were the bulbs "out of stock" but they were also unavailable to order online. A secondary pass through Lowe's yielded the same results.

The Drive For Greater Efficiency

It turns out that my reasoning was as solid as thinking that we would always have gasoline powered cars because we always had. This from a guy in a Tesla.

Something like ten years ago there was a push to abandon incandescent bulbs in favor of compact fluorescent (CFL) bulbs and eventually LED bulbs. This was driven mostly by energy efficiency concerns. I remember in 2010 or 2011 replacing the 18 60 watt incandescent bulbs in my bathroom with CFLs, which dropped the temperature in the bathroom by at least 10°F. Later these would be replaced with LED bulbs. Now you can't even find incandescent bulbs in the stores. According to

<https://insights.regencylighting.com/california-light-bulb-ban#:~:text=If%20you%20live%20in%20California,the%20state%20more%20energy%20efficient> "The California Energy Commission banned the sale of inefficient light bulbs starting January 1, 2020." General service lamps are now required to create at least 45 lumens per watt, and incandescent bulbs can't do that. It does go on to say that 26 lamp types are exempted, including heat resistant incandescent bulbs for your oven.

But what about fluorescent tubes? The Test Pilot School building, renovated in 2000, was lit by fixtures holding three 4-foot T8 fluorescent tubes each. Over the last few years I had noted that almost every fixture had at least one if not more bulbs burned out. One briefing room

had 2 of about 18 bulbs actually functional. If you volunteered to replace the bulbs yourself, you were usually told that no replacement bulbs were available. If a big box of bulbs became available, it wasn't enough to cover all of the bulbs that needed to be replaced.

In the last few weeks, workmen have been in the TPS building replacing all of the light fixtures with new fixtures that use LEDs. While I thought that the government was forward thinking by putting in light fixtures that used less energy and were more reliable, the real answer may be something far more practical—lack of supply.

According to <https://insights.regencylighting.com/the-phase-out-of-t12s-everything-you-need-to-know-about-discontinued-tubes> “First, back in **1992**, the government amended the Energy Policy and Conservation Act to require a careful review of energy standards. The Department of Energy is expected to publish new standards as more energy efficient technologies make their way to market.

As a result, in **2009**, the department announced the eventual phase out of the 1.5-inch-diameter fluorescent T12 tubes. The mandate said production of the tubes would have to cease after **July 14, 2012**. Big-name manufacturers like Philips and Sylvania were granted two-year extensions on the deadline. But as soon as the phase out was announced, production began to decline. It was a combination of the impending restrictions, increased energy efficiency awareness, and emerging rebate programs targeting those with traditional T12 fluorescent tubes.”

Over at

[https://www.consumerenergysolutions.com/where-oh-where-have-the-fluorescent-light-bulbs-gone-2/#:~:text=US%20Department%20of%20Energy%20\(DOE,new%20DOE%20energy%20efficiency%20standards](https://www.consumerenergysolutions.com/where-oh-where-have-the-fluorescent-light-bulbs-gone-2/#:~:text=US%20Department%20of%20Energy%20(DOE,new%20DOE%20energy%20efficiency%20standards)

we find “First the regular old light bulbs we’ve always used in our homes began disappearing out of stores. Now you may be noticing that getting your commercial building’s fluorescent bulbs replaced is becoming more and more difficult. Where have all the fluorescents gone?”

US Department of Energy (DOE) regulations began phasing out various sizes of commercial fluorescent light bulbs in **2012**. About all you can get today is the fluorescent workhorse of commercial lighting—the T8 bulb.

By **January 26, 2018** even T8s will be banned to align with new DOE energy efficiency standards. Back in 2012 it was estimated that 20% of all commercial buildings and up to 44% of industrial buildings were using T8s.”

Not mentioned here, but fluorescents bulbs, including CFLs, have been dropping out of favor because they all contain mercury and have to be disposed of as HAZMAT.

So apparently without consulting you, me, or the **Kommandant**, the government started phasing out the light bulbs I had intended to use in the workshop and the hangar. What to do now?

More Details about Fluorescent Bulbs

My existing fluorescent bulbs don't have a lot of information printed on them. The most useful code was “F96T12” which breaks down to

F fluorescent

96 96 inches (8 feet) long

T tube (as opposed to bulb or CFL)

12 diameter in 1/8 inch (1.5 inches)

The T8 bulbs mentioned earlier are 1 inch in diameter.

The general spectrum of the bulb is expressed in terms like Warm White (2700K), Soft White (3000K), Bright White (3000K or 3500K), Cool White (4100K), and Daylight (5000K or 6500K). The number in parentheses is the “color temperature” which can be terribly confusing. The color temperature is the temperature (in Kelvin) of a black-body radiator that radiates light of a color comparable to that of the light source in question. For reference, the sun has a color temperature of 5778K.

