



NEWSLETTER

Carb Heat

Hot Air and Flying Rumours

Vol 34 No. 04

Published by EAA Chapter 245 (Ottawa) P.O. Box 24149 Hazeldean R.P.O., Kanata, Ontario, Canada, K2M 2C3

APRIL 2004

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Canadian Aviation Museum

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Russell Holmes & Claude Roy

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President's Page
by Gary Palmer

With the official arrival of Spring Mother Nature saw fit to remind us no mere calendar would overrule her imperial wishes, and promptly dumped 5 cm of snow with accompanying freezing temps. Prior to this, the grounds were drying up nicely, so it is still necessary to take extra care when manoeuvring on chapter grounds whether by car or aircraft. We have placed a couple of concrete blocks at the end of the access road to serve as a reminder that the ground is still too soft to support vehicles.

Chapter contributions welcome, but please check first!

Many chapter members have been kind enough to donate useful items to the chapter clubhouse such as furniture, TV, Tools, and books/magazines. These donations are always welcome when they represent something we really need. They are less welcome when they are simply dumped at the clubhouse without first checking with a member of the executive to ensure they are really needed.

Magazines are becoming a real problem, as we now have a fairly complete collection of Sport Aviation and Kitplanes. Whenever a new box of magazines is dumped in the lounge, someone (usually an executive member) has to go through them and see if any are new additions; otherwise they are left with the task of disposing of the excess. Having spent several hours along with Ken Mackenzie in this thankless task, I can attest we are not the best place to drop off your lifetime collection of aviation magazines. I would suggest recent magazines less than 1 yr. old are OK, but we really don't need copies of COPA, AOPA, newsletters with the exception possibly of special publications covering border crossings etc. If you do have magazines you think are unique, please check with Ken Mackenzie or Dick Moore first. Books are generally welcome, but we don't need multiple copies of common Transport Canada documents, or internal government procedure manuals as in one case.

While the TV was welcome, an old record player is best left at the cottage. If someone wants to donate a VCR to complement the TV, then we won't need to cannibalise our home set-up for the June meeting. Likewise a decent working radio for the shop or lounge is handy, half-dead units are best left in the garbage. I think you get the idea; useful gifts are welcome, garbage is not; when in doubt, please check first.

March 2004 meeting summary

Charlie Martel played to a full house with his talk on his experiments with tuned exhaust systems to gain power while keeping noise to acceptable levels. Charlie had a thorough and complete presentation that covered the research he had done, the fabrication of the system, and the test results. Judging from the appearance of the welds in the photos, Charlie is also a very skilled welder, as proven by the greater than expected longevity of his system.

Upcoming meetings/Events.

May 15th	Annual Spring Cleaning Saturday May 15th. We are holding this a week earlier to avoid conflict with Victoria day and the start of the fly-in season. Dick Moore will be doing his usual great co-ordination job. Plan for a 9:00 AM start
May 20th	Martin Poettcker will provide an update on the early testing of his Subaru engine conversion for his CH-601, along with the reduction drive and harmonic resonance damper.
June 19th	The June meeting marks the start of the Saturday morning meetings at the Carp clubhouse. The June meeting is the usual Oshkosh pre flight planning session. It is also the first flight awards presentation for those who had their first flight of a newly hatched homebuilt in 2003. If you were one of those deserving souls, please let me know so the plaque can be ordered in time.

Thursday April 15th 8:00 PM: Claude Roy and Russell Holmes - " Kitty Hawk Pilgrimage".

Claude Roy and Russell Holmes will discuss their respective pilgrimages to Kitty Hawk, Claude in his Challenger ultra-light prior to the historic re-enactment; and Russ will have video he shot on site Dec 17th 2003, at the centennial celebrations. This should be an entertaining presentation, see you there!

Gary

CYOW VTPC

VFR FLIGHTS IN OTTAWA CLASS C AND TERMINAL CLASS D AIRSPACE

For better airspace management, which will minimise delays, ATC frequency congestion, and improve safety, all VFR aircraft wishing to penetrate or operate in the Ottawa Class C and terminal Class D airspace

must obtain a transponder code in advance. This procedure applies whether or not a VFR flight plan or itinerary has been filed.

To obtain a transponder code:

No Flight Plan:

Contact the Montreal ACC at 866-VFR-CODE (866-837-2633) to provide ATC with information pertaining to your flight to obtain your transponder code prior to a flight into Ottawa Class C and terminal Class D airspace.

