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# The Cleco

Official Publication of the Experimental Aircraft Association  
EAA Chapter #393 POBox 272725 Concord, CA 94527-2725

NOVEMBER 1996

## CHAPTER MEETING:

Meetings normally begin at 7:30 PM on the 4<sup>TH</sup> Wednesday of the month in the terminal building at the end of John Glenn Drive.

 This month's meeting will be on **November 20, one week earlier** than usual. Latecomers who expect to sit should bring their own chair.

## BOARD MEETING:

Board meetings are normally held in Bruce Seguire's hangar at 6:30PM on the Wednesday after the chapter meeting. This month's meeting will be on Monday, November 25.

## Program:

November is the month that Americans celebrate the accomplishments and sacrifices of our men and women in uniform. It is fitting that those of us who love flying honor the military pilots and airmen who have served this country. It will be our honor to welcome Warren Button to Chapter 393's November meeting as our guest speaker.

Warren has 2000 hours experience flying many of the renowned aircraft of the World War II era. This experience includes time in B17s, B24s, P38s, A26s, B50s, and others. Please join us for an interesting evening as Warren reminisces about his flights of some old and heavy iron.

## Chapter 393 Christmas party:

Our annual dinner and awards banquet will be held at Petar's in Lafayette on **December 8, 1996**. Friendship hour begins at 1730, dinner at 1830. Menu: Prime Rib, Chicken or Salmon veg's, rice and Dessert. If you have not done it already, send the form from last month's Cleco to Louis Goodell. Deadline is December 3.

## New Members:

Welcome to our two new members, Ken France, and Bill Boydston, and to returning member Rich Powell.

## Treasurer's Report:

Income:	Raffle	73.00
	Membership	45.00
	Xmas party	<u>220.00</u>
		338.00
Expenses:	Cleco	123.87
	EAA Insurance	100.00
	Raffle	<u>40.77</u>
		264.64
Bank Balance	Checking	683.90
	Savings	<u>2724.14</u>
		3408.04

The EAA wants all chapter members to be members of the national organization. Louis has the EAA national membership enrollment forms. Please use these, and fill in the chapter number. EAA rebates \$10 to the chapter for each new membership.

Louis will have 1997 EAA calendars at the meeting for \$7.00 each. We ordered 25 calendars, and must sell them.

## Minutes of October meeting:

President Bruce Seguire called the meeting to order at 7:30. Lyle Knight gave an account of fly-in and the Young Eagles event. We learned a lot about organization, and next year should be even better. Chapter 393 was clearly the biggest contributor to the fly-in. Belated thanks to **Gerry Greth**, who did a great job as Master of Ceremonies.

Louis Goodell proposed that we increase our EAA liability insurance from 1 million to 2 million, which would raise the cost from about \$40 to \$100. It was moved, seconded and voted that we do this.

Rick Young described changes to the FAA procedures for getting a newly built airplane certified. Due to staff reductions it will now take up to 90 days to get the paperwork done. Rick described his first flight in his new Harmon Rocket and how he discovered that he had the wrong fuel pump on his engine. After installing the correct pump, the

deck angle at maximum climb is so steep that "all you can see is your shoes", says Rick.

A discussion followed regarding the probable closure of the Reid-Hillview airport.

Jim Weir of RST engineering gave a presentation on antennas and answered questions about avionics.

### Saturday Fly-Out

*by Nancy Seguine*

The first Saturday fly-out, on October 26, was delayed one day because of the high winds but Sunday turned out to be a great day and we ended up at Santa Rosa. Flyers were Bruce & Nancy Seguine, Mike Parker, Ron Robinson, and Bob Decker. The food was great and the conversation was even better. The next fly-out will be on the 23rd of Nov. and we will decide on the particulars at the chapter meeting.

### What members are doing:

**Ron Robinson** is completely recovered from his heart attack, and has submitted papers to get his medical back. **Lyle Knight** working on Osprey II. **Fred Egli** plans to fly his Lancair IV by next year. **Jack Reichel** had a great trip to Alaska.

**Frank Storm** has moved to Rancho Murietta, is still working on his RV6. **Scott Achelis** told a humorous story of volunteering to be a "victim" in the airport crash drill. He found what the plastic bags were for when the fire truck came by and washed everything down. **Doug Page** finally received the finishing kit for his RV6A. **Bill Wilson** is working on a Glastar.

