



# THE GRAPEVINE



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

Vol. XXXII,



No. 1, January 2013



## Officers



**President** Ralph Cloud 925-449-1048  
**Vice President** Dave Dent 925-447-8055  
**Trea\$Urer** Mark Palajac 510-557-4020  
**Secretary** Bruce Cruikshank 510-886-6897  
**Program Co-Ord** Dave Dent 925-447-8055  
**Tech Counselor** Dave Dent 925-447-8055  
**Tech Counselor** Gordon Jones 925-447-1549  
**Tech Counselor** Bob Sinclair 925-935-7465  
**News Letter Emeritus** John Meyer  
**News Letter Editor** Jeffry Larson 209-608-5981  
**Flight Advisor** Barry Weber 925-963-0824  
**Flight Advisor** Bob Farnam 925-449-1513  
**Young Eagles** Trina Anderson 209-832-1162  
**Librarian** Alan Thayer 510-582-7274  
**Web Editor** Brad Olson 925-866-9289



## Board Of Directors

Bob Farnam 925-449-1513  
 John Goldsmith 925-447-7362  
 Chuck Ray 925-899-5660  
 Dave Anderson 209-609-2162  
 Dick Jennings 925-862-2345  
 Bob Cowan 925-373 0555

## Meeting And Program

**NOTICE:** Our January meeting will take place at 7:30 P.M. on the 3rd of January. The meeting will be at the terminal - KLVK.

### Calendar:

Month	Date	Speaker	Topic
Nov	1st	Mystery Speaker	Halloween +1 — Dave Dent on spark plugs
Dec	6th	Einar Enevolson	Strato-2C Aircraft
Jan	3 <sup>rd</sup>	Dave Ganzer	AeroViroment

**Our January Program** will feature another great speaker from Dave Dent's arsenal of contacts. This month Dave Ganzer from AeroViroment will be speaking. Dave is a pilot and design engineer at AeroViroment currently working on some big UAV's at Edwards.

**Mailbag:**

**I'll be accepting money, hopefully checks, for 2013 dues which are \$30 and dinner which is \$25 per person? Checks should be made out to EAA 663. They can give it to me at the meeting or send it to me at:**

**Mark Palajac  
25 Jacaranda Drive  
Fremont CA 94539**

**Dave Dent – Do you know your spark? - 11/1/2012 – Transcribed by Kirk Knight.**

Dave Dent talks about spark plugs  
EAA Chapter 663 Livermore, California

The purpose of this topic is to take off from the Cessna magazine this month about sparkplugs. Do you know how it works, how it makes a spark? All you probably know is you screw it in, hook up the wire, turn the key and it runs!

We're going to talk about the magneto down to the sparkplug. The magneto goes back to about third or fourth airplane ever designed. The magneto has north and south poles, so the magnetic field flows around like so through a primary and secondary coil, goes through a condenser and you have a little switch in the middle there. The switch turns off, when it's open it fires. There's very high voltage in there and it goes through the distributor block, in the block it figures which plugs it's going to go to, and then down to the sparkplug. That's all you care about, it's simple, as long as it runs that's great.

What happens when you're flying along and all of a sudden there's b-b-b-b-l.l.l. B-b-b-b-blill. (ED: Unscientific language inserted here.) What do I do next? You assume you have a bad mag so you switch the mags in flight. I switch from both and I find my left mag is bad, so I go back to my right. What is the next thing you should do when that happens?

A: Land? (nervous laughter from all)

Let me give you the definitive answer – LAND! Do NOT go back to the dead mag. You may try to go back and it could be dead too! So land immediately. A lot of people think, "Oh, I've got an extra mag I can go to the other one..." No! Don't do that.

**MAGs**

Most of you guys with homebuilts are flying around with Slick Magnetos. Some of you have those old Bendix that are about this ..... big and weigh about 15 pounds each. The Slick I have here is newer and lightweight and some of the Bendix are about the same size. Unless you're an A&P you're not allowed to get inside this little box – and I'll explain why.

See that little silver pin inside there, in the middle? We use that for timing the magneto. Some of you may have been checked out by an A&P for timing that magneto. But the big important thing is to remember which hole that pin goes into! How many holes in the back of the mag? 2 -3? THREE! Left, right and X. Those are important and where you find out is on the side of the mag – right here. Left – right. If it has nothing it's X. That's important because that's the ROTATION of the magneto and that's what that pin is used to determine.

