



# THE GRAPEVINE



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

Vol. XXVIII,



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## August Meeting And Program

**NOTICE:** Our July meeting will take place at 7:30 P.M. on the 5th of August. The meeting will be at the terminal - KLVK.

### Calendar:

Month	Date	Speaker	Topic
July	1	Chuck Ray	Designing and building an LSA
Aug	5	Darell Ray	Building Fiberglass

**Our August Program** will feature Darryl Ray presenting some vacuum bagging techniques.

My first memory of flying was in the back seat of my Dad's TriPacer. Later on Dad bought several Bonanzas and I remember a number of vacation trips in them. It wasn't until I was in my late 20s that I took flying

lessons in a 150 and 152 while in grad school at University of California at Santa Barbara. Santa Barbara airport was a fun and beautiful place to learn to fly. After leaving grad school, I went to Galveston Texas but unfortunately, I did not keep on flying.

About 22 years later, I was at a stage in my life that I wanted to do something different. I suggested to my brother Chuck that it would be fun to do something together, so why didn't he do what he always wanted to do, design an airplane and we would build it together! Well that was late 2004 and 6 years later we are in the middle of what we thought was a 3 year project. The good news is that the design is solid, and we continue to make progress. Besides building the plane, after a 24 year hiatus, I took flying lessons and again became current flying 172s, 152s and an LSA, the Dova Skylark.



## Important NOTE:

**BBQ SPECIAL ANNOUNCEMENT:** Bob Tucknott publicly offered to host the August 14 BBQ at hangar 239. For those who normally sleep through meetings, Bob further offered to provide rib eye steaks! While some may consider looking this gift – ah – beef in the mouth, the traditional EAA member reaction is to inquire about who is bringing the A-1 Sauce. Thank you, Bob!

For more information email : [President@eaa663.org](mailto:President@eaa663.org) or call 925-872-7423

**Minutes:**

DIRECTORS MEETING, EAA CHAPTER 663, 7/15/2010, 7:30 PM, RALPH'S PLACE.

**Ralph** Cloud, Dick Jennings, Brad Olsen, Brad Oliver, Mark Palajac, John Goldsmith, Bruce Cruikshank, Bob Farnam, and Trina Anderson were present.

**Mark** Palajac reported \$4485.65 in chapter funds. Subtract \$899.99 for the new compressor. It should arrive in a couple weeks.

**Trina** reported that 27 Young Eagles were given rides 7/10 at Tracy Airport. She also reported on Chesley Sullenberger flying three Young Eagles on Monday 7/12 in Jerry Sickafooses's Cessna 210 out of Livermore Airport. (See <http://www.eaa663.org> for pictures)

**Barbeques:** The next one is Saturday 8/14 hosted by Bob Tucknot at his hangar #239 on the south side. He is graciously supplying everything! All you need to bring are tales of Oshkosh and other stories.

**Tools:** Bob Farnam mentioned that the chapter needs a new spot to park the trailer (along with a new trailer). Brad Oliver is donating a brake pad riveting tool to the chapter tool collection. Ralph discussed what to do with the old compressor. The tank and motor are still in working order. It may end up getting auctioned off to the highest bidder in a month or two.

**The program** for the August meeting, other than Oshkosh stories, will be Darryl Ray discussing and demonstrating composite construction techniques. We will meet briefly at the terminal and then move the meeting to the Ray hangar at the very northeast corner of the airport.

**Announcements:** Next meeting: 8/5, next board meeting: 8/19. This year's Quicke Fly-in will be the weekend of 8/21 and feature Quicke builder and record breaking test pilot Norm Howell.

**Respectfully** submitted, Bruce Cruikshank, for secretary Kirk Knight.

July 2010 Minutes

GENERAL MEETING, EAA 663,

7/1/2010 Livermore Terminal

Called to order 7:31 PM by President Ralph Cloud.

Other Board Members in attendance were Marc Palajac, Treasurer and Kirk Knight, Secretary.

**TREASURER'S REPORT:**

Marc reports 90 members and a bank balance of \$4,533.84. Report was moved by Trina Anderson, seconded by Dave Dent, and approved by membership.

**The minutes** for the June meeting were approved from "The Grapevine."

**BBQ:** The next BBQ is July 31 at hangars 113-114. Charcoal will be ready about 5PM. Bring an entree for your party and a side dish to share. Liquid refreshment, featuring a variety of Costco Mexican beers, is provided.

