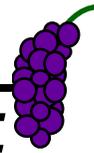




# THE GRAPEVINE



EAA CHAPTER 663 Livermore, California

Vol. XXV, No. 10, October, 2005

*There is a very fine line between "hobby" and "mental illness."*

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## BOARD OF DIRECTORS

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## MEETING AND PROGRAM

Our October meeting will take place at 7:30 P.M. on the 6th of October in the Terminal Building at the Livermore Airport.

### MINUTES: GENERAL MEETING, EAA CHAPTER 663, 9/1/05, ABOUT 7:00 PM, TEMINAL BUILDING KLVK.

The meeting got under way about 7:00 pm (I was not there yet) on the ramp in front of the terminal building. Michael Hienz, our speaker for the evening, had flown in in a customers Zenith 701 bush/kit plane and was showing it to and answering questions of early arrivers. At 7:30 Michael promptly got on with his presentation. One of the sons of the founder of Zenith Aircraft Co. he is starting a dealership located at Santa Rosa Airport but soon to move to Cloverdale Airport. Their main products are the Zodiac 601 XL, now available as a quick build kit and the Zodiac 701. Michael had to leave with the setting sun.

[www.qualitysportplanes.com](http://www.qualitysportplanes.com)

Chapter president called the meeting back to order about 8:00 pm.

No guests were present, at least none identified themselves.

The minutes of the August meetings were approved as printed in "The Grapevine".

The treasurer was not present, no report.

Business: The last chapter barbeque of the season will be Saturday Oct. 8<sup>th</sup> starting about 3:00pm on account of the earlier sun set. Nothing unusual, bring a dish to share, the location will be the northeast corner of the airport, hangars 113 and 114.

Bob Buckthal has successfully convinced some members of the need to carry on the work of the chapter. New officers and directors will be "elected" at the October general meeting

Eric Helms outlines the Young Eagles materials to be handed out at the Airport Open House on Sept. 24<sup>th</sup>. Future participants will be told to mail the forms to him in order to get prospects that are more likely to show up at the rallies. In the past there have been problems with "no shows".

Bob Farnam, the keeper of the chapter tools, reported on the purchase of the battery cable crimper, and gift of a 0-500 lbs. dynamometer (a linear force scale).

Ralph announced the next board of directors meeting for Sept. 15<sup>th</sup> at his place, and the Airport Open House coming up on Sept. 24<sup>th</sup>.

Member's forum: Bob Farnam reported on the good times had at the Tandem Wing Fly In held last month at KLVK.

Meeting adjourned for pie.

**MINUTES: BOARD OF DIRECTORS MEETING,  
9/15/05, 7:43 PM, RALPH'S PLACE.**

Those present had the initials RaCl, DaCl, BoBu, ShCo, BoFa, JoMe, GrLu, and BrCr.

Treasurer Sharon Constant reported chapter funds of \$2828.48 in the bank account and \$1030 in checks and cash.

Business: Bob Buckthal reported the corralling of a candidate for each of the four chapter officers. The six needed for the board of directors is less well defined, but will be worked out at the October general meeting.

Bill Randolph, our hoped for speaker for the January dinner, is apparently not available. Paul Rosales will be contacted; he and his wife have flown their RV-6 to all 48 states and have many stories to go along with their endeavor. No date has been set. Paul Weiss has offered to coordinate with the caterer. The Alamo Women's Club will be the place to be handled by Larry Fish.

The Airport Open House was discussed. Get the airplanes in position early. Sharon Constant mentioned that Jeremy might have their unfinished RV-7A on display. Ralph stated that opponents to the airport master plan upgrades may stage a demonstration.

Starting time for the last chapter barbeque of the year on October 8<sup>th</sup> will be 3 pm on account of the earlier sunsets.

There was some discussion of possible tool purchases brought on by the fat state of the treasury.

The computer Greg Lum needs to run the chapter web site is loaded and ready to go in Roger Hansen's airport office. All Greg needs to do is take possession and we are in business.

Program for the October meeting will be pictures of Oshkosh presented by Bob Farnam.

Meeting adjourned for pie.

Respectfully submitted, Bruce Cruikshank Secretary

**PREZ SEZ**

Ralph Cloud, Chapter President

First off, I want to remind everyone about our last BBQ of the year. It will be Saturday, October 8<sup>th</sup>. At hangar 113/114. The coals will be hot at 3pm. Bring your entrée and a side dish to share. Don't miss this BBQ.