When we get to the point of reinstalling the magneto in the hole in the engine we have to get the engine as close as we possibly can to static or the timing position of the engine.

On the Continental engine there is literally a timing mark on the crankshaft but many people don't know that. It's only a TC – top dead center. On a Continental as well as Franklin have marks on the crankshaft for top dead center.

OK, now pay attention! On a Continental that lines up on the BOTTOM of the crankcase flange. So the top dead center mark on the Continental crankshaft is placed next to the line on the bottom of the crankcase flange for number 1 cylinder. You do this before you put the mags in.

You leave all the plugs out except for number 1 cylinder. You put one plug in and cover the other plug hole with your finger to feel the pressure and rotate the crank to bring up compression – not exhaust, cause you can get some air coming through the exhaust – compression as the piston moves up in the cylinder.

Then you work from there on the Continental you use one of these to help. Some people call these a “flower pot.” You put this flower pot on the engine and tie it down. I use duct tape. Then I start at top dead center and work my way through it. Back it up a bit and check and half way is where your timing mark will be.

This is recommended by Continental because people were putting them on wrong in the past.

#### LYCOMING

The Lycoming engines have 2 ways of finding TDC or the location of the crankshaft were it 22, 25 28 degrees. On the starter ring that is attached to the flywheel, the backside of that starter ring has the marks for 22 -25 TDC.

On the frontside of that starter ring are timing marks that line up with your starter. There a small hole there into which you can put a 1/8” drill bit and it will line up with that line for TDC on number one cylinder.

OK, so you have the engine at #1 TDC, insert the mag but don't tighten the bolts. Get your timing box – I use this new style, a lot of people use the old square boxes but I like this impedance device – and you time the mag to this until the light goes out indicating alignment of the timing.

The other timing device is a reference ohm and you want them both to indicate alignment at the exact same time.

Q: What's your tolerance on the timing?

A: I try keep it within 1 degree, half a degree. On electronic ignition I like to split it to within 0.5 or 0.8 of a degree. Because on a dual electronic ignition engine if they both are at the same time you're going to have a very, very, very noisy exhaust system. By lagging one by just a bit of a degree it will smooth out that noise.

Let's go a bit further. Some of these things you as an owner operator shouldn't get into, but here's one you should know about:

#### CRACKED COILS:

This is the coil out of a Slick magneto. Normally that's been wiped off. That crack is normally formed by one thing and that's too much resistance in the plugs causing the spark to come back into the magneto, causing the magneto to separate in the the primary and secondary. All there is is a thin mylar material in there. It can't take the energy, it will blow through, so it has to go somewhere and it goes right out the side or into the distributor block. It starts eroding the distributor block.

Again, it's because there is too much resistance in the plugs so the energy travels back up the system to the magneto and arcs at weak points. It usually turns a black hole around that crack.

OK, so that's the symptom, what's the cause of these failures? (Holds up a harness) How many people pay attention to that lead, the spring, the insulator what some call "the cigarette," or the wire? Many people never bother to check em, just stick 'em back in.

## HARNESSES

Some of what I've been finding recently on failures on the 550 Continentals with brand new wires is they've been sitting on the bench or on an engine awaiting installation for 4-5 years while you're building the airplane - and they're failing.

We live in climate here in Livermore that is extremely dry - 20-30% humidity - sometimes less. The silicone breaks down. These harnesses and silicone sleeving is break down. I found 3 engines in last 6 months with new harnesses failing.

How do I find out if it's my harness that's no good? I'm going through the system from the mag to the harness. Once of the issue is these cigarettes that sit inside your spark plug.

How do I know what's failing. I have a misfiring somewhere. I heard one of these guys flying across the field with the engine going, pow... pow-pow...pow-pow. Sounds like a mag or wire or something, but he definitely has a problem. Let's check out the harness.

