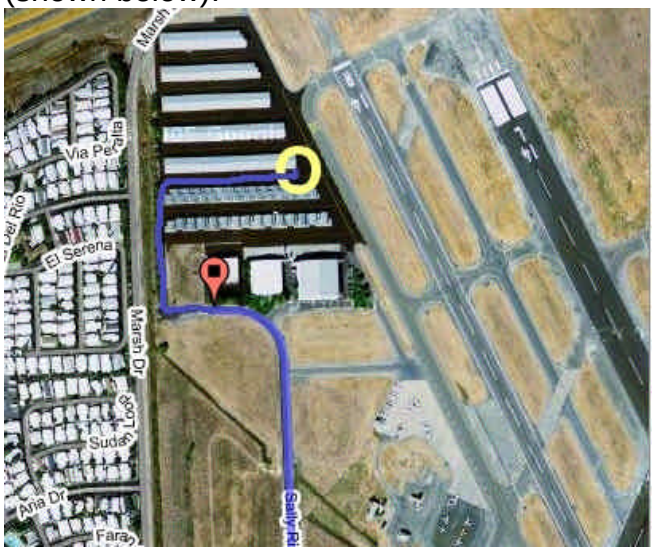
The Cleco

Experimental Aircraft Association Chapter 393

MEETING LOCATION! Our speaker for March 22 is our own Bruce Seguine, who will share with us some of his secrets of shaping metal, as seen in his experimental Swift (below). We hope to have a hands-on demonstration **at his hangar**.

Bruce and his plane can be found on the west side of the airport in the LCA hangars. Follow Pacheco to Center to Marsh to Sally Ride through the gate (you may be asked to park at the gate), and on to the yellow circle (shown below).



Ken McKenzie's Presidential Perspective:

Not building or being a current pilot puts me at a distinct disadvantage in coming up with interesting and/or relevant topics for the monthly column. Fortunately those are both changing even if somewhat slowly.

I am currently working my consciousness back into that of the aviator. After a 6+ year hiatus and with the generosity and admirable patience of one of our very own 393 members I am being reacquainted with the art of piloting. I can't believe how much there is to forget. I have to say that I'm becoming a big fan of the chapter fly-outs. Through this under appreciated activity I'm slowly readying myself for that day in the not-too-distant future when I will have my own plane to fly.

As expected, my biggest hurdle is with radio work and FAR issues. However I was also quite alarmed at how the simple tasks of flying the airplane had deserted me. It is true that the airplane I have found myself in is much more complex than any I have flown before but simple tasks such as flying a heading, watching for traffic and listening for radio calls seems to drive simple tasks like planning descents, entering and leaving the pattern completely out of my capability. All I can say is it all seems so new, and yet not new. I've done this in the recent past and done it effortlessly and unconsciously so it is very alarming how hard it seems to be to get back into the proper mindset. The only conclusion I have come to is that this activity that we all have in common is really a lot more complex and difficult than I have previously believed. It seems that there is really no substitute for practice and lots of it. Fortunately I have a bit of time to prepare before I will, once again be on my own.

EAA 393 General Meeting
February 22, 2006

President Ken McKenzie welcomed members and guests.
Ken has received a call from Bob Hass in Caltrans, who is in charge of the Retirement ceremonies for the Carquinez bridge span. When the span was opened, Lindberg had just landed in Paris, and the opening was ignored by the media. Bob would like to enlist some antique airplanes to fly by during the ceremony. The ceremony is scheduled for March 17. Ken and the members came up with several suggestions for Bob.

Harvard Holmes announced that the fly out destination was Harris Ranch.

Ken McKenzie noted that Sportair is holding an Aircraft Builders Workshop in Watsonville on March 18-19, and he highly recommends it.

Our speaker was Bob Comyn who is building a Lancair IV-P at Gnoss field. He started construction in January 2001 and began considering an all-electric instrumentation system. At the time, the Lancair Mail List participants were negative about the prospects for an all-electric system. Much has changed since then, with many new airplanes using all electric systems, such as the Columbia, Cirrus and even Cessna.

For IFR flight, the FAA emphasizes the availability of multiple power sources. With an electric system, you get equal functionality with the possibility of getting all instruments restored after a failure using redundant electrical power. The reliability of B&C standby alternators is superb, with a failure rate of 1 in 100,000. The MTBF for glass instruments is about 10,000. They have random failures, but they don't wear out. The light source for the backlight may be a weak link.

Bob presented example circuit configurations for single and dual alternators with single and dual batteries from Bob Nuckolls book.
http://www.aeroelectric.com/. Bob decided that he needed at least a second alternator and possibly an extra battery. The weight would be approximately the same as a vacuum system, and the maintenance would be considerably less.

