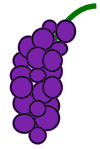


THE GRAPEVINE



EAA CHAPTER 663 Livermore, California

Vol. XXIV, No. 8, August, 2004

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

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MEETING AND PROGRAM

Our August meeting will take place at 7:30 P.M. on the 5th of August in the Terminal Building at the Livermore Airport. Our program for the evening will be, to quote Bill Jepson, "I am trying to get Jim McCormack from **Jabiru Pacific**. He wants to show the new 4 (ha!) place Jabiru kit. I don't know if he will be going to OSH or not though. That failing we will talk about the new and different seen at Oshkosh.

Bill

MINUTES: GENERAL MEETING, EAA CHAPTER 663, 7/1/04, 7:30 PM, LVK TERMINAL BUILDING

Chapter president called the meeting to order.

No **guests** were present (and not many members either).

The **program** was to be the lead activity, but the speaker and his airplane never showed. Soooo. .

. . Ralph started by getting the minutes approved as published in "The Grapevine".

Sharon was a bit late because of traffic, but eventually reported a total of \$2405.30 in chapter funds. Her report was also approved.

Business: Ralph pitched the Sunday 4th of July barbecue, at hangar #113, 4 pm. The chapter supplying drinks and paper products, attendees supply the rest.

Young Eagles coordinator Bob Cowan tried to drum up volunteer pilots for the rally Saturday July 3rd.

Ralph reported that **Bob Farnam** is now a **Flight Advisor**, and **Bob Sinclair** is now a **Technical Counselor**. Congratulations Bob and Bob.

There was a discussion about whose going to **Oshkosh** and how. Of those present, four were flying, and four others were being flown (airlines?).

Announcements: The next board of directors meeting will be 7/15/04 @ 7:30 at Ralph's place. Next meeting will be 8/5/04. Airport Open House is coming 9/25/04.

Break and then Program: Our speaker was to be Chris Lowery from Tracy with his Eggenfellner Subaru powered Glstar. He didn't show. As a fill in, I had my instrument panel for the RV-9A I'm building that will use the same engine. The Eggenfellner conversion uses the cars fuel injection, ignition system, and two electric fuel pumps. The sake of redundancy a dual battery electrical system is used. Nearly all of the electrical components have been installed in the instrument panel unit, the panel itself and an attached shelf behind the panel with space for the various components and instruments.

Meeting adjourned for **pie**.

MINUTES: BOARD OF DIRECTORS MEETING, EAA CHAPTER 663 7/15/04, 7:30 AT RALPH'S PLACE

Six persons were present, with the initials DJ, BC, BF, LF, BC, and RC.

The meeting started with a discussion about **safety and flying** and aviators who display questionable judgment. The subject will be continued.

Ralph has had a request from Ralph Huy for the chapter to help with the **Airport Open House**. Specifically someone is needed to coordinate the static displays along the fence between the terminal building and the control tower.

Bob Cowan set the next **Young Eagle Rally** for August 21.

Bob Farnam mentioned the **Tandem Wing Fly-in** August 20 and 21 at LVK. (There are now 5 Quickie type airplanes flying out of Livermore.)

Bill Jepson was not present, but the **program** for the August 5 meeting will probably be reviews of Oshkosh. (See above. Ye ED)

Ralph, a member of the **Livermore Airport Master Plan Update Advisory Committee**, gave a review of the most recent meeting of this committee. He made it sound as if they are trying to mix an epoxy with components from different manufacturers, some unlabeled, and hoping it will set.

Meeting adjourned for **pie**.

Respectfully submitted, Bruce Cruikshank, Secretary

HIGH ALTITUDE FLIGHT

by David E. Nelson

I was talking to a gentleman at the last SWRFI about flying at high altitudes with O2 and what not. He told of an experience where he was flying with O2 and eating a sandwich when his engine suddenly lost power and stopped. He continued to finish his meal before tending to the crisis at hand.

Naturally, his plane started to descend and after several minutes it occurred to him that his engine was out and something needed to be done and done now! He quickly determined that he had run a tank dry so he switched tanks and restarted his engine. In determining the hows and whys as to why he prioritized his sandwich over the stopped engine, he discovered that the O2 hose had become disconnected from its source and the O2 bottle was simply supplying O2 to the cabin.