**A reminder,** Bob Tucknott has offered to host the August 14 BBQ at hangar 239. For those who normally sleep through meetings, Bob further offered to provide rib eye steaks! Thank you, Bob!

**YOUNG EAGLES:** Trina Anderson, has organized next Young Eagle event on July 10 at TCY. Pilots are kindly requested to pre-register with Trina ahead of time, but more importantly join us at 9:30AM for 10:00AM flights.

The August 14 Young Eagles event will be at LVK. Again, pre-register, 9:30 AM sign-in for 10AM flights.

**BOB FARNHAM and TOOLS:** Bob has investigated the replacement compressor for the club bead blaster. The bead blaster is used a couple times a week and has served the club for 14 years. It was a 2HP unit not designed for continuous use.

Bob is recommending an Ingersoll Rand 100% duty cycle with high CFM with choice of 3HP for \$599 or 5HP \$869 220 volt. Bob noted that an alternative is a replacement pump rather than complete compressor. Discussion clarified several points.

Bob Cowan proposed a motion to buy a new 5HP compressor not to exceed \$1,000. Motion unanimously approved by membership.

**BRAD OLSEN** – website updates, now with tool thumbnails.

### **ANNOUNCEMENTS**

Next Board meeting 7/15 at Ralph's FBO at 7:30 PM.  
Next regular meeting is August 5 at LVK.

WICKS has kindly provided catalogues, take one (got mine!)

### **MAINTENANCE TIPS WITH DAVE DENT**

Dave started by asking for a show of hand of A&Ps in attendance: 2 hands. How many people do once a year compression test? How many have never done a compression test: none. Hot or cold engine: a mix. Dave recommends testing every 50 hours or once a year.

Dave noted that like taking your blood pressure, proper procedures and safety are critical. You're playing around a propeller with compression that can spin the blade in either direction. He noted that many A&Ps don't know proper methods.

He introduced two compression gauges, E2M1000 and E2M, that have a bypass orifice. They may look alike, but have subtle difference. Former is for large bore cylinder, latter for less than 5 inch small bore cylinder such as on O-235. Use the wrong one and you'll get erroneous compression reading. The orifice is used to calibrate the gauge.

**COLD COMPRESSION TEST:** Dave recommends 2 people for safety – one to hold blade, other to measure. First, take out all the top plugs (or all bottom plugs, whichever is easiest, but be consistent.) Bring a cylinder up on compression to TDC. And **HOLD THE PROP BLADE! DO NOT LET GO OF THE BLADE!**

Dave likes to do this in order of firing. If you have magneto you'll hear a snap from the impulse coupling. Remember, that's live voltage, respect it!

Why shouldn't you let go of the blade? It will scalp you...if your're lucky that's all it will do. The O-540

is especially dangerous as if you let go it will swing backward with remarkable speed and force. E=MA

What's important? You want uniform numbers on all cylinders. Feel the pressure, bring the blade through the click.

**HOT COMPRESSION TEST:** If your cold test is low say in the low 60s, fly at 75% power for about half an hour and then test.

Dave gave a few hints for listening. If you hear air leak out the exhaust while holding blade you have a burnt exhaust valve, possibly just carbon build up, but often the lands wear out. If you hear air leak out oil filler cap, you have bad rings. If air leaks out carb you have bad intake valve.

**WARNING:** Prepare for your FAA RAMP CHECK. Bring key documents at all time, especially homebuilts. Registration, airworthiness, W&B, POH, operational limitations certificate. And be sure the registration matches you data plate.

**John Meyer** has been working with the club prop balancer and has noted the need to treat the reflective material as a consumable as about 2" are needed per balancing.

**Wes Isberg** has hangar space available to share.

### **TONIGHT'S GUEST**

The Ray Brothers' CR3, with Chuck Ray on the design this month, and Daryll next month on construction.

**Chuck** and brother Daryll set out to build a unique homebuilt and along the way decided that as long as they were building one, they'd build the tooling necessary for mass production.

The key specifications begin with LSA qualified to ASTM F2245-04 Standard Specification for Design and Performance of a Light Sport Airplane The Ray Brothers defined their target as a 2 seat, side-by-side seating, 1,250 pound gross, 80 HP, 100 sq foot wing. They wanted low wing and tip-up canopy for good visibility tri-gear for easy landing, and no ballistic

chute to keep down weight. The 45 KT stall speed in the LSA spec drives the wing area and type. However, they also wanted the ability to support up to 125 HP with engines as varied as VW, Corvair, Rotax 912 and Jabiru 2200 or 3300 This variety represents a wide change in gross weight and W&B. They decided to build the aircraft with removable outer wing panels, enabling the fuselage and center wing section to hold all fuel. This enables both portability but also easier construction.