**Lyle Powell** described the vortex generators which he added above the wing roots on his Glasair III. They eliminate the abrupt drop when the wing stalls, making landings much smoother. **Harry Heckman** has completed his first month of working on his plane at the airport, after eight years working at home. Hopes to fly in about 3 months. **Ray Nilson** is flying his Eagle more and getting upside down once in a while.

**Gerry Greth's** turbo twin Comanche is for sale. Lycoming sold a bunch of bad piston pins, which must be replaced in both his new engines. **Roger Raley** is still working on his RV6. **Rob Hanberg** is working (slowly) on an Avid Flyer. He has a laser level which can be borrowed if needed.

**Doc Watson** is available for BFRs. **Geoff Richards** is working on a Glasair III, will close wings soon. **Bruce Milen** is building a Questair Venture, the only one with a gull wing canopy, may fly by end of year: he's looking for hangar.

**Ken & Linda McKenzie** flew to the Copperstate fly-in. **Pete Wiebens** is getting his Glasair III back together, if he can figure out where all the loose parts go. **Frank Williams**, here for his third meeting in eight years, is building a Kolb Twinstar.

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"Remember its better to be on the ground wishing you were in the air, than in the air wishing you were on the ground..."

*old VFR saying, source unknown.*

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## TECH TOPICS:

### NASA AWARDS TWO GENERAL AVIATION PROPULSION COOPERATIVE AGREEMENTS

From: NASANews@luna.osf.hq.nasa.gov (NASA HQ Public Affairs Office)

NASA's Lewis Research Center, Cleveland, OH, has awarded two cooperative agreements in support of the Agency's General Aviation Propulsion (GAP) program.

Williams International, Walled Lake, MI, was selected for negotiation of a \$37 million cooperative agreement to develop a turbine engine. Under this four-year agreement, the company will develop and flight demonstrate break-through, low-cost turbine engine propulsion systems. The turbine engine concepts are for light general aviation aircraft with six seats or less and cruising airspeeds greater than 200 knots. The work will be conducted at their facilities in Walled Lake as well as at Lewis, NASA's Langley Research Center, Hampton, VA, and NASA's Dryden Flight Research Center, Edwards, CA.

The major goal of the Williams International agreement is to develop technologies and manufacturing processes for low-cost, environmentally compliant, innovative turbine engine propulsion systems.

Teledyne Continental Motors, Mobile, AL, was selected for negotiation of a \$9.5 million cooperative agreement to develop an Intermittent Combustion Engine.

Under this three-year agreement, the company will develop and flight demonstrate affordable, lightweight, innovative Intermittent Combustion (IC) propulsion systems. The IC concepts are for entry-level general aviation aircraft with single engines, four seats and cruising airspeed of less than 200 knots. The work will be conducted at their facilities in Mobile and at Lewis.

The major goal of the Teledyne Continental Motors agreement is to develop technologies and manufacturing processes that reduce engine prices by one half while substantially improving reliability, maintainability as well as meeting future emission and noise requirements

### How to Monitor Your Engine's Condition

With a few extra simple checks before, during, and after each flight, you can gain a broader picture of your engine's health, and increase your confidence in your aircraft.

*by John Schwaner (jschwaner@avweb.com)*

### Preflight:

1. Inspect the aircraft's belly. On most aircraft, any fluid leaks from the engine compartment ends up on the belly. Fresh oil is a sign of an oil leak. Dark soot is a sign of rich engine mixture or increased combustion gas leakage past the piston rings. Fuel dye is a sign of a fuel leak. One quick look at the belly and you know whether there are any leaks in the engine compartment.

2. Take your finger tip and touch the inside edge of the exhaust pipe. If your engine's mixture and oil consumption are normal, then your finger should be clean, or possibly have a slight tan ash deposit. If your finger tip has dry black soot on it, then your engine is at a rich fuel/air mixture. If your finger has oily black soot, then your engine is burning too much oil.

3. Smell inside the engine compartment for any fuel smells. Small fuel leaks evaporate fuel as they leak and may not be enough to drip. Leaks may occur at primer fittings, hose connections, or the hose itself. One sniff in the engine compartment and you've checked all of the fuel connections for leaks.