A lower color temperature will have a spectral peak closer to wavelengths like orange, red, and infrared. This is a “cooler” color temperature (lower number, cooler black-body), but it emits colors that we think of as “warm”. Likewise, the spectral peak of a high color temperature is closer to blue and violet colors, colors we think of as “cool”. Confused yet?

Because I wanted my workshop to be bright enough to make you reach for your sunglasses, I used exclusively “Daylight” color temperature bulbs. With a color temperature close to that of the sun, the resulting light was more like being outside. I can't say for sure, but I think some of my bulbs are 5000K and others may be 6500K.

The color temperature tells where the spectral peak is located, but does not describe how well the rest of the spectrum matches the spectrum of a black-body radiator. This is described by the Color Rendering Index (CRI). A black-body radiator at the temperatures discussed above emits in all visible wavelengths, though not with the same intensity at each wavelength. Thus, a black-body radiator (or daylight) has a CRI of 100. Because all of the wavelengths are present, you should be able to see all colors as they are. Incandescent bulbs are effectively black-body radiators with a continuous spectrum, so they have a CRI close to 100. Fluorescent bulbs have a discrete line spectrum, which is dependent on the phosphors used. Fluorescent bulbs actually produce ultraviolet radiation inside the tube, which excites the phosphors, which then re-radiate in visible wavelengths. Fluorescent bulbs have a CRI ranging from 50 for basic types, up to about 98 for multi-phosphor types.

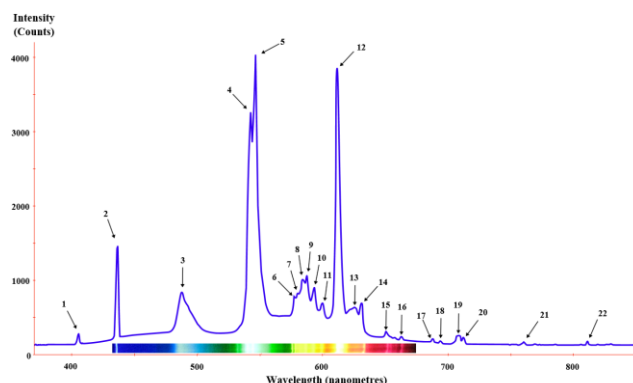
We won't discuss how the CRI is calculated, but for an example of why CRI can be important, when I lived in Colorado, I had set up a paint booth in my basement to paint the parts of the **Pedal Pitts** that I was building for **Allison** and **Ryan**, and which now is in the **Bearhawk** hangar under the command of **Emmy**. I had lit the paint booth with the aforementioned Shop Lights, which used the bulbs that came with the fixture, which were probably cheap and had a low CRI. As for the space outside the paint booth where I prepared the paints and cleaned the paint spray gun, I used an incandescent bulb for light since

I had run out of Shop Lights. The problem I ran into was that the “Federal Safety Red” paint that I was using looked “red” as expected under the incandescent light. However, the same paint under the fluorescent lights looked distinctly orange. Apparently these fluorescent bulbs were missing red wavelengths. You can’t see any colors whose wavelengths aren’t present in the source illumination. Use your “Aviation Red” flashlight in a dark room, and you will find that anything red or white looks red, and any other colors just look black. Use it on a sectional chart and some of the markings disappear!

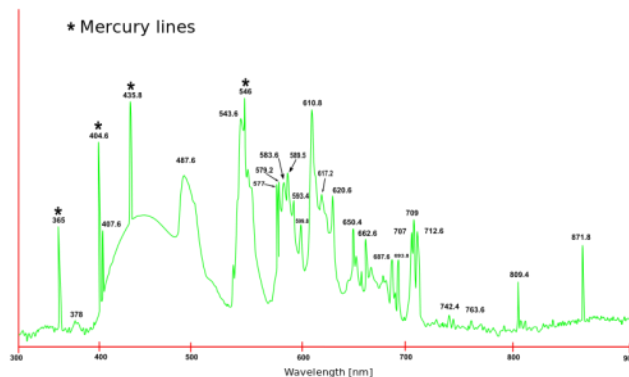


Imagine this looking orange-ish

As best I can tell from looking at web pages for fluorescent bulbs no longer available, my best guess for the CRI of the bulbs in my workshop is around 82-90. Things that are red look red. Consider these typical spectra.



**Typical fluorescent lamp with rare-earth phosphor
(note how little energy there is in the red wavelengths)**



Spectrum from a 48" Philips F32T8 natural sunshine fluorescent light

“Natural sunshine” fluorescent light

The Rise of the LED Replacements

In the course of my YouTube viewing, I had watched this video: <https://youtu.be/ixHyvXbvMwI>. The speaker tells the story of replacing his fluorescent tubes with LED replacements. He spoke of how the fixtures had to be rewired because the LED lights don’t need the ballast. He was pleased with the results, and thought that the LED lights were actually brighter. However, they were also more expensive.