Next, but not in chronological order, is the election of Chapter Officers for the next 2 year term. Bob Buckthal, acting as the nomination committee, has put together a slate of candidates for the office of President, Vice-President, Secretary, Treasurer and the six members of the Board of Directors. Be sure to come the October 6<sup>th</sup> meeting and vote. Or, as they say in Chicago, "vote early and vote often".

Working down the list, Airport Open House on September 24<sup>th</sup>, was a success. The Chapter booth passed information to the community on how their kids can participate in the Young Eagles program.

The last item I want to pass concerns Livermore Airport. The fuel farm requires some code compliance work that will necessitate closing the self-serve fuel island. The airport will have their bulk storage at the far west end of the ramp and will only be able to fuel from trucks. The work will begin the first week of October and continue for 2-3 months, depending on weather.

That's all for now. See you around the airport.

Ralph

**(A LITTLE COMMERCIAL) PRESS RELEASE**

Source: Lockheed Martin  
Aeronautics Company

**Lockheed Martin F/A-22 Raptor Exceeds Expectations  
in Production and Performance**

PARIS, June 14 /PRNewswire-FirstCall/ -- The Lockheed Martin (NYSE: LMT - News) Raptor industry team has reached a new level of program maturity with reliable production, solid performance and expanding capabilities, according to Orville Prins, vice president of business development for Lockheed Martin Aeronautics Company.

The F/A-22 Raptor fighter aircraft recently received the green light by Department of Defense acquisition officials to enter into full-rate production. This program milestone follows initial operational test findings in February and March by both the Air Force and the Department of Defense, which judged the aircraft to be "overwhelming effective" in its performance. Air Force

pilots will be able to dominate any engagement with the Raptor. The F/A-22 will provide protection for troops no matter where they are, to an extent never before possible.

In a presentation called "The F/A-22 Raptor: Leading Edge of Global Strike ... the Unmatched Advantage" today at the Paris Air Show, Prins described the F/A-22 as "real, required and relevant" with advanced technologies never before designed into a single fighter.

"The Raptor is now in full rate production and capable of dominating air- to-air and air-to-ground combat. No fighter in the world comes close to the F/A-22 with its overwhelming capabilities," said Prins. "The success in this program to date is the culmination of a tremendous effort by many in the Air Force as well as industry. Our Raptor team understands that the dominant capability the F/A-22 provides is vital today and must also be relevant for three to four decades to come."

The F/A-22 Raptor, the world's most advanced fighter, is built by Lockheed Martin in partnership with Boeing and Pratt & Whitney. Parts and subsystems are provided by approximately 1,000 suppliers in 42 states. F/A-22 production takes place at Lockheed Martin Aeronautics facilities in Marietta, Ga.; Fort Worth, Tex.; Palmdale, Calif.; and Meridian, Miss., as well as at Boeing's plant in Seattle, Wash. Final assembly and initial flight testing of the Raptor occurs at the Marietta plant facilities.

The Raptor is slated to reach initial operational capability in December 2005 at Langley Air Force Base, Va. The F/A-22's balanced design of stealth, supercruise speed, supportability and super-agility, along with its advanced integrated avionics, will enable combat commanders to change the way future wars are fought.

### **BACKGROUND INFORMATION**

Lockheed Martin Aeronautics Co., a business area of Lockheed Martin, is a leader in the design, research and development, systems integration, production and support of advanced military aircraft and related technologies. Its customers include the military services of the United States and allied countries throughout the world. Products include the F-16, F/A-22, F-35 JSF, F-117, C-5, C-130, C-130J, P-3, S-3 and U-2. The company produces major components for the F-2 fighter, and is a co-developer of the C-27J tactical transport and T-50 advanced jet trainer.

Headquartered in Bethesda, Md., Lockheed Martin employs about 130,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services. The corporation reported 2004 sales of \$35.5 billion.

For additional information, visit our Web sites:  
<http://www.lockheedmartin.com>  
<http://fa22raptor.com>

### **PLANE FLIES TWO HOURS MISSING FIVE FEET OF WING**

Homebuilders rejoice -- your mistakes probably aren't that bad. British officials are wondering how the pilot and passengers (including two aircraft mechanics) on board a Cessna 210 could fly the plane for two hours without realizing -- or expressing particular care -- that a five-foot section of one wing was missing. The unnamed pilot, from a community called Dozy (we couldn't make that up), apparently hit a tree on takeoff from an airport in Ireland on his way to deliver the mechanics to a broken Boeing 767 in Portugal.