Comparing the cost of an electric system with traditional systems, the electric instruments are more expensive. But if you use an integrated system, such as the Dynon D10A, which combines multiple instruments in one display, including the ASI, the Altimeter, etc., the whole panel is cheaper.

Configuring the electrical buses is complicated. Bob Nuckolls does not recommend an avionics bus, but Chelton does not agree. Essential bus items would be panel flood lights, navigation radio, turn coordinator and transponder; Bob would add a communications radio to this list. Together these would be under 3 Amps.

Bob discussed the use of a battery bus, typically a bus on the battery to power clocks, and items needed even while the main bus is off, like luggage compartment lights. Bob decided to use self-contained batteries in his luggage compartment lights.

With a dual alternator, dual battery configuration, a cross feed connector is needed.

Bob decided to use the GAMI supplenator http://www.gami.com/supplenator.html alternator and electronic load management system (about $3,000). The supplenator includes a self-excited alternator (with a permanent magnet), and a load shedding controller. The load shedding controller will manage three buses A, B, C, sense overload and drop bus A and the B as required to keep the load within limits with a

failed alternator. He has one battery and two alternators. Bob recommends sizing the primary alternator at 150% of the continuous load and the secondary at 100% of the essential bus load.

Bob's panel includes a 2 screen Chelton, a Dynon (for backup), audio panel, Garmin 530 and 430, transponder, TruTrak autopilot, Grand Rapids engine analyzer, cockpit altimeter and pressure controller, angle of attack, a CDI (from the 530), and a CO detector.

Introductions/Progress Reports

Ken McKenzie: Glastar -- Ken and Linda are converting their family room into a workshop and got the compressed air line installed.

Harvard and Sara Holmes are working on the hydraulics on their Lancair IV-P.

Pete Mitchell and Don Baldwin are working on a Sonex. They are on their second canopy and have not cracked this one. They will pull the fuel tank to install a fuel indicator.

Ernst Freitag has an RV-8 that is 3 ½ years old. He is working on an RV-10 and he has finished the tail section. It goes together very quickly.

Peter Degl'Innocenti is working on a replica P-40. He has finally gotten the gear under control after a set back.

Scot Stambaugh has a flying F1 Rocket. He recently did an owner-assisted annual on his Cessna 310.

Ron Robinson has a Glasair I RG with 1150 hours on it. He is working to get used to more economical power settings.

Fred Egli has a Lancair IV. He just finished the annual (about 1 month). The plane is very easy on maintenance.

Help them move! Saturday, Mar 25

Ken McKenzie's Glastar wing jig, wing & tail are arriving and assistance is needed to unload it. Anyone interested in helping should contact Ken at 283-3119

EAA 393 Board Meeting

March 2, 2006

Attending: Ken McKenzie, Scot Stambaugh, Louis Goodell, Peter Degl'Innocenti, Guy Jones, Harvard Holmes

The Cleco was reviewed and several suggestions for improvement were made.

Ken would like to see more articles on homebuilding. He will call Ray Nilson to see if he can interview Ray and write about what Ray is doing. Other interview subjects would be Ernst Freitag, Bill Call, etc. Harvard has some material on his Builders Workshop time in Redmond which he will include as space permits.

Ken would like to see the Cleco have adequate content to stay at 8 pages.

We need a tech tips article -- Bruce has put G sensors on his engine to monitor vibration and he has also used manometers to measure cooling airflow. An interviewer is needed for these topics.

Ken would like to see the member's projects updated on the web. Scot will help with the pictures.

How much web space are we using? [128 MB - editor].

No speaker has yet been chosen for April. A PA system would be desirable to help the speakers be heard.

Chapter cash flows were discussed. Additional income could come from selling hot dogs at Golden West. Additional expenses could be incurred for 1) a PA system; 2) expenses associated with speakers for our meetings, 3) sending Young Eagles to the EAA Air Academy.

The email announcing the Cleco should ask recipients if they wish to forego the paper copy.

Treasurer's Report as of Mar. 7, 2006

Savings: $2618.69 Checking: $1935.72

EAA 393 Senior Fly Out
February 22, 2006
The Seniors, those who don't work (as much as they used to), have impromptu fly outs on their own schedule. Bob Belshe took Fred Egli, and Ron Robinson took Harvard Holmes up to Lampson.


Bob Belshe's Lancair 235/320


Ron Robinson's Glasair I RG

EAA 393 Fly Out
On February 25th, the Chapter went down to Harris Ranch.


Ron nails the final approach.