When I first watched this video, it was an interesting idea which promised to reduce electricity consumption, but I didn’t realize that it was motivated by a lack of fluorescent bulbs due to ceased production.

There are many other videos on YouTube that tell essentially the same story.

Purchasing and Installing LED Tube Replacements

After searching the stores and online for replacement fluorescent bulbs, I realized that they weren’t available in stores. While I could buy them online from places like McMaster-Carr, I would have to buy a box of 16 or more and pay shipping for a large box. I only needed 2 bulbs. Figuring that something must be up, I did some web searching and learned about the end of production mentioned earlier.

Without many options, I returned to Home Depot to look at LED replacement lamps. I found a bunch of “Cool White” LED lamps, and one pair of “Daylight” LED lamps. I purchased the Daylight pair for \$45.95 plus tax.

The bulbs were Halco Lighting Technologies brand, model T896FR42/850/BYP/SP/LED2PK. These tubes were only 1 inch in diameter (T8), but fit in the single pin fixture just fine. The specifications compared like this:

	Fluorescent	LED
Watts	75	42
Lumens	4500-5000	5500
Color Temp	5000K-6500K	5000K
CRI	82-90	82

All of the installation/conversion videos on YouTube seemed contradictory and confusing, as did the instruction sheet that came with the LED lamps. The confusion seems to arise because there are so many different types of

fixtures, all wired differently. After some consideration, I realized that the rewiring was actually very simple for these single pin bulbs.

1. Remove old fluorescent bulbs
2. Cut the existing wires close to the ballast
3. Use wire nuts to join the wires together. Wires should connect the hot wire to one end of the LED lamp and the neutral wire to the other end of the same LED lamp. Because of the way my fixtures were designed, this resulted in the hot end of one lamp being at the opposite end of the fixture from the hot end of the other lamp.

Evaluation

Once I understood how to do the rewiring, the installation process of the LED replacements was very straightforward. The quality of the light is sufficiently similar to the fluorescent bulbs to be a suitable replacement. I would replace all of the other bulbs except for the expense involved.

I tried taking a picture of the bulbs to show you the slight difference in overall color and how the incandescent bulb was more yellow, but the resulting picture on my iPhone made all of the lights look to be the same color. I suspect this is because they were bright enough to saturate the sensor. While I could use another camera to stop down the lens and possibly show the difference, who knows what it would look like after being placed in this Word document, converted to PDF, and then rendered on your computer. If you want to see what the results look like, you will either have to come visit **Bearhawk Manor** or make your own replacement installation.

Bonus! XB-42 Illustrations

These illustrations were created by **Lieutenant Commander Arthur C. Beaumont** for a Douglas proposal brochure in 1943 to sell the XB-42 to the Army Air Force. **LTC Beaumont** would go on to teach **R.G. Smith**, who would go on to teach **Mike Machat**.



Formation bomb release over some coastal industrial target while FLAK explodes all around



Mike tells us these are all painted from the same factory model



Get the Navy on board with some torpedo drops

1. c; 2. a; 3. a, b, c; 4. c; 5. b; 6. c; 7. d; 8. a, b, c; 9. a, c

XB-42 Quiz Answers

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

EAA Chapter 1000 Board of Directors Meetings are now held on an unscheduled, as needed basis. If you need to know when, you're already on the e-mail notification list. (661) 609-0942

Mar 16: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Your COVID-19 Defense Bunker, Undisclosed Location. (661) 609-0942

Apr 20: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

May 15: EAA Chapter 1000 Annual Aviation Event, currently accepting ideas for activities. (661) 609-0942

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

Jul 20: CNX EAA Chapter 1000 Monthly Meeting, Cancelled in lieu of AirVenture (we hope). (661) 609-0942

Aug TBD: EAA Chapter 1000 Baseball Meeting, 6:00 p.m., The Hangar, Lancaster CA. (661) 609-0942.

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

Oct 19: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Nov 16: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Dec 21: EAA Chapter 1000 Festivus Etc Celebration, 6:00 p.m., Kommandant's Quarters, 42370 61st Street West, Quartz Hill CA. (661) 609-0942

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

Feb 15: 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, George Gennuso, 3119 Lennox Ct, Palmdale CA 93551. Membership in National EAA (\$40, 1-800-843-3612) is required.

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Inputs for the newsletter or any comments can be sent to Russ Erb, 661-754-0524, by e-mail to 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:****ZOOM MEETING 16 MARCH @ YOUR PLACE****ANOTHER CHANCE AT XB-42 QUIZ****KOMMANDANT RECOMMENDS MACHAT YOUTUBE****REPLACING FLUORESCENT TUBES WITH LEDS**