Although Chuck graduated from CalTech, his professional experience was in medical device injection molding, not aircraft design. He set out to learn what he didn't know about airfoils and aircraft, compiling a tall stack of books on they principles of aerodynamics covering decades of empirical research. Martin Holman's books

Building a clean sheet aircraft is a huge undertaking. Chuck & Daryll's skills include extensive fiberglass experience with methods championed by Burt Rutan. Much of the process of designing an aircraft is trading off ease of construction, cost, weight and strength.

My apologies to Chuck. I tried to keep up with the details, but Chuck can talk technical terms faster than I can type with accuracy. Suffice to say Chuck is a walking encyclopedia of both big ideas in airfoil design since the '30s and small details such as specific techniques for optimal fiberglass ply strength with vacuum bagging.

Be sure to come to the August meeting where we'll head out to the Ray's hangar to see theory embodied in fiberglass.

**MEETING ADJOURNED** at 9:57 PM for pie.

Minutes respectfully submitted by Chapter Secretary Kirk Knight  
Changes or corrections welcome.

### **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).**

**Mailbag:** Harry Crosby sent me a nice article on flying boats. I hope you enjoy it in place of a Grapevine talking article this month

### **"Grapevine Talking"**

For those of you that haven't taken the opportunity, experience breakfast with the chapter every Saturday morning at 8:00 AM at Shari's in Livermore. If you haven't been to the chapter [website](#) lately, take the opportunity to stop by and view the excellent work by Brad Olsen.



**Miles Miller**  
**Ups and Downs**

### **WWII David S. Hazelton Class 1942**

I was a senior at Dartmouth in December 1941 when Pearl Harbor was attacked. My fellow students and I were in our rooms in the dorm when a guy who had been listening to the radio ran down the hall yelling about the attack by the Japanese. Our first response was confusion and wondering where the heck Pearl Harbor was! A Navy officer came to campus in January 1942 and lectured on naval aviation careers. I wanted to do something to defend the country and preferred to choose my own path rather than wait to be drafted. As a result of his information I traveled to Canal St. in Boston, MA to sign up for cadet training to begin after graduation. If I finished successfully I would become an officer in the Navy. I started active duty July 2, 1942 at Squantum Naval Air Station, Quincy, MA. After 3 months of "elimination training" in bi-planes, with many ups and downs (no pun intended), I was now an Aviation Cadet.

This is now October 1942 and I boarded the train with my fellow graduates to travel to Pensacola, FL for advanced training. I had developed a fever and sore throat but refused to be left behind by my classmates. The four day trip was grueling, upright seats and no amenities. I grew sicker and my group leader tried to have me get off for treatment at a base along the way but I insisted on staying with the group. When we arrived in Pensacola I was



taken by ambulance to the hospital and remained for a week to be treated. As a result I was put in the next training group, my original team having moved on.

We had classes on the ground in navigation, aerodynamics, engines, etc. In the air we flew bi-planes, fixed-wheel landing planes, retractable-wheel landing planes and finally sea planes. March 2, 1943 I received my wings and designation as a Navy ensign.

I then spent 2 months in combat training in Jacksonville, FL flying Catalina PBVs, a Navy patrol seaplane.



In August 1943 I transferred to Kaneohe Naval Air Station, Hawaii and began duty as a co-pilot on PBVs. Our squadron VP-14 was sent to Canton Island in the South Pacific for preliminary combat missions. During our first patrol mission we were attacked by a Japanese "Emily" seaplane. This plane was much more heavily armed and faster than ours and did "fighter runs" on us. This attack occurred over Howland Island where Amelia Earhart had intended to land. Our plane sustained much damage including a lost engine. We escaped into the clouds and made it back to Canton safely. I understand that this is the only recorded event when two seaplanes fought each other during World War II.

At the end of August 1943 we returned to Kaneohe and prepared for further South Pacific duty. In late September we flew to Esperitu Santo island, in the Melanesian region, and began to patrol looking for signs of enemy activity in the surrounding area. For the next several months our squadron kept moving from island to island in the Solomons. We were involved in patrolling, some bombing of Japanese bases and "Dumbo" rescue work. (Dumbo the flying elephant had become synonymous in the Navy for rescue by sea plane)

The week before Christmas 1943 our crew was ordered to pick up Army General Murray with his staff at Ondonga and transport them to Treasury Island, all in the Solomons. We flew to Ondonga, loaded General Murray, his aide and officers on the plane handing them life jackets as a precaution (we normally did not wear them when flying). I strapped the general in the Navigators seat and reassured him about the sturdiness of plane, explaining that it was really a boat. As we began to take off the plane suddenly jarred, lurched and a stream of water began flowing about my feet! Thinking that the plane was sinking, my biggest concern was rescuing the general. I unlatched the escape hatch overhead, threw his life jacket over shoulders and boosted him up through the opening yelling "watch out for the props!"

