

# Experimental Aircraft Association

## CHAPTER 393

### Concord, California

October, 1988

#### CHAPTER MEETING

October 26, 1988 Wed. 7:30 PM  
Buchanan Field BRING CHAIRS  
Terminal Building BRING CHAIRS

#### PROGRAM

North Pole Vignette

Lee Hamilton will be with us to tell us all about his recent flight to the North Pole (and back again) in his A-36 Bonanza. Bring your down jackets.

#### PRESIDENT'S MESSAGE

(Pirate's of the Caribbean appear to have left him speechless, proving the sword is more powerful than the pen.)

#### NOTAMS

Don't forget, Antioch Airport closes on June 30th 1989. That's permanently not for the day.

Radio Systems Technology of Grass Valley, CA is having a special promotion on their kits. Here's the deal: If you order something from them and mention your EAA Chapter's number, you will receive a 10% discount AND 20% of the sale will be donated to the chapter by RST. More info at the meeting.

The big picture. Aerial view of Oshkosh 88 posters are now available. More info on how to order at the meeting.

#### MINUTES OF SEPTEMBER MEETING

President Rich Powell reported on his trip to Disneyland, where he was conducting research on the latest rides and the effects of G-forces on hot dogs, soda, and cotton candy. He would have conducted more research, but "gate holds" were in effect.

The minutes of the previous meeting were approved and the treasurer's report was read and approved.

Rich presented information on EAA Air Academy "Super Saturday", a program designed to stimulate young people's interest in aviation. We need a chairperson and registrar.

Lyle Powell, our new Technical Advisor, gave us a complete run-down on the systems he's building into his Glasair III. Many of you wanted copies of program, so we have decided to include his outline in the next three issues of the newsletter. Look for them inside. Thank you Lyle and congratulations.

#### DUES ARE DUE

Dues are \$15 a year.

If your last name begins with any of the letters from L-Z your dues are past due. You will also notice your dues due date on your mailing label. Please check it out so that we will not have to drop you after the ninety (90) day grace period.

## VIEWPOINT

### Raining Oil by Larry Laughlin

Does everyone know about chrome cylinders? Well, I know a lot more now than I did a few months ago about Chromed Jugs and one thing's for certain: If they don't break-in right in under ten hours, forget it! You've got to pull them again, re-ring and hone, and try again. So, you're saying, "big deal Larry, I know that. So what else is new?"

I guess this tip is for those that said "Just keep flying her hard and maybe she'll break-in."

Sorry Charlie, I wouldn't recommend that to anyone after what I've been through. My. cont. 0-200 has blown through nearly 3 cases of oil and 40 hours, and it's no where near breaking in! In fact, it's downright dangerous to fly anymore. At this point, so much compression is blowing by the rings that the internal pressure is literally blowing 3 to 4 quarts of oil out per hour of operation! Yes, that's right! In less than an hour, you could be setting yourself up for a punch! Like seize, sputter, and quit time!

Fortunately, I've decided to throw in the towel. I've pulled the Jugs and we'll try it again. I guess the trick is to run them only 10 to 20 seconds to assure it's going to run. Then take it up on a cool morning for a hard hour flight. The CHT should drop in 20 minutes or so confirming a break-in. I think I ran the engine for 1 to 2 minutes before, which may have been just enough to glaze the cylinders. In any case, 20 different people told me 20 different ways to deal with it, which brings me to this point. I'll share the next break-in experience with you around Nov. or Dec. Till then!

Thanks to all our contributors. This is your column. Please send, opinions, helpful hints, jokes, gossip, anything, to Jordan Coonrad, P.O. Box 2878, Alameda, CA 94501.

## CARBON MONOXIDE

The Quantum Group, Inc. of San Diego manufactures a line of Quantum Eye CO (carbon monoxide) detectors for use in the home. They are interested in evaluating these devices in aircraft applications and are looking for between 6 and 12 participants in a test program.

Quantum will send a letter agreement to each participant, followed by four (4) Quantum Eye badges with Velcro fasteners. These badges are visual indicators, i.e., color change, and require no power of any sort. Badges are to be used in the aircraft with one being returned every 3 months to Quantum for evaluation. The test program is to evaluate the effects of barometric pressure changes, temperature, humidity and aircraft environment on the badges. Planes flown more often and higher will probably give the best test results.

To participate give your name and address to Ed Lester, (415)932-4513, Box 414, Orinda, CA 94563 before the end of October and you will be contacted directly by Quantum.

Ed Lester

## SPEAKING OF ENGINES

Howard Nelson is putting a 1987 Cougar V-6 auto engine in his RV-4 and will keep us posted on the project.

We'd like everyone to keep us posted. Please, let us know how you're doing.