Flight Plan:

When the Flight Plan is filed the Flight Information Centre will issue the code, making a second call to 866-VFR-Code unnecessary.

Flight procedure:

1. Set the transponder to the assigned code just before takeoff (Ottawa area airports) or prior to the first communication with ATC.
2. Contact ATC at least 5NM prior to entering Ottawa Class C or terminal Class D airspace.

CYOW PRO Section/ VFR Codes

VFR Codes: For better airspace management, which will minimise delays, ATC frequency congestion, and improve safety, all VFR aircraft wishing to penetrate or operate in the Ottawa Class C and terminal Class D airspace must obtain a transponder code in advance from the Montreal ACC at 866-VFR-CODE (866-837-2633).

YOUNG EAGLES CHAIRMAN

the Young Eagle's program is pleased to announce our new Chairman, Mr. Harrison Ford.

Mr. Ford has been an EAA member since 1996, an active pilot and a Young Eagles Flight Leader with over 90 Young Eagles to his credit and that of EAA Chapter 1049. He has a passion for aviation and sharing it with others, especially young people. We are looking forward to working with him as Young Eagles continues to launch the dreams of young people worldwide.

In addition, we are also pleased to let you know that Gen. Chuck Yeager will assume the new post of Chairman Emeritus. We are grateful to the General for his support, leadership and guidance through the years as we reached our initial goal of flying 1 million Young Eagles. The General will continue to be actively involved in the program, especially through his activities at EAA Air Venture Oshkosh.

Prop Clearance - What is Right / What is Required

By Curtis Hillier

First things first, I swore I remembered reading something some where about required prop clearance for aircraft. I contacted Adam Hunt at COPA to see if he recalled anything. His resulting article made his print deadline, so he published his article first, - way to go Adam.....

Here is my cut at it for those who do not get the COPA newspaper.

After I found a hole off of Bravo at Carp Airport, and had to send my blades in for repair and inspection, (not to mention the \$100USD repair bill), I wanted to make sure my aircraft had the "required" clearance.

Initially, I thought several feet would a good number but thought I should check into the available specs.

I checked the old CARs 549, CARs part 35, and CARs 535 but found nothing.

Many things should go into this decision:

- 1) How likely am I to taxi on uneven ground
- 2) How likely are there to be holes just off the taxiway (in the parking zone)
- 3) How deep are the small ditches I may have to taxi through at Oshkosh
- 4) If my bungee suspension breaks on landing, how far will the nose drop when it hits the hard stops. Do I have a hard stop built into my amateur built aircraft
- 5) Do I do start ups on gravel taxiways
- 6) Will I land or operate on gravel runways
- 7) Will I land or take off from water

The list can go on and on but many of the above questions seem to indicate that we should not bother putting propellers on our aircraft since no matter what we do, we will likely get into a situation where damage will occur.

Some seaplanes put the prop way up high where very little can get into it, but they are usually operating in dirty air and become less efficient. The same goes for pushers, and in some pusher designs, the prop can get unbelievably close to the ground with significant rotation on the departure or the flare.

Finally with a lot of help from Adam Hunt at COPA, I now have current up to date information.

It turns out, for **Basic Ultralight** there is no standard at all. Props are expensive so don't hit them on the ground says Adam. Basically, you want to ensure that flying objects under considerable kinetic energy, (such as a prop), need to be protected as best as possible. This will avoid damage to your aircraft, (and mine), if your prop hits the ground or the airframe and departs the engine/speed reduction system. Bolts that might come loose and ingested should also be an intricate part of you walk around. Check for loose cowling parts or backing out screws – even the ones you have to crawl around on the snow or mud to inspect!

For Advanced Ultralight the reference is *Design Standards for Advanced Ultralight Aeroplanes*. There is no specified standard for prop clearance here either.

For Amateur-built Aeroplanes the reference is CARs 507 Appendix C (since CARs 549 is not in use and has been replaced under exemption by 507 C). This does not specify a ground clearance for props but does require that:

- 3) Prior to issuance of a flight authority, an amateur-built aircraft shall be inspected in accordance with a schedule acceptable to the Minister:
 - a) for workmanship and general serviceability;
 - b) to detect apparent and obvious unsafe features; and
 - c) to provide reasonable confidence of safe operation.

