

# Carb Heat

## **NEWSLETTER**

Hot Air and Flying Rumours

Published by EAA Chapter 245 (Ottawa) P.O. Box 24149 300 Eagleson Road, Kanata, Ontario, Canada, K1G 3H8
WEB SITE ADDRESS http://infoweb.magi.com/~birdman/eaa245.html

## January 1996

Next Meeting: Thursday 18th January 2000hrs
Bush Theatre
National Aviation Museum
Rockcliffe

Program:

- Regular monthly business

Guest Speaker:

- Peter Muehleg of Trim Air speaking about

aircraft upholstery, materials and techniques

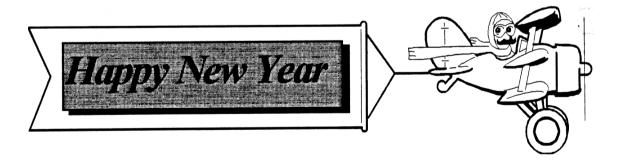
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How to Monitor your Engine's Condition by John Schwaner

(jschwaner@avweb.com)

A Word From Operations about the Snowblower - Dick Moore



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### President's Corner

As I write this column, the first day of the new year has arrived crisp and clear. The keen winter flying types have taken advantage of days like this to enjoy the superior performance of their birds, and the superb visibility. The temporarily earth bound amongst us have enjoyed prodigious amounts of hanger flying; while a lucky few snowbirds are enjoying both warm and flyable weather.

### **New Years Resolutions**

As is customary at this time of year we all make resolutions for the new year. In addition to the usual eat less, sin less, and complain less generic resolutions; pilots, especially EAA pilots need to add a couple more such as:

- 1. I will try to introduce at least 10 new **Young Eagles** to the unique joy and freedom of flight in 1996.
- 2. I will remember that **Bald Eagles** would appreciate a flight as much as a Young Eagle.
- 3. I will volunteer at least my fair share of time to improve, and maintain the chapter facilities.
- 4. I will write at least one article for the chapter newsletter.
- 5. I will continue to make safety, a priority in all my aviation activities.

It is also customary to look back at some of the highlights of the past year. From the club perspective, it has been encouraging to see a steady growth in membership. Remember to send in your renewal to Barney de Schneider if you have not already done so.

It is also encouraging to see an increase in the number of people

participating in maintenance projects around the clubhouse as recorded in the work log.

Both the Young Eagles flight day in June, and the Fly-in breakfast were solid successes, and I know we can count on Lars Eif and Barney de Schneider and their respective teams of volunteers to repeat this success in 1996.

## Snowblower Use & Safety

With the heavy snowfall this year the snow blower is seeing heavier use than ever.

The transmission unit has failed twice in three years, shearing the drive shaft (1" dia.). This is a clear sign of overload and abuse. I encourage each user to treat it as if it was your own; listen to the engine and don't overload it. In heavy or deep snow, cut a two thirds swath in the lowest gear. If the snow is crusty, then break it up first with a shovel. I am sure with a little TLC, we will be able to keep it running for many years. Report any problems to Dick Moore, operations manager, and record in the work log.

Above all make sure safety is first and foremost. We have already had one member severely crush two fingers due to a moments inattention and carelessness. Always shut down before attempting to clear snow from the discharge chute.

## November Highlights:

Bill Peppler, general manager of COPA was our featured speaker at our November meeting. Bill provided us with an interesting outline of the history of COPA, and his role since its inception. Bill also outlined many of the new changes coming to a Transport Canada office near you real soon. Of particular interest to many club members

is the upcoming ability to reregister older certified aircraft such as C-150 into the Homebuilt category such that you can perform your own maintenance, or perhaps install an automotive conversion engine, or whatever. While many details have to be ironed out, it seems certain that this one is coming. For further information stay tuned to the COPA newsletter; if you are not already a member, you really should be as COPA is the most effective voice representing our interests to Transport Canada.

## **Bob Hoover @ Brampton!**

As I noted in my last column, common sense finally returned at the FAA, and Bob Hoover is now back in the air. I am sure many of you will have the opportunity to once again marvel at this master at Sun n Fun or Oshkosh. That same opportunity will also be available to attendees at the Brampton Flying Club's 50th Anniversary Air Show; July 6th & 7th. If you have never been to Brampton, you don't know what you are missing; it truly is just about the finest facility anywhere in North America. So be sure and mark your calendars for this date; it's sure to be a double treat!

## Jan. 18th Mtg. at NAM:

Our next meeting is being held Thursday Jan. 18th at our normal National Aviation Museum location in the Bush Theatre at 8:00 PM sharp. Our feature speaker is Peter Muehleg of Trim Air; Peter will be talking about aircraft upholstery materials & techniques. I hope to see you there.

Gary

## Florida Flying

Ken and Tricia MacKenzie, (Renter Pilots)



As promised the following is a report on our flying in florda as rental pilots.

We arrived in Palm Harbour Florida (located on the Gulf of Mexico) on November 6, after a surprisingly cold trip down. We did not encounter comfortable temperatures until we were in Jacksonville, Florida.

hand circuits off 15 and R.H. circuits off 33. Lifting off 15 you make a hard left turn at 400 feet otherwise you enter the control tower space of Clearwater International. As I have said, plenty of airports.