OK, this is a High Potter- HiPot. They're used in all kinds of industries and they vary from ones for your 24 gauge wire to this for the big power from your spark plug wires. One end hooks to a 12 or 24 volt circuit which you select. Other end hooks this black wire to the ground on the engine. And this hooks right to the end, the spring, of the spark plug lead you're testing. Then - if you're not wearing a pacemaker - you push this button and hear a buzzzztt of very high voltage. That's not good for pacemakers in the vicinity. I learned that the hard way. You'll see a high voltage spark going across there. If you're seeing that spark 99% of the time that lead is good. If you don't chances are it's shorting out. Before you go any further, move the prop 10 degrees or so and test again, as you could be arcing across the points and get a false reading.

Be sure to check that and if there's no spark across that lead it's breaking down, shorting to the magneto or to the case. That's what we call "high potting." The reason I'm saying all these things we go out and do runups and clean the thing and get leaner and leaner, and think it's OK and take off with it. I know, I've done it myself. But we have to be sure when we do these checks we do them properly.

So if you're in the hangar or on the ramp and pull this stuff off the plane and all sorts of black things fall to the ground you want to know that that is! Something is breaking down. It may have been cleaned but chances something is shorting out in there. A lot of times the cigarette has actually disintegrated because I have so much backload coming backup the system from the sparkplug. What's happening is it's starting to fail and a lot of guys will go in there and use MEK or low vapor cleaner and remove all the surface dirt, clean it off and put it back in.

If you put things in and you turn it (the aluminum plug connector) in by hand, it should go in almost all the way. If not, there's something wrong.

Again, connect it, turn it by hand to and snug it down  $\frac{1}{4}$  turn, no more, and that's it, nothing more. Otherwise you can distort the plug by over-torquing. These plugs aren't cheap these days.

How many are running massive plugs? How many are fine wire? Others are on E-mags with automotive plugs \$3 each. Champion finewire are \$90-125 each. Massive are about \$40. Treat these things like they are gold!

What I want to get at now is that the type of plug we run. How many in this room have had plug misfire in the air? Here's a massive, a finewire, a long reach, short reach.

A Lycoming has a mark on the cylinder for the plug reach. How many have seen a green mark on the cylinder? How about a blue mark on the fins? It tells that you have long or short. Usually green is long reach – it's color coded.

This is a fine wire iridium plug we used to call a platinum plug. This is iridium wire in the center, one of the hardest you can get. It can take tremendous heat that allows it to stay clean and wear a long time.

Another type is the 37-BY plug designed for the 235 engine due to so much engine oil blowby it keeps fouling out.

We have massive wire plugs with 2 or 3 electrodes around the edge.

See inside the plug – that's aluminum oxide ceramic that is very important. It is the most important in the manufacture – the ceramic insulator. It dissipates the heat which is very important. If you pull a plug and see this discoloration – that's arcing. You have a serious problem. If the plug has been dropped it likely is no good. If this end hits it will look like this, and if the other end hits it looks like this (need images!) Insulator in this finewire is broken, cracked. When that piece breaks off you will have pre-ignition in your engine because the piece of ceramic is a glowplug in your cylinder. It's bouncing around in the plug or the cylinder causing pre-ignition because it's so hot. Within seconds that baby can cause pre-ignition that blows a hole in your pistons, domes them, and causes major damage to your engine. Literally, just seconds.

Here's a Tempest pressurized plug. They've changed their design to add a resistor inside the ceramic. The thing about this kind of resistor on a Champion, I'll disassemble this plug. Don't do this unless you want to toss it! This screw is held in with locktite. The Champion is held together with a cap, a spring and silicon carbide resistor. You can take it apart and the resistor and cap will fall out. That little resistor has an important job maintaining the current so it can jump that cap at the end of the plug and cause a spark. That gap is important because it relates to the amount of current needed for proper spark.

How many have a gapping tool? I put this in a vice, add the plug and gap it. You have to use a wire gauge on the plug. I have a 19 and 15/1000th of an inch gauge. The gap should be 16-22/1000th of an inch. That's what the system is designed for. If it's too close there's too much energy and you get a backload. If it's too far away it doesn't have enough energy for a complete burn. Do you have a spark plug cleaner? Use only glass beads not sand! Sand will wear away that ceramic at the tip which has a special coating to absorb more heat – 2,400 degrees at the tip.