Harry Heckman's Lancair with Rob Hadley


Harvard Holmes brought Ken and Linda McKenzie


Ron Robinson brought Tom Howard

The Radar Screen

EAA Aircraft Builders' Workshop
March 18-19; Watsonville, CA
http://www.sportair.com/

Buchanan Master Plan Meeting
March 22, 2006 7 PM; Crowne Plaza Hotel

Buchanan Field is in the midst of updating its master plan. An updated Master Plan is an FAA requirement to obtain airport improvement funds. We are now in the middle of this master planning process, conducted by The Barnard Dunkelberg & Company Team.
http://www.buchananfield-byronairports.org/ccrMPupdates/ccrMasterPlanUpdates.htm

Safety Seminar

March 23, 2006 at 7:00 PM
Contra Costa Water District
1331 Concord Ave, Concord, CA 94524

"Aeronautical Little Known Facts"
Topic: Comprehensive review of GPS procedures, TFR's, Runway procedures, Airspace, aeronautical chart symbols, airport data, what's new

Safety presentation synopsis: Aeronautical charts and publications contain a wealth of information. Some of that information has never been taught, or has been taught and quickly forgotten. Understanding chart information can save time, money and sometimes lives. To view further details and to register for this event, click here:
http://www.faasafety.gov/SPANS/event_details.aspx?eid=9732

EAA B-17
The EAA's B-17 will be at Hayward May 5-7.
http://www.b17.org/tour/

Collings Foundation
Pat Peters previously announced that the Collings Foundation
http://www.collingsfoundation.org/menu.htm
would be coming to CCR, at Pacific States Aviation, on May 22 to 24th. [The web page indicates Hayward?? - ed.]

Airport Development around MDPA
A report from the MDPA mailing list:

The Board meeting to discuss the proposed 9 acre development that our clubhouse sits on was held on Tuesday. Before anything got started the item got moved from the consent calendar to a discussion item. In the discussion phase Supervisor De Saulnier asked that the entire proposal be moved to the aviation committee for hearings and report back to the Board in 60 days. MDPA members Russ Roe, Dave Evans, Richard Roberts and Vince Siebern made short statements and several others spoke. Everyone agreed the development is needed and will benefit the airport. The only question is who will build the project. The full Board voted to move the item to the Aviation Committee and they would report back in 60 days.

This gives everyone, including MDPA, a chance to review the proposals and decide which one best protects us. Right now it looks like the local developer, AP, has the best interest of MDPA covered.

We will keep you informed as this and other developments that affect us are acted on. In the near future we will ask you to attend the Aviation Committee meetings and present your views to the Committee. I want to thank all of you that send e-mails to the Supervisors. Public support does help.

See you next Friday, March 17th, for corn beef and cabbage at the MDPA dinner. Don't forget to wear your green.
Vince Siebern

Hayward Air Race
May 18-20, 2006; Hayward to Laughlin, NV
http://www.hwdairrace.org/

The 2nd in a series of articles on projects under construction by 393 members and/or Buchanan residents.

Harvard & Sara Holmes build a Lancair

Can a 60-year-old private pilot find happiness building a Lancair IV-P?

It was inescapable, I just didn't see it coming -- becoming a pilot, that is. My earliest memories are of a wrecked Piper Cub fuselage in the backyard and a Link Trainer in the garage. But a divorce meant that I didn't see that much of my dad, who was a structural engineer for North American Aviation during WW II. Around ten, there were several flights in an Ercoupe, including a night taxi where I taxied the plane as my dad walked ahead with a flashlight. For a time, my mother illustrated aircraft construction for Douglas Aircraft in Santa Monica. Fast forward through college (Computer Science), kids, work, and a second marriage. Then, at 17, my eldest daughter said she would like to fly airplanes! She gave me my first small airplane ride in over 20 years! She "liked talking on the radio." After college, she became an Air Traffic Controller for Oakland Center. In the early '90s, with the kids gone, my wife Sara gave me a radio controlled glider kit one Christmas. Great fun, but in 1996, my wife said I should try real airplanes so she could go along.

In 1997, the day after Thanksgiving, I passed my check ride in a Citabria and gave Sara a ride a couple weeks later. We rented for a few flights, but we felt constrained by scheduling issues. My sister's husband had resumed flying after a long hiatus, so we bought a 1966 Mooney M20E in partnership with him. As a student pilot, I had joined the local EAA chapter and gotten rides with other members. I knew right away that I wanted to build my own airplane, but I also knew that I wouldn't have time for this until I retired.