I think experiences like this speak volumes and it definitely got my attention. I'm very glad to see that this problem occurred w/o any fatalities/crashes. IMHO, a dry fuel tank can (but shouldn't) happen, but a loose oxygen line must never be allowed to happen!

Hypoxia can lead you astray faster and with more disastrous results than the most seductive member of the opposite sex you've ever dreamed of.

WORDS OF WISDOM

Aircraft quality: you can buy better, but you can't pay more!

**OX5 REUNION
(Any history buffs out there?)**

We am pleased to announce that the 49th Annual National Reunion of the OX5 Aviation Pioneers and Historians will be held in San Carlos, Ca. this September 17th through the 19th. We will hold the reunion at the Hiller Aviation Museum and be staying at the Inns of America, near San Carlos Airport. Members of this national organizations come from all across the country to have fun and honor some of our members, past and present. Nonmembers are welcome to attend as well.

The OX5 Aviation Pioneers is a group of individuals that originally had worked on, had flown or helped develop the OX5 engine prior to 1940.

Several years ago they added the Historian category of membership for anyone interested in preserving aviation history to make sure the organization continues. This year the Golden Gate Wing of the Bay Area is proud to be hosting the reunion.

Every year a Reunion Book is constructed of let-

ters and ads from well wishers and member "Wings" inviting everyone to the area and the event. It has always been tradition that ads of "welcome" are purchased by local organizations and businesses welcoming the group to the area as well.

With our rich San Francisco Bay Area aviation heritage we are hoping that we can include your organization as a participant with a full-page ad in the Reunion Book for a \$50.00 donation. The OX5 Aviation Pioneers and Historians is a registered 501(c)(3) nonprofit organization with the Internal Revenue Service.

Please feel free to forward your ad to either of the addresses below or call for information. We are excited that the 49th annual reunion is being held in 49'er country and we look forward to your organizations' participation. We graciously thank you in advance.

Nancy Auld Golden Gate Wing President
2nd National Vice President
353 St. Andrews Lane Half Moon Bay, CA 94010
650-712-0450 (fax)

Jim Ricklefs Golden Gate Wing Secretary
Past National President
931 American St. San Carlos, CA 94070
650-592-6210 (ph) 650-598-0804 (fax)

WARNING FROM IVO

"We will not be putting any more Ivoprops on Lycoming powered aircraft. nor Cadillac direct drive, Continental O360, O470, O520, O540, Delta-Hawk, Jabiru 8 cylinder, Limbach, LOM, and M14P engines due to pulses and harmonics."

Regards, www.ivoprop.com

GOT A HOT-RUNNING ENGINE?

Forwarded by Ric Lee

I participate in the Grumman e-mail list, and this week while consulting with a well known engine shop over a problem that they'd been working on for 3 weeks, a new discovery was made that suddenly dropped the CHTs 40+ degrees on engines that were running too hot.

Here is my message to the Grumman list, and you'll find that the issue is also known among Ex-

perimental pilots with GEM, JPI and EI engine monitors. If you have a digital CHT and have noticed spreads in temp between cylinders, this information *could be* for you...

On my way back from the Chicago area after picking up a wing panel for a Tiger, I stopped in at Bill & Carol's Precision Engine in KY to put a fresh pair of eyes, mine, on a plane that had been bedeviling them for the last 3 weeks.

Bill had called and left a long message on my answering machine, and I KNEW he'd been having fits with this plane that I'd previously worked on, and I knew the owner well, so I decided that a 2 hour detour would be a reasonable thing to do.

It was a 74 Traveler with a fresh Precision High Compression STC O-320 which was running high CHTs on #2 and #3 (LF and RR) cylinders. They'd top 420 full rich at cruise and break 450 at full power and #1 & #4 were in the 370-385 range, right where you'd like them to be.

After hearing the full story of all the things that had been rechecked and swapped with known good test parts on this fresh engine, I told Bill that I thought the next step in troubleshooting was to pull 1 pair of cylinders and swap them front and rear to see if the high temp followed the cylinder or stayed with the same location on the engine. Of course on the heels of a 3 week thrash, with the owner living in their spare bedroom, he really didn't want to pull the cylinders. I offered to give him a hand swapping them and figured that before dark we'd be able to test fly it and have a decision on if there was a cylinder problem or some odd internal engine problem (cam?) that was causing the high CHTs.