The collision took off more than a third of the wing, including a fuel tank. It wasn't until the plane ran low on fuel over the English Channel that the pilot realized something was wrong and made an emergency landing at Jersey International Airport. He recalled the takeoff collision but said he thought the plane had been "struck by a little bird."

### **THE QUEST FOR ETERNAL FLIGHT**

Engineers dream of a solar plane that never needs to land. Far-fetched? They've just hit the 24-hour mark.  
author: Stuart F. Brown  
Time Inc. (Copyright 2005)

SEEN THROUGH THE EYE OF a tiny videocamera aboard Alan Cocconi's remarkable unmanned airplane, parallel rows of runway lights become discernible as the craft turns into its final approach for a nighttime landing. SoLong, as the plane is called, touches down at about 30 miles per hour and slows to a stop. The "runway" turns out to be the crazed alkaline surface of El Mirage Dry Lake in the Mojave Desert northeast of Los Angeles. And the illumination system reveals itself to be a bunch of recreational-vehicle dome lights bought at Home Depot for \$2 apiece. But Cocconi has just achieved an engineering milestone. Using a mixture of the most advanced technology on earth and parts pilfered from flashlights and a bathroom scale, he has kept his radio-controlled solar-electric plane aloft

for 24 consecutive hours in the longest flight ever made by an electric-powered aircraft.

Cocconi is chasing the dream of an electrically powered "eternal airplane" that can stay aloft for days or months on end. That idea was first articulated by Dr. Paul MacCready, chairman of AeroVironment Inc. in nearby Monrovia, which has built several renowned human- and solar-powered planes.

AeroVironment's 247-foot- wingspan Helios solar-electric plane achieved great feats-- including climbing to an altitude of 97,000 feet, higher than any other nonrocket plane--before being destroyed in a testing accident in Hawaii two years ago. "Alan has been very dedicated to the subject of systems efficiency, and now the work is paying off," MacCready said after SoLong's 24-hour flight. "It's a step in the direction of the eternal airplane."

Why an eternal airplane? There is the conceptual elegance of building something that goes up but does not come down. There could also be practical uses for a craft that dwells in the sky and draws its power from the sun: telecommunications without satellites, for instance, or environmental monitoring, and of course military surveillance, although Cocconi prefers to focus on peaceful applications. (Cocconi, who has a peace symbol made of tape on the rear window of his Subaru, has to keep a sharp eye out at El Mirage for the Predator military drones that builder General Atomics flight- tests in the area. "They fly them every day," he says, "so I'm always trying to avoid the Predators.")

A lanky guy with an easy grin, Cocconi is one of the smartest electro-mechanical-aeronautical engineers around. Electrons and molecules of air are among his best friends. I first met him in Australia in 1987, where he was tending to the sophisticated power- supply system he fabricated for the GM Sunracer solar-electric car (built by AeroVironment) that outran all rivals in a race across the continent. Since then his company, AC Propulsion in San Dimas, Calif., has fabricated battery packs, powerful and efficient motors, and the magical black boxes of circuitry needed by the developers of hybrid and electric vehicles. He has also built battery-electric sports cars that sprint up the nearby San Gabriel mountains like nobody's business.

For the past year and a half Cocconi has been cloistered in his house--which is cluttered with electronic test equipment, workbenches, and a metalworking lathe--building the 25-pound, 16- foot-wingspan plane that flew for 24 hours in late April. SoLong is a real piece of work, deftly integrating the

latest in high- efficiency componentry: hot-rod photovoltaic cells that convert 20% of the sunlight that strikes them into electricity; a bespoke motor-drive system that spins the propeller with 88% electrical efficiency; an autopilot of Cocconi's own design; and a pack of 96 cylindrical lithium-ion rechargeable batteries. "Laptop computers have driven the battery improvements that kept us in the air during the night," he observes. Cocconi custom-machined the aluminum tooling needed to bend the solar cells to conform with the curvature of SoLong's graceful composite wings.