4. Check the color of the oil on the dipstick. If it looks like black lacquer then the piston rings are leaking combustion gas into the oil.

#### **Start:**

1. Listen for any out of the ordinary noises as the starter turns your engine. You should hear the starter, the clanking of the impulse couplings, and no wheezing of air out the engine breather or intake.

2. On your Continental 6-cylinder engine, does the propeller turn with the starter? If the starter turns but the propeller sometimes doesn't, then the starter adapter is slipping and needs to be repaired.

3. On Lycoming engines if the starter turns but the propeller doesn't then the starter Bendix is starting to stick. Usually cleaning and silicone spraying the starter Bendix shaft fixes the problem.

4. Does the engine kickback when starting? If it does, then you have a problem with the magneto impulse couplings, engine timing, or the starter vibrator.

5. If the engine is getting hard to start then your magnetos probably need repair.

#### **Idle:**

1. Many engine problems are first noticed during idle. Engine roughness, caused by carbon fouled spark plugs, lead fouled spark plugs, a sticky valve, or a hydraulic lifter not operating properly are more common at idle.

2. A carbon fouled spark plug clears when you increase power, a lead fouled spark plug does not clear when you increase power. A carbon fouled spark plug indicates a spark plug that is not firing constantly or that the engine is operating at a too rich fuel/air mixture. Lead fouled spark plugs indicate a rich fuel mixture or that the power is being increased too rapidly at takeoff.

3. Bad hydraulic lifters are more noticeable during idle than during flight. A worn hydraulic lifter that leaks oil causes rocker arm to valve clearance. The rocker arm strikes the valve tip instead of pushing the valve open, resulting in a tapping noise. The noise goes away as the cold engine oil flows into the hydraulic lifter. Cold oil, being more viscous, doesn't leak out the hydraulic lifter as fast as hot oil. This causes the hydraulic lifter to pump up, closing the tappet

clearance and causing the tapping noise to go away. This is fine and should not be a concern if the noise goes away shortly. If tappet noise occurs regularly then replace the hydraulic lifters. Worn or defective lifters cause the valve to pound against the seat, possibly causing valve breakage.

4. Is the oil pressure at its normal position? Low oil pressure at idle and high oil pressure during flight is caused by leakage in the oil delivery system and cannot be fixed by adjusting oil pressure.

#### **Takeoff:**

1. Is takeoff rpm lower than normal? If takeoffs are getting longer and climb performance is getting worse, then suspect that a camshaft lobe is flattening out. Damaged camshaft lobes cause a gradual decrease in takeoff rpm in an otherwise smooth engine.

2. If takeoff rpm is low on a constant speed engine then the problem may be in the governor and not in the engine. Check to see if you can reach redline rpm in cruise flight. If a constant speed propeller airplane won't reach redline rpm in cruise, then the propeller governor is holding back the propeller and your

3. problem is not low engine power. In cruise flight or descent, even an engine with low power will turn a propeller past red line because of the low engine loading.

4. Monitor for engine smoothness and power.

5. Is vacuum pump pressure normal? As the vacuum pump starts to fail it often produces lower suction for a flight or two before failure.

#### **Cruise:**

1. Magneto problems often cause a slight roughness as you climb to altitude. The roughness may go away when you reduce power to cruise. High manifold pressure requires more voltage from the magneto to spark the plugs than lower manifold pressure. Therefore, if you can turn the engine roughness on and off by changing the manifold pressure, then the magneto is at fault.

2. The higher the altitude the less resistance to arching within the magneto. Therefore, a marginal magneto often causes slight engine roughness during the climb, only to clear up when you reduce power or descend to a lower altitude.

3. To some degree oil pressure follows oil temperature and oil temperature follows cylinder head temperature. As oil temperature goes up, oil pressure goes down. As cylinder head temperature goes up, oil pressure goes up. This can be used as a crosscheck of proper gauge operation. The relationship is not linear and sometimes may not exist. For example, increased heat transfer from the cylinders to the oil occurs when the piston rings start leaking hot combustion gas into the oil. This causes oil temperatures to rise without a corresponding increase in CHT temperature.

#### **Shutdown:**

1. If the propeller has more than 100 hours on it and is starting to sling oil onto the windshield then it's time to send it off to a propeller shop.