During the course of visually inspecting the cylinders as currently installed, and recalling the 3 sets of cylinders that were installed on Hal Beauchchene's Tiger before similar high CHTs were corrected, it occurred to me that with Carol's water tight baffles, and all the rest of the work Bill had done to this engine, that it HAD to be something outside the items that are normally checked during OH, and something that Bill's 3 weeks worth of troubleshooting had not detected.

(After Hal's engine gave him such fits, and it had been inspected and instrumented by LoPresti East

and ECI in Texas, and ECI had provided a second set of cylinders that were just as hot as the first, we were pretty vexed about it. Eventually Hal was able to convince ECI to sell him a set of the then-new Titan cylinders and take the "hot" ones back in trade. We put the 3rd set on in Hal's hangar in Elba, AL, and it ran cool right out of the box, even during break in, and at that moment we both knew that the CYLINDERS THEMSELVES can cause high CHTs, even if the baffling and the rest of the engine are perfect. Not just hotter than usual, but the kind of high CHT that prevents you from even pulling the mixture back at all because to lean even the slightest amount will spike the CHTs into the 450F and rising range while in 130 knots cruise flight in January OATs. Upon inspection of the offending cylinders on Hal's engine we noticed that SOME of the fins around the spark plug were partially obstructed with casting flashing. Not BADLY, just some thin aluminum scrap poking out the sides of the fins about 1/2 way down. A tool made of a broken off hack saw blade allowed some guesstimating as to how obstructed some of the slots were.

Hal's NEW cylinders were the latest revision of the Titan cylinders with a different alloy and a different fin pattern, so they didn't look quite the same. And we didn't really follow up on it at the time because the new cylinders cooled no matter what one did with the red knob, so Hal was happy.)

Coming back to Bill's problem engine, I spotted the SAME flashing condition on the Genuine Lycoming cylinders that Bill *always* uses (He hates ECI), as opposed to the 2 sets of ECI cylinders that we'd been through on Hal's engine. The problem was obviously worse on the #2 and #3 cylinders with much more "flash" filling the slots and limiting the air flow, though #1 and #4 were somewhat affected.

Before altering the cylinders, Lycoming Tech support was consulted again; Bill had been picking their brains for possible causes. They had NEVER HEARD(!) of such a thing as casting flash in between the fins restricting the air flow. (They must have very weak eyes. ye Ed)

After using a set of needle files to file the flash off of the fins (6 fins, vertical around the plugs), the owner and I flew the plane at 2500' and 5000' at

2650 RPM leaned to roughness and the enriched until smooth for a 30 min. test flight. We discovered a 43 degree drop in CHT on #2 from the multiple previous test flights before the fin clean up. #3 which hadn't been as vigorously filed and cleaned showed a 16 degree drop.

WOW! From 420 to 377 in one 45 minute operation!

At this very minute we are filing and smoothing the flash on ALL the cylinders to make the fins straight with no casting flash protruding and to open up the fins that had had little if any opening between them. Comparing several cylinders that Bill had lying around, some from the 70's, we were able to establish what "normal" fins should look like and see that there should be NO core shift or parting line flash blocking the 6 fins air-flow.

Bill happened to have another customer's Cheetah engine in the shop and it was back for a warranty replacement of three jugs for excess valve guide wear in only a couple hundred hours. 3 of the cylinders were on the bench, and 1 which had showed acceptable wear was remaining on the plane. After examination of the 3 "bad" cylinders that Lycoming had already sent replacements for, and then the 1 "good" one that had passed the SB-388B wobble test, the exact same flash was found on each of the cylinders that were "bad". The owner reported being unable to keep them cool in a 105 knot climb at full rich based on engine monitor data.

The one "good" cylinder was clear through all the fins. We were able to eyeball a good view straight through all 6 fins to see the floor. So that supported the hypothesis: flashing = high CHT and rapidly wearing valve guides.

In another hour we'll go for a second test flight and see what the additional clean up does for us. If #3 drops to a similar temp like #2 did after the clean up, and possibly #1 and #4 go lower too, you may hear the shout all the way from Owensboro!