## CALENDAR

- Oct. 26  
Chapter Meeting
- Oct. 28-29  
Salinas Int'l Airshow, Salinas
- Nov. 8  
393 Board Meeting
- Dec. 16  
393 Christmas Banquet

MY GLASAIR III SYSTEMS, outline

Lyle Powell

OCT. 1988

Powerplant IO-540, 300 HP stock except for Ellison carburetor. Fuel injection very expensive to maintain, starting problems and high fuel pressure and yards of plumbing. Slightly more power with Ellison and 5 psi fuel pressure: much better fire safety.

Slightly undersized exhaust tubing with 3 into 1 collector each side, 1 3/4" thick wall exit pipe each side. This system is relatively quiet, without muffler, and gives significant thrust recovery ( $F=MV^2$ )

Firewall 1/2" aircraft plywood with 2 layers woven graphite, one layer Nextel (ceramic cloth) and one layer glass cloth on front side, with hi-temperature resin. Back side 2 layers glass. Reason: excellent fire-proofing, good sound insulation, stiff structure where stiffness important (structural load plus non-resonance). Cost extra 8 pounds. Access panels in sides of lower cowl--access to plugs etc. Access hatch 10"x20" in front of windshield, surrounded by spar.

Engine Controls 3 cable quadrant control on left as in military aircraft and Varieze. All controls required in flight are on stick (microphone, pitch, trim, roll trim, autopilot disconnect) or on lower left panel (flaps, spoilers/speed brakes, rudder trim). So right hand can always be on stick.

Flight Controls Stock push-pull tubes for aileron and elevator and cables for rudder--except larger tubes for ailerons. Ailerons moved from their normal position to outboard 2 feet of wing and increased in chord (27 foot span wing). Effectiveness ratio and hinge moment adjusted to be within 10% of stock. Ailerons made of graphite--weigh 1.8 pounds each plus counterweight. Flaps 188% normal area--span 9.5 feet each, instead of 6 feet, plus chord increase of 1". Reynolds number increase results in 200%+ normal flap

effectiveness. Flap deployment system at both ends of each flap and many extra ribs to increase stiffness. Horizontal tail--graphite. Extra ribs in elevator. Walking beam rudder balance bar, mounted on top of nosewheel box. Eliminates rudder cable stretch with braking. Large dorsal fin, because of destabilizing effect of extended propeller shaft and 27 foot span (instead of 23 ft) both of which call for increased vertical tail.

Cooling 5.5" propeller extension allows low drag penetrating body shape of cowling and spinner. Pitot type inlet below spinner like turboprops (King Air 300, Cheyenne III), 30 square inch inlet area with  $\frac{1}{2}$ " radius edges. 16.5" diffuser cone results in 3.2 expansion ratio--leads to primary <sup>plenum</sup> in front of and below engine. Secondary plenum is above cylinders, yields high pressure for cooling. Oil radiator--dedicated outlet because oil radiator has much greater resistance to air flow than cylinder fins. Cowl flaps electric operation with 6 ounce gearhead motor and jackscrew.

Fuel Divided L and R tanks--72 gallons. Dual vent system to each tank. Recessed ice-proof vents in lower wing skin. Capacitance gauge in standing well in center plus 2 float gauges. 2 electric fuel pumps (each on separate battery) in parallel. No engine driven pump because it is principal cause of vapor-lock problems. Cannister type 12 ounce filter and pumps aft of tanks and below fuel level. 2 ball valves--handles hit leg in "off" position. No selector valve. No header tank--safety reasons and unwise structurally. Primer-solenoid valve from carburetor to 3 cylinders. Button next to start switch..

Coming next month:

Electrical  
Hydraulic Systems  
Vacuum

and more....

**UNCLASSIFIED**

**Tri-Q/Q-200** Needs new type canard built, fuselage finished to painting, nice panel, no firewall forward. \$5500.00 Ron Partain, 415-779-0442 or 924 Flintrock Dr., Antioch, CA 94509

Have single seat **Acro Sport** biplane and some loose change. Would like older four seater (Piper or Bonanza) Call Fred Kros (415)399-3716.

**28HP Rotax aircraft engine** complete with prop and exhaust, \$350. Ed Rudolph (415)254-2198.

**Shopsmith** with some accessories. Call Ed Rudolph (415)254-2198.

**Wanted: prop hub** for a taper shaft, A-series Continental. Call Dennis Colomb (707)429-0693.

**1947 Ercoupe 415CD** project. Fuselage inspected and chromated, wings need inspection & cover. No firewall forward. Many extra interior parts. All logs and registration. \$750 O.B.O. (916)624-0109.