2. Does the engine cutoff evenly? If not, the idle cutoff circuit is leaking.

3. You should get no more than a 100-rpm increase when going to idle cutoff. Any more than 50 rpm means that idle mixture is too rich. The optimum idle setting is one that is rich enough to provide a satisfactory acceleration under all conditions and lean enough to prevent spark plug fouling or rough operation. A rise of 25-50 rpm will usually satisfy both conditions.

4. Check the aircraft belly again.

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## MISCELLANEOUS:

*Contributed by Ken McKenzie*

*We continue with the pilot's story of a Cessna 172 that was hijacked in the early morning hours from Bloomington, Indiana.*

I suggest that we walk across to the FBO where there is a telephone. If he wants, I will call the cops and be his hostage (I am not wild about this idea -- same reasons as above). Or I can call the FAA, or, or...

We get there. He sees other airplanes on the ramp. Starts talking about how we're going to go to Montana in one of them and I am going to fly. Should be easy to get it going.

I say that if we're going to do that, let's take mine 'cause I know it and its condition. He says "I thought it was broken." I say that it is minor and that I can fix it shortly.

[STUPID! I could have gotten time in the King Air on the ramp, or the AeroStar, for FREE!!]

We go back to the hangar. I show him my instrument charts. Show how we'll get there. I told him we only had about 3 hours of fuel because I had been flying earlier. Does he want to stop in Indy first where we can get more fuel? NO! He is very agitated by the mere suggestion of going into a large airport. I told him we could make it into Iowa (the truth) and land at the Quad Cities airport which would be open but was smaller than Indy (not the truth). He accepts that.

During my preflight of the airplane I reach in and set a certain box. I am almost nailed but lie and say I was reaching for a chart (which was next to the box, thank god.)

I am curiously relieved that we are going flying. I like flying. I like being in my airplane doing things that I understand, even though I am pretty scared. I am often scared in my airplane. It is a normal feeling in that environment. I feel, for the first time since 9PM, in control of the situation even though I have no idea what's going to happen.

We taxi out. He is sitting in the back seat of my 172 with his shotgun (not pointed at my skull, thanks!)

At this point BMG is VFR clear, it's about midnight. We take off and head towards Terre Haute. The box is blinking in a soothing way.

We have on headphones, but I have not used the radio at all. I have the audio turned off because I am afraid someone, somewhere, will yell "Who's the bozo who's <doing the thing I did to let people know my predicament>"

As I pass over Terre Haute airfield I look down and notice that they are flashing a red light at the aircraft and also flashing the runway lights. I do not alert my passenger to this phenomena.

At that point it begins to rain. I have an excuse to confirm my situation! I knew that the "radio code" was probably not sufficient to really get them going. I tell my passenger that I do not have a good picture of the weather ahead but that I believe we may encounter some instrument weather and that if "they" see us flying in instrument weather without a clearance that "they" will be suspicious and might follow us. I explain that I will call Terre Haute radio to get the weather and to file a flight plan and that he can listen to everything and I won't do anything goofy. He agrees with the admonition that I "better not try anything."

[Calmer, most normal voice I can muster] "Terre Haute Radio, N5457E"

"N5457E Terre Haute, go ahead"

"Terre Haute Radio, N5457E is a C-172 at 4,500' directly over Terre Haute Northwestbound like to get the weather into, ahh, Montana. We're doing 110 knots, outside temperature 50 degrees, squawking 7500, heading 330"

"57E, roger, right now we're showing generally VFR conditions throughout although radar indicates a band of showers from Chicago to approximately 100 miles south of your position. Mostly level one And, 57E, confirm that you're <doing that thing that makes them so curious>"

<A bit pissed that they tried to blow it for me> "57E, roger, that's affirmative where does the best area for penetrating that line of rain seem to be [pre-WX-900 days for 57E don't you know...]"

"Ahh, looks like just south of Chicago is pretty good."

"Roger, I'll call you back with an IFR flightplan."

I then turn almost due north so that I am parallel to the line of showers as I work out a flight plan. It seems VERY difficult for me. We are over Danville, IL when I figure out a route that goes, basically, direct Kankakee, direct Moline. My passenger told me he does NOT want to get too close to Chicago.

