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Carb Heat

NEWSLETTER

Hot Air and Flying Rumours

Vol 31 No. 10

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November 2001

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Next Meeting:
Thursday, November 15, 2001 8:00 PM
Canadian Aviation Museum

Featuring:
Our very own Andrew De Pippo
Three Zenair 701's go to Oshkosh the second telling!!!

President:	**Gary Palmer**	**596-2172**	**gpalmer@nortelnetworks.com**
Vice President:	**Russell Holmes**	**820-8572**	**Russell.Holmes@city.ottawa.on.ca**
Ops, Publishing, Tools:	**Dick Moore**	**836-5554**	**rjmoore@uottawa.ca**
Membership:	**Wayne Griese**	**256-5439**	**wayner@igs.net**
Secretary:	**Curtis Hillier**	**831-6352**	**hillier@mosaid.com**
Treasurer:	**George Elliott**	**592-8327**	**gelliott@igs.net**
Editor:	**Rodney Stead**	**836-1410**	**stitstmp@sympatico.ca**
Webmaster:	**Martin Poettcker**	**271-6113**	**poettcker@home.com**
EAA 245 Website:	**http://eaa245.dhs.org/**		

President's Page
by Gary Palmer

It is with great sadness that I must report the loss of one of our most popular chapter members in an unfortunate flying accident, Tuesday, November 6th in Aylmer. **Les Staples** will be remembered for his boundless energy, enthusiasm, and willingness to help fellow chapter members. He will be sorely missed and our thoughts go out to his lovely wife Amy.

Upcoming meetings.

Looking forward to the new year we have an interesting slate of speakers and topics planned including:

January: Dave Stroud will describe his Corvair engine conversion that replaced the Subaru EA81 in his Christavia, along with early test flight information.

February: Gary Loubert will describe the Sonex project he is starting, and his experience at a Sonex training class.

March: Carl Bertrand on the design of his own wing design for his CH701 incorporating self actuating leading edge slats.

Chapter work projects

Dick is continuing in the fine tradition of chapter work projects that extend past the first snowfall. A special thanks to all those who have answered Dick's call for help, I am sure Dick can count on your continued support!

October Elections

The October meeting saw a small but important change in the executive team, and a renewed commitment from others standing for another term. **Rodney Stead** has taken over from **Charles Gregoire**, as News Letter Editor. I know you join me in thanking Charles for a job extremely well done. I am likewise sure that Rodney can count on your continued support in the form of articles to help us maintain a high standard for our newsletter. To **Russell**, **George**, and **Curtis**; thanks very much for the renewed commitment. I look forward to another season of invigorating Executive meetings.

Aviation Fuels & Lubricants .

Our October meeting featured **Russ Robinson** who gave us the real lowdown on Aviation fuels and lubricants. Russ even tackled the touchy topic of oil and fuel additives, helping to dispel many of the misconceptions in the audience with just the right blend of fact and humour.

Martin Poettcker's CH601 Project visit, Saturday Oct 20th

Martin hosted a project visit at his home on Saturday Oct 20th to show off his **CH601** project, and **Subaru** engine conversion. All attending were impressed with the quality of Martin's work, and his inventiveness in tackling projects most of us would never contemplate, such as design of his own planetary reduction drive. Martin has been very busy since I last saw his project in June, and is making good use of his sabbatical from the 9 to 5 drudgery experienced by most mere mortals. At the rate he is going, he may well be complete by next year. Thanks very much Martin!

Thursday Nov 15th meeting @ NAM 8:00 PM start: Oshkosh Odyssey & the 3 musketeers

Our own **Andy DePippo** will share a video of the flight he made with two other chapter members in a trio of CH701's to Oshkosh 2001. Andy, Carl Bertrand and Ray Jones will share the challenges, excitement and rewards that await all homebuilders making their first pilgrimage to Oshkosh in their own creation. This promises to be an entertaining session; See you there!

A reminder also that, there will not be a meeting in December, so that following our November 15th meeting, the next meeting will be **January 17th 2002**. I would like to take this opportunity to wish all chapter members a very merry holiday season and Happy New Year.