He shouted "Are you trying to kill me?!" since I was pushing him up into the moving propellers. At this time he observed we were now on a reef and came back down into the cabin where the water had stopped rushing in. The plane was firmly stranded and a Marine boat had to come fetch the general and his staff. Our crew was in the doghouse for failing in our mission. Our punishment was to remain stranded for 3 weeks, including Christmas, on Ondonga Island with the Marines.

On February 5, 1944 our crew was assigned a Standby Dumbo Rescue for a bombing mission on the Japanese base Rabaul. (The area we were circling was near the Japanese prison camp where classmate Joe Nason '42 was trying to survive.) On the trip back one of our fighter escorts spotted a life raft and we landed in the open sea. We picked up an Army Airforce pilot who had been afloat for 10 days. As we threw the rope to his raft it accidentally knocked him into the sea. A crew member had to quickly jump in to rescue him since he was too weak to hold onto the rope. The take-off in the swells was rough but we made it.

From September 1943 until our return to Kaneohe in June 1944, our squadron successfully rescued 25 pilots and airmen in open-sea landings. I then returned to the states in June 1944 for a one month leave. I applied for a transfer to land planes and was sent to Whidbey Island, Washington in August 1944. I trained in PV-1 twin-engine

Venturas. Due to much inclement weather our training took longer than usual so it wasn't until March 1945 that I graduated with a designation of Patrol Plane Commander.

With my crew of five, including a co-pilot, we were sent back to Hawaii where we continued training and familiarization. By now I was a Lieutenant Senior Grade.

We were transferred to Tinian Island July 1945. We joined Patrol Bombing Squadron 128 and began patrolling for Japanese submarines.

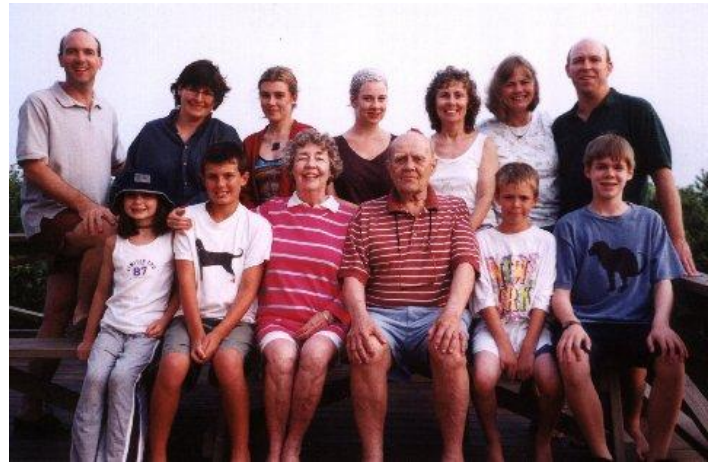
On August 15, 1945 World War II ended, which was a relief as our squadron had been given orders to transfer to Okinawa to start bombing Japanese fortifications. These orders were rescinded due to the end of the war. We did "make-work" flights, killing time until my "numbers" came up to return to the states in November. I was officially discharged in January 1946.

#### Post War

I returned to the Dartmouth campus that same month and began my MBA at Tuck, finishing in August of 1946.

Early in my career I had a number of jobs in shoe manufacturing, optical products and finally financial planning. I earned my CLU degree and worked as an independent agent working with life insurance, investments, pensions, specializing in tax shelters and business planning. Along the way I dated and married in 1949 a wonderful girl, Jean Buckley, from my hometown of Southbridge, MA. We were married 52 years until her death in 2002. Together we raised our 3 children, Lee, Scott and Mark in Woodstock, CT where I still reside. They produced our 6 grandchildren. At the age of 80 I totally retired from financial planning. My hobbies now are gardening and reading since my tennis and golf days are over. My winter activity is tending my wood stove.

The photo I've attached is one of our family's yearly get-togethers on Martha's Vineyard in 2001.