**Glasair windshield 3/16"**. Make offer. Steve Macica (415)792-7510.

**Glasair kit**. \$10,750. Norm Alumbaugh, P.O. Box 200, Pope Valley, CA 94567. (707)965-2709.

**Precision welding**. Aluminum, stainless, 4130. Eric Schuldt, 1820 Baldwin Dr., Concord, CA 94519. (415)827-0259.

**Telex Headsets**/dynamic mikes, Exec. cond. & work great, 2 sets Larry Laughlin (415)758-3532.


**Wanted: Cessna 170B** or early model 172. Also need Lyc. 0-360 for my T-18. Jordan Coonrad (415)769-9766.

**Note**. Unclassifieds are free and easy. Just call Jordan Coonrad at (415)769-9766 or leave a message.

**THIS SPACE AVAILABLE**

Business card ads (subject to board approval) from EAA members are \$35 a year. Send your ad and check to EAA Chapter 393, PO Box 2269, Walnut Creek, CA 94595.

RICHARD S. POWELL



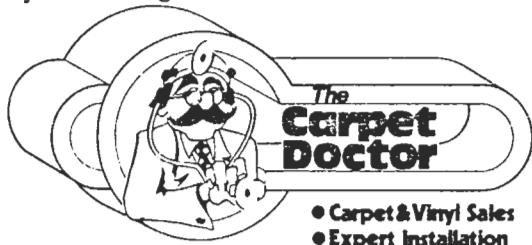
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(415) 935-8822

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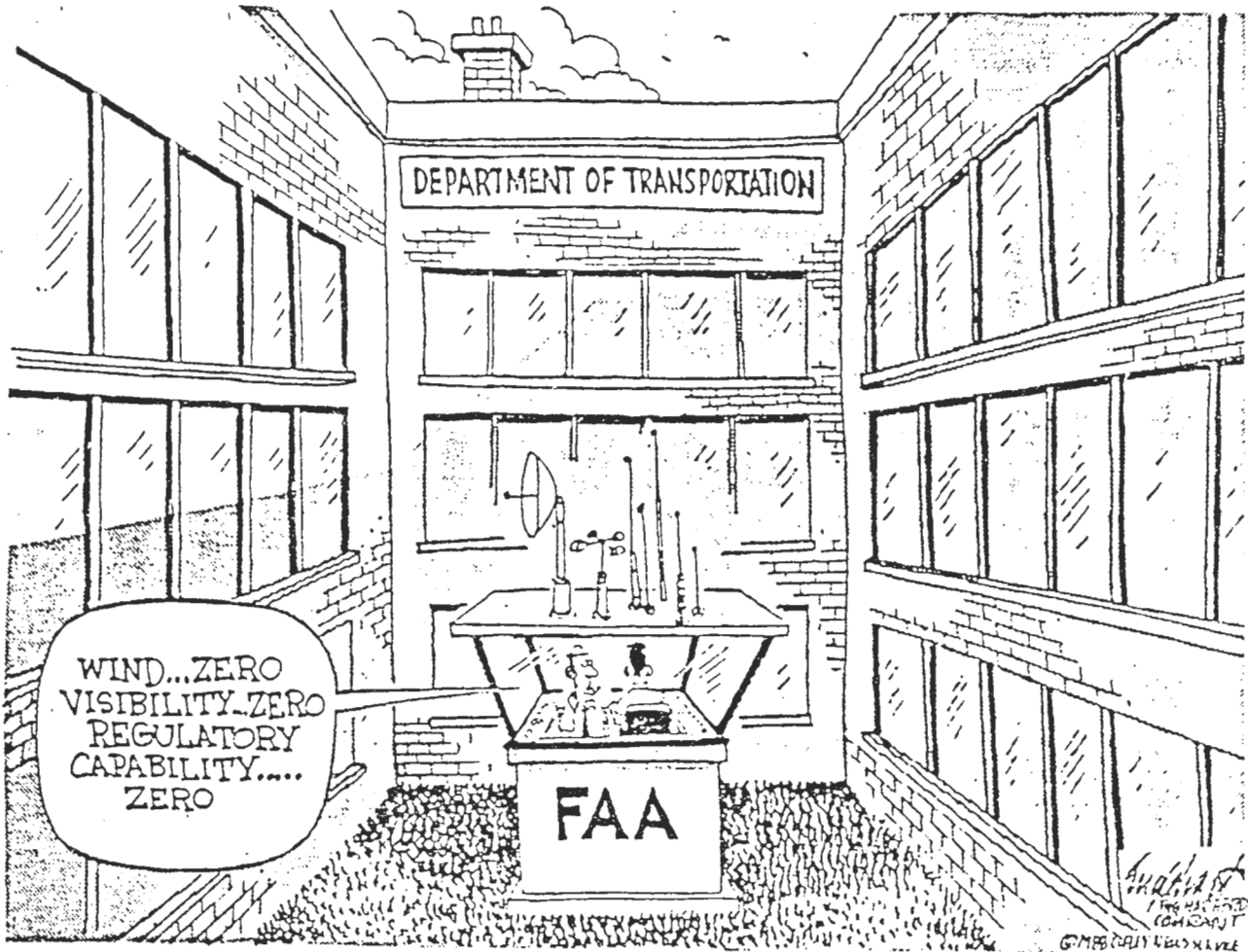
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DUES ARE DUE! 12/88

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