So there you go: Check your cylinders on the 6 vertical fins between the spark plug and the valve cover. There should be 0.060" - 0.090" clearance on both sides of the fins. Look down between the fins about 1.5" for the parting line of the casting molds

and you'll see the flashing of which I'm speaking. In the diagonal corners 90 degrees to the fins we found openings ranging from NONE to 1/8" holes that appeared to have been drilled post-casting to a distorted "Y" at the outboard corner and a 5/8" long slot at the inboard corner.

I think that this explains why some planes in the fleet DON'T have CHT problems, and some DO, and some do only on 1 or 2 cylinders. It may be that being blessed with 4 good cylinders lets you brag to your buddies about your low CHTs, and they might never be able to achieve those readings if their cylinders have the flashing at the mold parting line!

Also see :

<<http://www.sacskyranch.com/eng23.htm>>

I FLY THE MICCO SP-26

by Randy Parent
Vintage Ch 29, Hayward

While I was at Sun 'n Fun, Brad Buchanan asked me if I would fly home with him in his new Micco SP-26. Well, he did not need to ask me twice. About a week after Sun 'n Fun I found myself in Ft. Pierce, Florida at LanShe Aerospace, the people who are now building the Micco. Brad wanted to make sure I was going to look good flying his new Micco, so he made an appointment for me to fly with one of the factory check pilots.

The Micco SP series is steeped with heritage, deriving their basic design from several models produced by the Meyers Aircraft Company. It all began on the drawing board of Al Meyers in 1948 as the MAC 145. The 145s still have the distinction of never having an AD issued on the airframe.

The Micco Aircraft Company acquired the original two-place Meyers 145-design and Type Certificate in 1994. The new company committed a large investment into enhancing and redesigning the Meyers 145. The extensive development, engineering and flight test of the MAC 145 resulted in an amended Type Certificate (MAC-145-A), which was awarded by the FAA in early 2000.

The high performance MAC 145-A or SP 20 is a 200 hp, all metal, complex two-place aircraft and

remains the only fully retractable, conventional gear, stick control airplane in production today. In pursuit of even more performance, a fully Aerobatic, 260 hp six-cylinder (Lycoming 10 540-T4B5) model was developed as the MAC 145-B or SP-26, and launched into production in March of 2002. Brad's Micco is hull #09.

The SP-26 is certified in both the Acrobatic and Utility categories. In fact, the SP-26 is capable of over 12 Aerobatic maneuvers and design tested to aerobatic loads of +6 G's and -3 G's at 2,650 lbs. gross weight.

In March of 2003, LanShe Aerospace acquired the assets, design rights and the Type Certificate for the Micco Series aircraft. For aircraft specifications go to:

<www.planeandpilotmag.com/content/specs/2002/miccosp26.html>

Flying the Micco is just about the most fun one can have when not in a Cub, on grass. No need to prop this baby. Turn the key and the big Lycoming growls into life and soon a steady smooth purr is felt. I pointed Miss Micco down the runway and pushed the airline type thrust lever to the forward stop. I felt like I was in a P-51. In fact, Miss Micco carries the same markings (Red Tail) as the P-51 Mustangs of the famed Tuskegee Airmen. The tail was up affording good forward visibility and at about 80 kts she was in the air and building airspeed, standby, gear up, and here we go, up-up and away at over 2000 FPM (I was light). Give a Cub driver your fast Micco and lookout; there is speed in all of us! I roll into a 59% right hand turn and sucked the fighter type control stick back just to see what she would do. No problem for the Micco, but for this old Cub driver the stick went forward just as fast as it came back. I rolled out of the turn and let this homesick angel find the sky.

Brad and I had a real fun time flying the Micco to Hayward. We made several landings on Cub-type strips to hold up for the thunderstorms we encountered Texas. We discovered that the Micco is a real "ramp hazard" due to the people that we would attract at airports. During the flight home we were able to figure out how to work all the nice glass in the panel, including the autopilot.

I now have about 40 hours in the Micco and can

say that it is a joy to fly. The only down side is that I cannot use car gas (like the Cubs). The last time I purchased 100LL, the cost was just over \$2. The 540 is NOT a light drinker. The Micco is now located at Bud Field's new hangar at the Hayward Airport.



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