I use 80 pounds in the bead blaster and then use air to blow out excess. You'll see some plugs with lead in them, which I use dental picks to remove those. It's both a heat problem as well as shorts out plugs. Clean out the crud in there with air, a dental pick, cotton swap and don't forget to clean the plug threads with a wire brush – do not

touch the electrodes, just the threads. Put anti-seize on this. Don't dip it! Just a bit and it transfer when you screw it in.

We rotate plugs! I rotate them crisscross top to bottom. Remember the magneto has a north & south magnet? It alternately fires on the north side and the south side. It erodes the electrodes on one side, positive and negative. You want to wear the plugs evenly every 100 hours. On a massive electrode plug you'll get 400-600 hours. On a fine wire you'll get up to 2,000 hours. It's about \$4 per hour per set of 12 plugs (6 cyl) with labor.

OK, here's an ohm meter. This hit me last week that I'd never done this. OK, from center post on top to the center electrode on the bottom what should the resistance measure? 1,200- 2,000 ohms.

Let's measure this plug. It's 35K ohms. What's going on? The spark is going elsewhere, not to the tip and igniting the fuel. That's what I'm trying to emphasize here. The current can't get across the gap and it's going to back up the system. It's going affect the cigarette. Then the lead. Then the magneto. And arc across the distributor cap and then the coil.

One of the guys on the field just bought 12 new plugs, brand new, checked them out and had 1 good one within spec. The rest were to high. Can you change the resistor inside but don't even try. This resistor I pulled out earlier measures 15,000 ohms. Put it in the plug and the plug reads 35,000 ohms. That resistor is no good to start with.

Q: What makes it go bad?

A: Manufacturing problems. Before you put any fine wire plug in your engine be sure to check the resistance. Champions have been having problems, but check them all. Tempest is made differently, but check them all.

There are arguments that people are causing problems for their plugs running Lean of Peak. You can't get detonation lean of peak. You can only get it rich of peak.

A problem on takeoff is that you're running full throttle and the resistance is high, but the ceramic has to remove that excess heat. If it doesn't do it you're going to get a real hot cylinder in about 2 minutes while you're climbing out. On a Continental you'll shoot up 500 degrees. You have to worry about your mags, too. If resistance of the plug is too low it can't jump. It's a combination of gap and resistance.

Race car drivers have the same problem. They're putting out 50,000 volts, you'll putting out 24,000 volts. They use 35-40/1,000ths.

NEXT ISSUE: Torquing

Continental they recommend 30-35 inch pounds. I recommend a torsion bar torque wrench. You can't share mine because mine is calibrated! When you're done torquing, back it down to the minimum so you avoid hysteresis.

You should calibrate your wrench annually. Even if it's sitting on the shelf. Never torque anything inside an engine with a clicker wrench. Use a torsion bar.

You can get testers to check on center electrode erosion from Aircraft Spruce. It slips on the top and you can check for under 16/1,000ths.

Q: What about replacing the copper gaskets on the plugs? Replace those at 100 hours?

A: I keep them at 50 hours and replace at 100. You can save them and anneal them, but they should be inspected. It's safer to put on new ones.

**Mailbag: - Contributed by Ralph Cloud**

Subject: How aviation started in the USA

This is a lengthy read, but well worth your time to learn how aviation started in this country and how inter-related all of the main characters were.

How many of you know that in 1910, mighty Martin Marietta got its start in an abandoned California church? That's where Glenn L. Martin, with his amazing mother Minta Martin & their mechanic Roy Beal, constructed a fragile biplane that Glenn taught himself to fly.

It has often been told how Douglas Aircraft started operations in 1920 in a barbershop's backroom on L.A.'s Pico Boulevard. Interestingly, the barbershop is still operating.

The Lockheed Company built the first of their famous 'Vegas' in 1927 inside a building currently used by Victory Cleaners at 1040 Sycamore in Hollywood.

In 1922, Claude Ryan, a 24 year old military reserve pilot, was getting his hair cut in San Diego, when the barber mentioned that the town's aviator was in jail for smuggling Chinese illegal's up from Mexico. Claude found out that if he replaced the pilot 'sitting in the pokey,' he would be able to lease the town's airfield for \$50 a month -- BUT he also had to agree to fly North & East -- not South!

Northrop's original location was an obscure Southern California hotel. It was available because the police had raided the hotel, and found that its steady residents were money-minded gals entertaining transitory male hotel guests.