Several factors influenced the choice of airplane: We used our Mooney for long distance trips, so a traveling airplane was desired rather than a fun flier. I was a novice at building, so the airplane had to be popular, with local examples and assistance available, and from a financially stable supplier, for parts and ongoing support. We had ridden in Glasairs, Lancairs (235s and IV), RV-6As and others. None of them seemed to have any bad handling characteristics. The RVs were most popular in the local area, with Glasairs and Lancairs close behind. With Glasair having financial difficulties, the choice boiled down to an RV or a Lancair. Sara wanted a four seat airplane as we always filled 2 seats and often 3 or 4 in our Mooney, so that put the Lancair ES and IV in the lead. I was happy with retractable landing gear from our Mooney experience, and I liked the performance advantage of retracted gear. The composite planes had smooth sweeping curves that were attractive, while the added weight of composite aircraft was a negative. The pressurization option on the Lancair IV-P was attractive, as I like to fly high, yet Sara is somewhat affected by pressure changes as we climb and descend. I checked with insurance companies and found that with a little work, I would be insurable. (Since I purchased the aircraft kit, insurance has become more difficult, due to a poor accident record in Lancairs.) While deciding what aircraft to build, I also looked at resale value and decided that Lancairs were no worse than most others, and the Lancair IVs might be a little better.

At work, my pension plan has incentives to work until age 60. So, a year before that, I made the down payment on a Lancair IV-P to lock in the price and builders' workshop schedule. My last day at work would be April 7, 2004. On April 8, we packed the car, and on April 9 we drove from Berkeley up to Redmond, Oregon to start 4 weeks of builders' workshop at the Lancair factory.

Lancair wasted no time with us. The first morning was spent on basic safety reviews and then we were assigned to Kerry Dowling, the technician who would be our instructor, mentor, coach, helper, and constant companion for the next four weeks. Then we were given a dozen or so large boxes full of airframe parts -- nuts, bolts, clamps, tubing, rod ends, hydraulic pumps, and so on, all the way to paper cups and tongue depressors for mixing epoxy. Sara became the parts specialist and went through the inventory with Lancair staff, while I jumped right into building.

The Fastbuild Kit includes all of the parts and materials needed to build the airframe. Then you add the engine, avionics, upholstery and paint. The composite pieces of the kit are molded in the Philippines to save labor costs. Then the kit is partially assembled to the point that the critical wing-fuselage junction can be assembled and aligned. This results in a fuselage that has most of the bulkheads, the wing mounting shear webs, and the landing gear sub-frame installed. The wings have the spars and ribs molded together and the upper wing skin glued on to give rigidity to the wing assembly.

WEEK ONE

The first week in the builders' workshop is spent "closing" the horizontal stabilizer and elevators, completing the wings plus some work on flight controls.

Here is Harvard applying epoxy mixed with flox (chopped cotton) to the spar caps for the horizontal stabilizer. He soon learned to wear his sleeves long to keep the epoxy off his skin.

We ordered the optional speed brakes and these had to be installed before the bottom skin could be glued to the wing. This is a typical construction sequence.

A rectangular hole has been cut in the wing, and the rectangular cover plate for the speed brake was fitted in the hole and temporarily glued flush with the outer skin surface. Then the wing skin is reinforced from the inside with epoxy and flox. Then the cover plate is used to locate holes for the attachment screws. Behind these holes, nut plates are installed, using countersunk rivets to hold the nut plates to the inside of the skin. After the mounting for the top plate of each speed brake is done, then the bottom of the speed brake is anchored to the bottom skin of the wing with a reinforcing pocket. The speed brake box is installed in the top skin, the anchoring pocket is put on the bottom of the box, epoxy and flox are put on the bottom of the pocket, and the bottom skin is put in place under the wing to allow the epoxy and flox to glue the pocket to the bottom wing skin in the correct alignment.

[To Be Continued…]

Meeting Schedule (2006)

General (Wed.)	Fly Out (Sat.)	Board (Thur.)
Mar 22	*Mar 25*	*Apr 6*
Apr 4-10, Sun 'n Fun		
Apr 26	*Apr 29*	*May 4*
May 22-24, Collings Foundation		
May 24	*May 27*	*Jun 1*
Jun 9-11, Golden West		
Jun 28	*Jul 1*	*Jul 6*
Jul 5-9, Arlington		
Jul 15, Picnic	*Jul 29*	*Aug 3*
Jul 24-30, AirVenture		
Aug 23	*Aug 26*	*Sep 7*
Sep 13-17, Reno Air Races		

Our meetings are open to the public. Everyone can consider themselves invited. EAAers might make someone else happy by introducing them to our Chapter, getting them involved in projects, fly outs and just plain good old camaraderie.

Our normal meeting time is 7:30 PM on the 4th Wednesday of the month (except July, November and December) at the old terminal building on John Glenn Drive just south of the tower. Visitors are welcome.

Chapter 393 Fly-Outs are open to chapter members and their guests. Meet at the Buchanan Field terminal building at 10 am, and we'll try to match people and airplane seats to take as many as possible. If the weather is bad, the fly out will be postponed to the next Saturday, possibly with a change in destination.

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