I call back Terre Haute on the same frequency. They are very scratchy. I give them the plan. They tell me to talk to Chicago Center on XXX.YY for my clearance. A few minutes later I call Chicago:

[calm voice like nothing is at all weird] "Chicago Center, good evening, Cessna 5457E looking for instruments to Moline."

"57E, roger, loud and clear, cleared to Moline via radar vectors, climb and maintain 6,000' verify <doing that thing I was doing that got them so friendly in the first place>"

[thinking to myself, in a Homer Simpson voice, "Duh-oh! Radar Vectors! I filed to Kankakee so I could avoid the rain he's about to drive me through! Duh-oh! Why do they keep asking me if I'm really the bonehead they think I must be?"]

*Continued next month*

## NEWSLETTER SUBMISSIONS

All contributions for the newsletter are welcome! If you have something to say or share with the rest of the club members, do it here! Please submit any articles and/or photographs you think others will enjoy and learn from. Submissions should be done in writing and mailed directly to the newsletter editor. Submissions may be e-mailed, hand written, typed, or on any IBM diskette (in ASCII or MS Word). The deadline for submissions to the editor is the 14th of every month (newsletter is produced and mailed by the 17th). The editor's e-mail address is: [rab@netcom.com](mailto:rab@netcom.com).

## CLASSIFIED ADVERTISING

Items for sale by club members may be placed in this newsletter for **FREE!** Please submit your **FOR SALE** items to me in writing no later than the 14<sup>th</sup> of the month. Normally, your ad will run for two issues, unless you request more or tell me that the item is no longer for sale.

### WANTED:

**A few good pilots.** The Concord Flying Club, a club which started in 1939, has owner/memberships available. The club currently owns a S-35 Bonanza, a Mooney 201, and a Cessna 172. All wet, tach time plus monthly dues. Call Pete Wiebens for details. (510) 933-7517

### FOR SALE:

#### RV6

First flown 8/95, 165 hours total time,  
80 Lycoming O-360-A1A, 666 Hours total since new.  
McCauley "Black Max" two blade Constant speed prop.  
Sliding canopy. Military "P-51 style" paint.  
Cruises at 200 MPH on 8.5 GPH  
Excellent Workmanship  
Price \$65,000

#### Harmon Rocket

First flown 10/96. 25 hrs total time A&E  
IO540, 250HP, new Hartzell CS prop  
All the goodies, including electric trim. Navaid AP.  
Painted white, ready for your trim design.

Serious buyers contact:

Rick Young  
12 Selling Court  
Walnut Creek, CA 94596  
510-939-7756

**ALTERNATOR** for O-200 and O-300. Yellow tagged from Sacramento Sky Ranch. Includes coupling and drive gear for O-200. \$150. Terra TPX 720 ch portable, includes charger and 12 volt supply cord. \$100. David Clark H10-80 Headset \$75. Chuck Hull (707) 745-3323

**INSTRUMENTS:** The Westach items are all new, the others are new or rebuilt. All are priced at approximately one-half the current price in the Aircraft Spruce catalog.

Westach 2-2A7	Fuel Gauges	15.00 ea
Westach 2A2-384	EGT Gauge	30.00
Westach 2A1	CHT Gauge w/gasket senders	30.00
Westach 254-20E	4 position switch	10.00
Westach 2A9-2	Oil Temp Gauge	15.00
Westach 2A6-1	Amp Meter	40.00
Westach 2A8	Oil Pressure Gauge	120.00
Westach 2A5	Volt Meter	15.00
UMA 3-102-2	2.25" Suction Gauge	35.00
Gerdes A510	Ignition/Start Switch	65.00
Bendix 1718-25-A2	Turn and Bank	125.00
Whelen A-600-PR-14	Red/Green position/strobe	145

see Roger Raley at Bruce Seguire's hanger on West side of field or call 825-0766 or 707-557-2383

## CALENDAR

- November 26 Saturday fly-out. Meet at Bruce Seguire's hangar (end of third row on northwest side) at about 1030 to decide where we will go for lunch.
- November 26 First Annual EAA Chapter 204 Fly-In, Marina Municipal Airport. 408-646-9310
- December 8 Chapter 393 Christmas Banquet at Petars. See page 1 for details.



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CHAPTER #393 NEWSLETTER, NOVEMBER 1996

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