Touch and go's are not allowed as well as no night flying. The city is looking at putting in runway lights within a year or so. As well as building new hangars and lengthening the runway.

The airpark is home to about 120 aircraft, with a waiting list of over fifty more, and of course a flying school and aircraft rental facility.

Rental rates are reasonable: (per hour wet)

C-152 \$39 C-172 \$54 \$160 U.S. an hour, and \$600 U.S. per hour for a twin. it doesn't stop there - landing fees and navigational costs are horendous. We in North America can count ourselves lucky and we must "fight" to keep it that way.

Now on to our flying escapades. The young fellow behind the rental desk informed us as follows: go to the Orlando international, to the local FAA with pilots licence, medical and a picture I.D. This we were told will get us a U.S. permit.

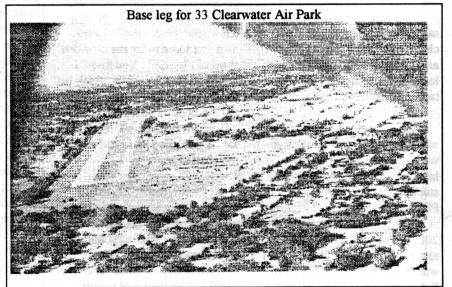
November 15, a two hour drive found us in Disney country and Orlando international at the FSDO Flight Service Directory Office, as they now call themselves. Thirty minutes later we walked out the door with a temporary permit in

Since our arrival a month ago, the weather has been perfect CAVU flying weather - rained twice at night only.

Daytime temperatures in the 75 degrees F. range to 50 degrees F. at night.

If you take a sectional map of Florida and throw a dart at it, you have a 50% change of hitting an airport.

The airport we have chosen to fly out of is a short 15 minute drive from our camp site. Clearwater Air Park is located just north of downtown Clearwater, right on the coast of the Gulf of Mexico. The air park is run by the city of Clearwater, with a 3,000 foot runway located 33 degrees and 15 degrees. Left



C-172RG \$70
Piper Archer \$58
Piper Warrier \$56
Beach Duchess \$125
Instruction \$20 per hour
Instruction multi \$26 per hour

We met a german pilot, who finds it cheaper to come to Florida for two weeks each year to do his flying, renting a/c. Rental for a 150 in Germany is

our pocket, permanent one to follow via mail in 5 weeks (no charge).

Friday, November 17th, dawned bright and clear (as per usual) Tricia and I decided this was "The Day". We called for a rental and reserved a 152 for 1300 hours for as long as we wanted. During the week no trouble getting a rental.

1300 hours found us at the rental desk ready and willing - but first a few circuits with an instructor - insurance regulations I was told. No problem - out came our instructor very nice fellow in his late thirties, by the name of Dave.

Dave: did you fill out our info sheet?

Ken: No.

Dave: Let's do it.

Ten minutes later sheet filled out as best as I could (I hate questionnaires).

Dave: When was your last B1 Annual check?

Ken: Never, we don't have one in Canada

Dave: Sorry, to rent and fly in U.S.A. you must have a B1 Annual checkout which consists of a one hour ground oral examination on F.A.R. and a one hour aircheck (YIKES!!!)

Not to waste the day, I said okay how about the air check right now. So off Dave and I went into the wild blue leaving Tricia impatiently tapping her foot on the ground.

It seemed like hours as I was put through my paces, but we landed forty-five minutes later, as Dave was booked for a student at about 1400 hours. Plans were then made to return at 9 a.m. Monday November 20th for "more air work" -?? and one hour of ground exam. I was instructed to buy a copy of F.A.R. (\$13 U.S.) and study it over the weekend (groan).

After Dave left with his student, Tricia asked "Well how did you make out?" I replied I did not know. I'll tell you better after Monday.

We purchased a copy of F.A.R. and studied the chapters that Dave suggested, along with a T.C.A. chart of Tampa and

Orlando. both of these large airports dominate this par tof Florida with large T.C.A.'s.

November 20th, 9a.m., back at the air port this time to face my fate "alone". Tricia had decided she was not ready to hang out at the airport for two hours.

Dave showed up at 9:10a.m. and we went right at it. Forty-five minutes later Dave finally stopped grilling me and said okay, lets go flying.

We made two take offs and landings (no touch and go's) The 152 had a very bad nose wheel shimmey. So we taxied it right to the maintenance hangar only to find out the trouble had been reported but maintenance had not taken the aircraft off line. Walking back to the clubhouse, Dave gave me a slap on the back and said "You're a dame fine 'bush pilot". I now turn you loose to fly the crowded skies of Florida." You know I felt like I was 21 again. Back in the RCAF, as Dave signed off my log book. (Bonus no more testing for two years.) But I will say, it was good and I did enjoy the challenge.

November 22, finally Tricia and I were airborn on our own enjoying the beautiful scenery of the gulf coast and its white sandy beaches. We covered about 75 miles for a flight of one hour and twenty minutes. The air is busy with sightseeing a/c. Banner towing a/c and military a/c. With two pairs of experienced eyes we managed stay clear of traffic and stay under class "B" air space.