#### Consolidated PBY-5A (Catalina) Specifications

##### General characteristics

- Crew: 8 - pilot, co-pilot, bow turret gunner, flight mechanic, radioman, navigator and two waist gunners
- Length: 63 ft 10 7/16 in ( 19.46 m )
- Wingspan : 104 ft 0 in ( 31.70 m )
- Height: 21 ft 1 in ( 6.15 m )
- Wing area: 1,400 ft<sup>2</sup> ( 130 m<sup>2</sup> )
- Empty weight: 20,910 lb ( 9,485 kg )
- Max takeoff weight : 35,420 lb ( 16,066 kg )
- Powerplant: 2× Pratt & Whitney R-1830 -92 Twin Wasp radial engines , 1,200 hp (895 kW each)
- Zero-lift drag coefficient : 0.0309
- Drag area: 43.26 ft<sup>2</sup> ( 4.02 m<sup>2</sup> )
- Aspect ratio : 7.73

##### Performance

- Maximum speed : 196 mph ( 314 km/h )
- Cruise speed : 125 mph ( 201 km/h )
- Range : 2,520 mi ( 4,030 km )
- Service ceiling : 15,800 ft ( 4,000 m )
- Rate of climb : 1,000 ft/min (5.1 m/s)
- Wing loading : 25.3 lb/ft<sup>2</sup> (123.6 kg/m<sup>2</sup>)
- Power/mass : 0.034 hp/lb (0.056 kW/kg)
- Lift-to-drag ratio : 11.9

##### Armament

- 3× .30 cal (7.62 mm) machine guns (two in nose turret, one in ventral hatch at tail)
- 2× .50 cal (12.7 mm) machine guns (one in each waist blister)
- 4,000 lb ( 1,814 kg ) of bombs or depth charges, torpedo racks were also available

#### Kawanishi H8K2 (Emily)

File:Kawanishi H8K Emily take off.png  
Specifications

#### General characteristics

- Crew: 10
- Length: 28.15 m ( 92 ft 4 in )
- Wingspan : 38.00 m ( 124 ft 8 in )
- Height: 9.15 m ( 30 ft )
- Wing area: 160 m<sup>2</sup> ( 1,721 ft<sup>2</sup> )
- Empty weight: 18,380 kg ( 40,436 lb )
- Loaded weight: 24,500 kg ( 53,900 lb )
- Max takeoff weight : 32,500 kg ( 71,500 lb )
- Powerplant: 4× Mitsubishi Kasei 22 radial engines , 1,380 kW (1,850 hp) each

#### Performance

- Maximum speed : 465 km/h ( 290 mph )
- Range : 7,150 km ( 4,440 mi )
- Service ceiling : 8,760 m ( 28,740 ft )
- Rate of climb : 8.1 m/s (1,600 ft/min)
- Wing loading : 153 kg/m<sup>2</sup> (31 lb/ft<sup>2</sup>)
- Power/mass : 0.22 kW/kg (0.14 hp/lb)

#### Armament

- Guns:
  - 5 × 20 mm Type 99 cannon (one each in bow, dorsal, and tail turrets, plus one each in two waist blisters)
  - 5 × 7.7 mm ( .303 in ) Type 97 machine guns in fuselage hatches
- Bombs: 2 × 800 kg ( 1,764 lb ) torpedoes or 1,000 kg ( 2,205 lb ) of bombs or depth charges

Cool video's found on the internet.

[Now that's a tall building!](#)

[1950 Dodge Power Wagon](#)

[Another look at the upcoming amphib.](#)

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



Last month Bruce Cruickshank identified the photo. You too can win if you donate a winning photo. Send to your chapter editor. You will be notified prior to the newsletter being published if your photo has been selected and will then be eligible for the prize if no one correctly identifies it via email prior to the chapter meeting.



**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.**

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. Winners that correctly identified the winning make/model that do NOT attend the meeting will forfeit the prize to the next available submission.

The correct, first answer that attends the monthly meeting will be declared the winner. You will be notified of the winning entry at the monthly meeting. The winning entry that DOES attend the meeting will receive his/her prize at that time.



What is it?  
Sponsored by:



You hear about the FAA's new requirement? It's for a DFCM (Distance From Clouds Meter). It has to be downloaded and faxed to them after every flight. It's a joke now, but don't think it hasn't crossed their minds.

I hope you enjoyed reading this month's newsletter as much as I had in doing it for you. If you have any suggestions to make it better or any feedback, please send to me at the following [jeffrylite@comcast.net](mailto:jeffrylite@comcast.net).





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