Glenn Martin built his first airplane in a vacant church, before he moved to a vacant apricot cannery in Santa Ana. He was a showman who traveled the county fair, and air meet circuit as an exhibitionist aviator. From his exhibition proceeds, Glenn was able to pay his factory workers, purchase the necessary wood, linen, and wire. His mother, Minta and, two men ran the factory while Glenn risked his neck gadding about the country. One of his workers was 22-year old Donald Douglas [who WAS the entire engineering department]. A Santa Monica youngster named Larry Bell [later founded Bell Aircraft which today is Bell Helicopter Textron] ran the shop.

Another part of Glenn Martin's business was a flying school with several planes based at Griffith Park, and a seaplane operation on the edge of Watts where his instructors taught a rich young man named Bill Boeing to fly.

Later, Boeing bought one of Glenn Martin's seaplanes, and had it shipped back to his home in Seattle. At this same time, Bill Boeing hired away Glenn's personal mechanic. After Boeing's seaplane crashed in Puget Sound, he placed an order to Martin for replacement parts.

Still chafing from having his best mechanic 'swiped,' [a trick he later often used himself] Martin decided to take his sweet time, and allowed Bill Boeing to 'stew' for a while. Bill Boeing wasn't known to be a patient man, so he began fabricating his own aircraft parts, an activity that morphed into constructing entire airplanes, and eventually the Boeing Company we know today.

A former small shipyard nicknamed 'Red Barn' became Boeing Aircraft's first home. Soon, a couple of airplanes were being built inside, each of them having a remarkable resemblance to Glenn Martin's airplanes...that interestingly, had its own remarkable resemblance to the Glenn Curtiss' planes.

A few years later, when the Great depression intervened, and Boeing couldn't sell enough airplanes to pay his bills, he diversified into custom built speed boats, and furniture for wealthy friends.

After WW-I, a bunch of sharpies from Wall Street gained control of the Wright Brothers Co. in Dayton plus the Martin Company in L.A...a merger that became the Wright-Martin Company.

Wright-Martin began building an obsolete biplane design with a foreign Hispano-Suiza engine. Angered because he had been out maneuvered with a bad idea, Martin walked out taking Larry Bell, and other key employees with him.

From the deep wallet of a wealthy baseball mogul, Martin was able to establish a new factory. Then his good luck continued when the future aviation legend, Donald Douglas, was persuaded by Glenn to join his team. The Martin MB-1 quickly emerged from the team's efforts, and became the Martin Bomber.

Although too late to enter WW-I, the Martin Bomber showed its superiority when Billy Mitchell used it to sink several captured German battleships, and cruisers to prove it's worth. He was later court martialled for his effort.

In Cleveland, a young fellow called 'Dutch' Kindelberger joined Martin as an engineer. Later, as the leader of North American Aviation, Dutch became justifiably well-known.

Flashing back to 1920, Donald Douglas had saved \$60,000, returned to L.A., rented a barbershop's rear room, and loft space in a carpenter's shop nearby. There he constructed a classic passenger airplane called the Douglas Cloudster.

A couple of years later, Claude Ryan bought the Cloudster, and used it to make daily flights between San Diego, and Los Angeles. This gave Ryan the distinction of being the first owner/operator of Douglas transports. Claude Ryan later custom built Charles Lindbergh's ride-to-fame in the 'flying fuel tank' christened: The Spirit of St. Louis.

In 1922, Donald Douglas won a contract from the Navy to build several torpedo carrying aircraft. While driving through Santa Monica's wilderness, Douglas noticed an abandoned, barn-like movie studio. He stopped his roadster, and prowled around. The abandoned studio became Douglas Aircraft's first factory.

With the \$120,000 contract in his hand, Donald Douglas could afford to hire one or two more engineers. My brother, Gordon Scott, had been schooled in the little known science of aviation at England's Fairey Aviation, so he hired Gordon.

My first association with the early aviation pioneers occurred when I paid my brother a visit at his new work place. Gordon was outside on a ladder washing windows. He was the youngest engineer. Windows were dirty, and Douglas Aircraft Company had no money to pay janitors.