Gary

A BRIEF HISTORY OF TIME
By Paul Merritt

This article appeared on Avweb (www.avweb.com)

The one change we made was to switch to a new gasoline called 100 Low Lead or 100LL. Sold as a replacement for both the 100-octane and 80-octane fuels available at that time, the new 100LL only contained half the lead of the old 100-octane; however, it contained four times the lead of the old 80-octane. In spite of its lead content, it was sold as a contribution to the environment. In reality, its use did not benefit the environment much but rather benefited the aviation-fuel industry, enabling it to reduce the number of products it had to produce, distribute, stock and sell. Also, since most airports at the time had only two fuel systems, the airports were able to switch from selling two grades of gasoline to selling only one grade, utilising the second tank and pump to sell jet fuel.

However, as the lower compression engines really did not run so well on the new "marvel" fuel called 100LL (because of the amount of lead it still contained: four times as much as the old 80-octane), it wasn't long before the aviation community began to seriously look at using automobile gas in the lower-compression engines that didn't need 100-octane fuel. As a result, in spite of many experts proclaiming the sky would fall if we operated on auto gas, its use was subsequently approved in 1982, and this fuel has proven to be a safe way to rid lower-compression engines of the ravages of the heavy amount of lead in 100LL.

Afterwards, for almost 20 years, we saw relative peace in the world of gasoline for airplanes. There was a blip a few years ago when Congress and the EPA decided we needed an oxygenation agent in our auto gasoline sold in cities. Fortunately for the aviation industry, the chemical compound that was decided upon as an oxygenation agent for most of the fuel sold was MTBE (methyl tertiary butyl ether). Since MTBE was "approved" for aviation usage, we were able to keep using the reformulated car-gas as long as it contained MTBE, not the other oxygenation agent, ethanol.

The Coming Challenges

MTBE…

Now those years of peace are apparently coming to an end, and we are facing a potential gas crisis. The first cause of this possible crisis is MTBE, which has proven to be quite a polluter and is showing up in our water supply. Thus, the government will probably be forced to either eliminate the use of an oxygenation agent altogether or require the use of ethanol as the only oxygenation agent. Using ethanol would essentially void all of our permits to use auto fuel in our aircraft. We would either have to use 100LL as long as it is available (and cope with its lead-fouling, etc.), or try to find a source for auto fuel without the ethanol.

... Lead**...** Another factor in the developing crisis is that the EPA must eventually force aviation to comply with the same regulations concerning lead in fuel as everyone else. Although the EPA has let aviation skate along and use lead in its gas for more than thirty years, who knows how much longer this situation will continue. The optimist will say ten years; the pessimist will say one. Actually, aviation has greatly reduced its total use of lead over the last thirty years, since much of commercial aviation and all of military aviation in this country have switched to turbine engines that burn jet fuel.

…And Supply

When TCM first displayed their new ignition/injection system, I asked their representatives if they were developing it for the purpose of coping with unleaded fuel. They vehemently denied that was the case, but this year at EAA AirVenture, they began to admit that this is the main purpose for the system. The TCM people knew there was a coming fuel crisis, which would make the engines they were manufacturing obsolete. However, they wanted everyone to keep buying their "short-lived" engines; then when the crisis arrived, they could announce they had a "solution" to sell to the world.

Experts disagree on whether such a system will be enough to allow all engines to work on 92-octane fuel. A good guess is that some will and some won't. The particularly high-output engines probably won't make it, and the ones with carburetors probably won't be helped much. Good questions to ponder on this subject are "Will my particular make and model be included in the solutions?" and "What will the cost be?" I'd guess you had better set aside $5,000 to $10,000 for any engine modifications that would allow you to run on 92-octane.

...And Diesels

Of course, all the above assumes there will be a 92-octane aviation fuel in our future. When the lead is gone, maybe the oil companies won't bother, and our airports will have just one fuel available: jet fuel. I've already run across several such airports. Switching to an engine that burns jet fuel, of course, is the ultimate fix. It would be nice if we all had turbine engines, but since these conversions currently cost in the range of $500,000, this obviously is not the fix for most of us. Meanwhile, the engine manufacturers are looking at another solution, using diesels rather than turbines to replace our existing power plants.

These diesels would cost a lot less than turbines and would run on the jet fuel available everywhere. Hopefully, they would simply bolt on to our existing airframes without a lot of modification. Aviators had hoped to see some of these diesel engines flying this year at EAA AirVenture 2000. They were not there, and there were rumours that these diesels have lots of remaining problems.

Of course, again, you had better hope you have an engine and airframe that is a popular model, as probably nobody will go to the expense of certifying a diesel for the less-popular models. Also, these engines will not be cheap. I'd guess it would cost you

somewhere between $40,000 and $75,000 to convert your little single to a diesel. However, speculating on the cost is again "jumping the gun," because someone must first get one certified.