Now we are looking forward to going inland to fly over Disney Land and out to the east coast to the space centre. this will make for a further report as well as filling you in on Kermit Week's new attraction, "Fantasy of Flight" which opened this month on the 20th.

By the time you read this Christmas will be history. Hope you all had a jolly one and Happy landings in the New Year!



Notes From the Tool Crib

The Tool Crib is a resource available to all "FULL MEMBERS" and is accessed by using the hangar door key: Tools may be borrowed anytime and may be taken home. however, unless they're to be put back immediately the tool tag should be removed and the borrower indicate their name. address, phone number and date borrowed. The tag should then be attached to the cage in a prominent place. Tools should not be kept more than two weeks unless special arrangements have been made.

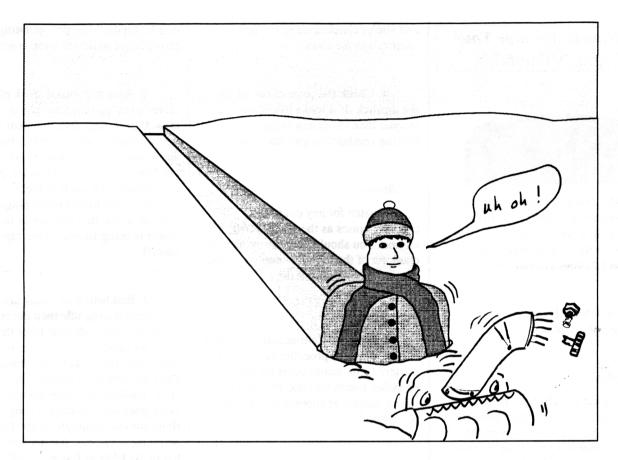
The tool crib is constantley being expanded and as long as members respect the rules this will continue. Also suggestions for new tools are always welcome.

# ITEMS UNACCOUNTED FOR, WHEREABOUTS UNKNOWN

#### - BUNGEE TOOL

If you have this item or know of it's whereabouts wuld you see to it that it is returned.

Thank you Dick



## **Operations**

Operations was notified on November 17th that thesnowblower didn't On Saturday, November 18 your operation's officer and president diagnosed the problem to be in the auger drive gear box. Upon completely dismanteling the unit we found it to be totally worn out including the case. So badly worn that it was very difficult to believe this was a new unit just one season ago. When the unit was two years old the same symptoms occurred and the unit was returned for warrantee repair. Here we are one season later and again we need a new gear unit.

However, we went to Sears and presented them with the parts and they pulled up the work order to show what parts were replaced. After a visit to the repair shop. I now have no doubt that this was a like new unit one season ago. Regardless, they agreed to replace the unit and we hope to have the snowblower operational soon.

There is no way we will get another gear unit from Sears next year and at a cost of \$300 it is not feasible to continue to operate this machine, therefore, I must ask all that use this machine to not overwork it. the sound of the engine will

usually tell you when it is labouring. If the snow is hard packed it may be necessary to break it up with a shovel until the first path is made and then take small bites on succeeding passes. if the snow is heavy, wet or slushy, you will have to go really slowly.

Remember, use it but don't abuse it! Also, never blow snow onto aircraft, there could be gravel in it!

Mind the gravel trenches - don't want to pick up stones and launce them onto aircraft.

Operations Director

## 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 at a rich fuel/air mixture. If your finger has oily black soot, then your engine's 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's 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 then 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 then 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 then 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 its 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.

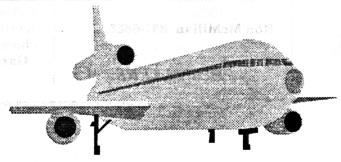
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John Schwaner is AVweb's powerplant expert. John is a world-class authority on piston aircraft engines, and a specialist in the engineering analysis of engine failures. John runs Sacramento Sky Ranch, Inc., a leading distributor of aircraft and engine parts, and probably the foremost aircraft hose shop and magneto overhaul facility in the U.S. John and his wife live in Sacramento, California.

John has also written two superb technical books: Sky Ranch Engineering Manual and The Magneto Ignition System. Both can be previewed in and ordered from the AVweb Online Bookstore.

Carb Heat

EAA 245 Newsletter January 1996



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Classifieds Editor

## CLASSIFIEDS

08 January96

#### AIRCRAFT FOR SALE:

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Cessna 150, 1966, 3500 TT, 1000 SMOH, recent paint, fresh C of A \$16,500.00 Mike Sacoutis (613) 729-3774.

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\$200.00

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**Tim Robinson 824-5044** 94/10

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Ron Michillan 657-6665

## **PROPELLERS**:

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Propeller, Hartzell HC82XL-2C constant speed plus governor for 320-360 Lycomings Garry Fancy (613) 836-2829

Propellers, VW 48/30 & 60/38, wood plus adapter for 1600cc VW engine.

Jacques Pilon (613) 446-4175

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Garry Fancy (613) 836-2829

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Garry Fancy (613) 836-2829

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