Gordon introduced me to a towhead guy called Jack Northrop, and another chap named Jerry Vultee. Jack Northrop had moved over from Lockheed Aircraft. All of them worked together on the Douglas Aircraft's 'World Cruiser' designs.

While working in his home after work, and on weekends, Jack designed a wonderfully advanced streamlined airplane. When Allan Loughead [Lockheed] found a wealthy investor willing to finance Northrop's new airplane, he linked up with Allan. and together they leased a Hollywood workshop where they constructed the Lockheed Vega. It turned out to be sensational with its clean lines, and high performance. Soon Amelia Earhart, and others flew the Vega to break many of aviation's world records.

I had the distinct pleasure of spending time with Ed Heinemann who later designed the AD, A3D and A4D. He told me how my dad would fly out to Palmdale with an experimental aircraft they were both working on. They would take it for a few hops, and come up with some fixes. After having airframe changes fabricated in a nearby machine shop, they would hop it again to see if they had gotten the desired results. If it worked out, Mr. Heinemann would incorporate the changes on the aircraft's assembly line. No money swapped hands!

In May 1927, Lindbergh flew to Paris, and triggered a bedlam where everyone was trying to fly everywhere. Before the first Lockheed Vega was built, William Randolph Hearst had already paid for it, and had it entered in an air race from California to Honolulu.

In June 1927, my brother, Gordon, left Douglas Aircraft to become Jack Northrop's assistant at Lockheed. While there, he managed to get himself hired as the navigator on Hearst's Vega. The race was a disaster, and ten lives were lost. The Vega, and my brother vanished. A black cloud hung heavily over the little shop. However, Hubert Wilkins, later to become Sir Hubert Wilkins, took Vega #2, and made a successful polar flight from Alaska to Norway. A string of successful flights after that placed Lockheed in aviation's forefront.

I went to work for Lockheed as it 26th employee, shortly after the disaster, and I worked on the Vega. It was made almost entirely of wood, and I quickly become a half-assed carpenter.

At this time, General Motors had acquired North American consisting of Fokker Aircraft, Pitcairn Aviation [later Eastern Airlines] and Sperry Gyroscope, and hired Dutch Kindelberger away from Douglas to run it. Dutch moved the entire operation to L.A. where Dutch and his engineers came up with the P-51 Mustang.

Interestingly, just a handful of young men played roles affecting the lives of all Americans...as it initiated the Southern California metamorphosis, from a semi-desert with orange groves and celluloid, into a dynamic complex supporting millions.

Although this technological explosion had startling humble beginnings, taking root as acorns in -- a barber shop's back room -- a vacant church -- an abandoned cannery -- it became a forest of mighty oaks.

Source:

Denham S. Scott, North American Aviation Retirees' Bulletin.

[December 2012 Minutes](#)

[MINUTES: GENERAL MEETING, EAA CHAPTER 663, 12/6/2012, 7:30 PM, KLVK TERMINAL BUILDING.](#)

[Chapter president Ralph Cloud called the meeting to order.](#)

[One guest, Dave Peterson introduced himself.](#)

[The minutes for the November meetings were approved as printed in "The Grapevine".](#)

Treasurer Mark Palajac reported \$4,068.58 in chapter funds and a membership of 102 members. He was accepting checks for next year's dues (\$30) and the annual dinner (\$25). Paying with cash was not recommended. (Something about getting credit for your payment.) His report was approved. The FAB FIVE have yet to decide how to spend the \$250 won at the Golden West Fly In. There was a suggestion of blowing some of it on better wines for the annual dinner.

Business: Young Eagles: Trina Anderson reported that 15 were given rides from Livermore Airport, and 47 from Tracy Airport this year. Nothing is yet available on Eagle Flight.

Jeffry Larson reported that the mystery airplane was an A-1B Husky on amphibious floats. Mark Palajac was the first with the correct answer.

The January 19th annual dinner will be held at the Livermore Veterans hall (5th and L), and will feature a presentation by Ray McCrea experiencing a total solar eclipse while flying over southern Africa and additional pictures from Madagascar; think lemurs. Dave Dent is arranging the caterer.

Announcements; This month's board will be on the 20th; the first meeting of the New Year will be on January 3rd 2013!!!

Member's forum: Dave Dent's maintenance tip for the month was the suggestion that it is advisable to change the tube when changing the tire. Do it. And while you are at it, align the red dot WITH the valve stem.