In The Meantime...

So, what can we do just now? If you are rich, you could avoid all of these problems by selling your gasoline-burning planes right away (before others read this article) and buy a jet, or you could convert your existing plane to a turbine, if such a conversion is available. If you are poor and currently fly on car gas, you could call your congressperson and ask him/her to work to make sure you continue to have available gas that does not have ethanol in it. Good luck

If you are middle-class and own a bird that can only run on 100-octane, you should probably fly a lot, while you can still get 100LL, and pray that some bright engineer comes up with an inexpensive way to make your engine cope with a lower octane fuel or a way to make a 100-octane substitute without lead.

One such possible bright spot may be an ethanol-based fuel shown at EAA AirVenture this year. It is called AGE85 and was developed under the guidance of South Dakota State University. The fuel is about 85 percent pure ethanol made from corn. The other ingredients and proportions are 14 percent pentane isomerate taken from petroleum and 1 percent biodiesel made from soybeans. The pentane is added to the ethanol to get the vapour pressure up to acceptable levels, and the biodiesel prevents corrosion. Already AGE85 is certified for use on Cessna 180s (with certain modifications), and the developers of this fuel are currently testing it in a Mooney 201.

Wouldn't it be ironic if the ethanol that could spoil auto gas for our use should wind up being the replacement for our 100LL? Stranger things have happened.

Happy flying, while we still have fuel.

Paul Merritt (pbmerri@attglobal.net) is retired from the IBM Company where he held various management positions. He is an electrical engineer by education and a lifelong private pilot (SEL, MEL, SES and Instrument). He has owned nine planes over the years: Cubs, Cessna's, Mooneys, Bonanzas and a Travel Air twin. He currently owns and shows a 1946 Piper Cub Super Cruiser (PA-12), which he personally restored and which has won many awards, including best in class at Sun 'n Fun. Paul lives in Pensacola, Fla.

NOTAMS
the editor

I was surprised to discover that 3 NOTAMS are published for our area as a result of increased security requirements.

They cover The Prime Ministers Residence, Cottage and Office (no not the Shawinigan Golf Course but Parliament Hill). They are 3000 MSL and 1/2 mile radius. This could affect a trip from Carp to Rockcliffe or Gatineau, particularly if you yielded to the South while meeting an aircraft.

Another area is Dwyer Hill Training Centre which is in a direct line between Carp and Smiths Falls. It is not a notam now as it has been published in the Canadian Flight Supplement Dated Nov.01 which we all now have HAHAHA. Please look it up.

Classifieds

Place your ads by phone with Rodney Stead @ 836-1410 or e-mail to stitstmp@sympatico.ca
Deadline is first of the month. Ads will run for three months with a renewal option of two more months.

For Sale:
- 2 Cessna 150 Ailerons
– McCauley Prop for 65 HP
– McCauley Prop for O320
– New Air Compressor – Coleman Direct Drive 4 HP
– C-140 Exhaust, Engine Mount, Baffles $500
Jim Robinson 830-4317 10/2001

Airspeed indicator by Aerosonic Corp., U.S., 20 - 250 kts, MS28021-4, manufactured in 1988, last calibrated in 1996. For RV series of aircraft and others. $180.00
Wolfgang Weichert 836-1318 09/2001

SUBARO ENGINE FOR SALE
1731 CM3 displacement engine suitable for homebuilt power plant
$1000 obo
contact David or Pauline @ 225-7381 11/2001

Articles Wanted

I am always interested in receiving submissions for this, your Newsletter. You may bring articles to the monthly meetings, or mail information to the post office box, or send me an e-mail attachment at:

stitstmp@sympatico.ca

EAA Chapter 245 Membership Application

NEW:___ RENEWAL:___ DATE:__/__/__
EAA NUMBER:.....
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Annual Dues: January 1st to December 31st. (porated after March31st for new members/subscribers).
Associate Member ____: $30.00 Newsletter plus Chapter facilities
Full Member: ____: $55.00 Newsletter, hangar, workshop, tiedowns. (Note: there is a one time $200 initiation fee when you become a Full Member)
Newsletter subscriber ____: $30.00 Newsletter
Note Associate and full members must also be members of EAA's parent body in Oshkosh WI, USA

Make cheque payable to:
EAA Chapter 245 (Ottawa)
Mail to - P.O. Box 24149, 300 Eagleson Road, Kanata, Ontario, K2M 2C3