SoLong's flight in April was a labor-intensive affair. "The idea was to achieve a 24-hour flight initially, and then to try flying through two consecutive nights in June, when the days are longest," Cocconi says. Five experienced radio-controlled aircraft pilots took turns guiding the craft, searching for thermal updrafts rising from the desert floor during the daylight hours to give SoLong altitude for free, like a lazily circling hawk looking for prey. Only when the plane descended to a minimum safe altitude did its electric motor switch on, spending solar energy stored in its batteries to stay aloft. The propeller's twin carbon-fiber blades are attached to a variable-pitch hub that automatically seeks an optimal blade angle for the amount of motor power being used at the moment. When the motor shuts down, the prop blades fold back against the airplane's nose to minimize drag. Mission control is a five- by eight-foot trailer packed with computers and equipment that logs performance data streaming in via 23 radio channels.

Cocconi's record-breaking flight sliced 24 hours pretty thin. To avoid having to fly through an entire night, the plane was launched just after midnight on April 21 with its batteries fully charged. SoLong made its takeoff run along the whitish, dusty surface of the dry lakebed on a wheeled dolly made mostly of PVC plastic pipe of the type sold at Home Depot.

As its wings bit the air and the plane climbed into the night, the dolly stayed behind on the ground; SoLong relies on wingtip and belly skids for landing. When the sun rose at 6:10 AM, electric current gradually began flowing from the 76 wingtop solar cells, augmenting the power from the batteries. By 2:30 in the afternoon the batteries were full again, and when the aircraft finally touched down just after midnight it still had 40% of its battery power remaining. "We could have flown for four more hours, but we couldn't have it made to dawn with that setup," Cocconi says. With that goal in mind, he'll be adding two more pounds of laptop batteries for the two- night flight planned for June. If that succeeds, nobody will be able to say Cocconi sliced it too thin.

SoLong will have ventured into the unfamiliar skies of eternity.

The longest airplane flight on record is the famous 1986 round-the-world trip by Burt Rutan's Voyager, which took nine days. But Voyager was piloted, piston-powered, and could fly only as long as its fuel supply permitted.

Efficiency-obsessed engineers like Cocconi and MacCready are believers in the power of amazing demonstrations to change the way people think about energy use and the possibilities of ultralightweight technology. As new materials and components are invented and existing ones continue to improve, their machines will begin to look less like exercises in exotica and more like something that can work. Like those cool drawings in Leonardo da Vinci's notebook.

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**Taken from a recent post on the  
Matronics RV-9 List. The subject of the thread:  
Aircraft Registration fees and sales tax**

Here in South Carolina we have that plus Personal Property Tax issues. I have an H-35 Bonanza that they felt I deserved to pay a \$1400.00 a year PPT and then I built a Kitfox, and I got an inquiry from the Assessors Office as to its value. I told them in that the legal definition of value is what a willing buyer and a willing seller will exchange an item for, and I will never sell the airplane because of liability issues, it has no value. They weren't buying that, and said that I had to affix a value. I told them that I was sure it was worth more than my neighbors gun collection, but surely worth less than his wife's antique furniture collection, How much do they pay? They said that they pay nothing because those things don't have a title and they only tax titled items, so because my hobby produces an item that is titled, I have to pay tax. I told them that I realized everybody needs to pay their fair share and I am willing to do that, so long as it is reasonable, but if they get carried away on the Kitfox like they did on that 40+ year old Bonanza, I would spend \$300.00 to form a Delaware 40+ Corporation, which would then own the airplanes, and they would get nothing. They sent out a \$1250.00 tax bill on the Kitfox and now I have a Management Corporation that owns both airplanes and it costs me about \$150.00 a year for Corporate tax and the fee for the Delaware Company that handles everything for out of state Corporation owners.

You might want to look into this.

## ***This Just In***

**Quality Sport Planes, regional distributor for Zenith Aircraft kits, has recently moved to new airport facilities in northern California. EAAers are all invited to the Grand Opening Celebration and first Open House set for Saturday, October 15, 2005!**

**Quality Sport Planes is now located on the Cloverdale Municipal Airport (85 miles north of San Francisco) and offers kits, rudder workshops and builder-assist programs for Sport-Pilot-Ready aircraft by Zenith. For more details on the Open House, kits or company's services, please visit [www.qualitysportplanes.com](http://www.qualitysportplanes.com) or call 707-546-6272.**

**Fly-in or drive in - All Welcome**

**Don't Forget – Chapter BBQ**  
**Saturday, October 8<sup>th</sup>**  
**Coals hot at 3pm**  
**Hangar 113/114**



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