Break and then Program: Dave Dent introduced Einar Enevolson for the second time this year. Einar told us about the development and flying the Grob Stratos 2C ( [http://en.wikipedia.org/wiki/Grob\\_Strato\\_2C](http://en.wikipedia.org/wiki/Grob_Strato_2C) ) a prototype high altitude research airplane. It turns out flying an airplane with a wingspan of 185 feet at 55 knots is not a simple matter. A slight yaw or medium turn can produce a great difference in the speed at the wing tips creating strong over banking tendency. Also keeping reciprocating engines producing power at >50K' also takes some extra engineering, and monitoring. Of the 29 flights, 24 involved some kind of emergency. Thank you Einar.

Meeting adjourned.

December 2012

MINUTES: BOARD OF DIRECTORS MEETING, EAA CHAPTER 663, 12/20/12, 7:48 PM, RALPH'S PLACE.

Ralph Cloud, Dick Jennings, Bob Farnam, Dave Anderson, Bruce Cruikshank, Dave Dent, and Mark Palajac were present.

Mark Palajac reported \$4,838.58 in chapter funds. This includes 20 member renewals and 16 dinner reservations.

Business: Ralph mentioned that editor Jeffry Larson is awaiting articles about coming chapter events.

The January 19th annual dinner: Place: Veterans Hall, corner of L and 5th streets in Livermore. Set up at 5pm, cocktails at 6, dinner at 7. This caterer is Bonehead's Texas BBQ Catering. The menu will include chicken, pulled pork, and trimmings. We will be supplying snacks and drinks.

Dave Dent has arranged for Dave Ganzer for the January program. Dave Ganzer is a pilot and design engineer at AeroViroment currently working on some big UAV's at Edwards. Should be good.

Announcements: Next general meeting will be 1/3, board meets 1/17.

Meeting adjourned for pie.

Respectfully submitted Bruce Cruikshank, Secretary

### Feedback/Questions/Suggestions

Any and all feedback is welcome. Please take a few minutes to send suggestions, tips, corrections or any other feedback to: [jeffrylite@comcast.net](mailto:jeffrylite@comcast.net).

Cool video's found on the internet.

[The best Christmas Lights](#) – Thanks to Bruce

[Airbus A380-800 landing at SFO](#) – Thanks Bruce

[Chapter Members just having fun...yah right](#)

[Highway safety in Russia](#) – Thanks to Bob Cowan

### What is it? From last month Sponsored by:



Mark Palajak was the first correct answer and was awarded the LED flashlight provided by Aircraft Spruce.

Congrats to all that participated and added points towards the year end prize of the Comtronics headset. Sponsor prizes thanks to Aircraft Spruce. Don't forget to thank them when you call and make that next order. Might be worth jotting down a note in the comments section if you order online. A year end prize has been donated by <http://www.comtronics-aero.com>. A new aviation headset.. Missed guess's still count one point each, tallied to the end of the year with a 2 guess limit per month. **Thanks to those that called Aircraft Spruce and mentioned this contest in the newsletter as they have agreed to continue their sponsorship. Prizes are available thanks to them. Please give them a call with your next order and tell them how much you appreciate their generous donation to our monthly newsletter.** Submit your answer to the newsletter editor to be eligible for a prize to be awarded at the regular chapter meeting. **You must be present to win but points are cumulative and guesses count.**



Winning entries will be decided by the email that is received with the earliest time stamp and the correct naming of the make/model of the pictured airplane as discovered. Winners that correctly identified the winning make/model that do NOT attend the meeting will forfeit the prize to the next available submission. Winning entries will be decided by the email that is received with the earliest time stamp and the correct naming of the make/model of the pictured airplane as discovered. Winners that correctly identified the winning make/model that do NOT attend the meeting will forfeit the prize to the next available submission. Chapter Judge's decision on correct identification is final.



Airplane product liability lawyers are to aviation what vultures are to roadkill. They just keep picking at it until it's all gone.

What is it?  
Sponsored by:





16610 Von Sosten Road  
Tracy, CA 95304  
[jeffrylite@comcast.net](mailto:jeffrylite@comcast.net) or  
[President@eaa663.org](mailto:President@eaa663.org)