Now for the **Certified Aircraft**. For **Certified aircraft** the reference is CAR 523.925)

523.925 Propeller Clearance

Unless smaller clearances are substantiated, propeller clearances, with the aeroplane at the most adverse combination of weight and centre of gravity, and with the propeller in the most adverse pitch position, may not be less than the following:

(a) *Ground clearance*. There must be a clearance of at least seven inches (for each airplane with nose wheel landing gear) or nine inches (for each airplane with tail wheel landing gear) between each propeller and the ground with the landing gear statically deflected and in the level, normal takeoff, or taxiing attitude, whichever is most critical. In addition, for each airplane with conventional landing gear struts using fluid or mechanical means for absorbing landing shocks, there must be positive clearance between the propeller and the ground in the level takeoff attitude with the critical tire completely deflated and the corresponding landing gear strut bottom. Positive clearance for airplanes using leaf spring struts is shown with a deflection corresponding to 1.5g.

(b) *Aft-mounted propellers*. In addition to the clearances specified in paragraph (a) of this section, an airplane with an aft mounted propeller must be designed such that the propeller will not contact the runway surface when the airplane is in the maximum pitch attitude attainable during normal takeoffs and landings.

(c) *Water clearance*. There must be a clearance of at least 18 inches between each propeller and the water, unless compliance with 523.239 can be shown with a lesser clearance.

(d) Structural clearance. There must be:

(1) At least one-inch radial clearance between the blade tips and the aeroplane structure, plus any additional radial clearance necessary to prevent harmful vibration;

(2) At least one-half inch longitudinal clearance between the propeller blades or cuffs and stationary parts of the aeroplane; and

(3) Positive clearance between other rotating parts of the propeller or spinner and stationary parts of the aeroplane.

(Change
(Change 523-5)

523-4

(96-09-01))

As Adam points out: "I would suspect that the MDRA inspector for an amateur-built might be justified in saying that the CAR 523 standard is reasonable for amateur-built aircraft as well, although it isn't legislative!" I agree.

So, I guess I did read something about prop clearance somewhere, it is a good thing some of us still have enough brain cells to remember where we read things, Thanks Adam!

GPS, WHERE IS MY GPS?

Part 1

By Curtis Hillier

Wanting to be able to find my way home the next time I go off exploring, I decided to renew my navigation skills. Update my chart reading, review the 600 some odd acronyms in the Flight supplement, and try to decipher the critical information on the NAV chart at the EAA245 lounge – which is now pretty much bleached out due to the heat and sun exposure.

I have played with GPS systems at Oshkosh and while driving down to Florida for a family vacation. I found the land based unit's knowledge base quite vast. By typing in the name of our fast food choice, the SW immediately found the next exit that had such a restaurant. The SW told us which way to turn and what hours the restaurant kept. Truly impressive, but how clean were the bathrooms?

I decided to buy a GPS for my aircraft so I could find out a town's name or the road under me if I needed too. I began looking at the available units at Oshkosh, discussing the features and making queries with fellow EAA'ers who had already bought one and tried to use it. Most people will unequivocally admit that the GPS is to General Aviation (VFR) as the pooper scooper is to dog owners. It is there to get you out of a potentially messy situation.

I got a lot of feedback both from a technical aspect and from a user interface. Some units are hard to read because the screen is too small or the LCD is washed out by the sun in the cockpit. Some are harder to upload files to, some have poor support.

I settled on the Lowrance 1000 since it was well supported, easy to use and had a big screen. However, it was (is) out of my reach monetarily, and would be difficult to place in my small cockpit. I still wanted to have something to navigate with so I explored my options...

I still had the Delorme "EarthMate" GPS we used on our trip to Florida, but knew it had a proprietary serial interface, making it difficult to run on my laptop with say Microsoft streets and trips SW. It only ran with the Delorme SW, and the version I had did not include Canadian streets. A quick look at Delorme's web site confirmed that they now have SW which had Canadian cities and streets. While I was there I found out that they sell an interface cable for PDAs. I had investigated the PDA navigation SW but deemed the screen to hard to read in the bright sunlight.

I did though have (free) access to my wife's Palm "Tungsten T" PDA. I found a web site in Germany that posted a mod to the standard docking station to convert the USB interface to a serial RS232 interface. I now had the technical data to attach the GPS receiver to the PDA.

Palm also sells a "flying" SW package for the tungsten for use with standard serial GPS receivers and it only costs around \$40.00 USD. I had to make sure I could get the Palm flying SW to talk to the Delorme GPS unit.

I decided to do some tests.... Initially, I hooked the GPS receiver up to one of my laptops and took it for a ride in my aircraft. I was interested in finding out how much noise the laptop created on the aircraft radio, and if the GPS would get a good lock. The Delorme SW has a utility where you can see the satellites and which ones are in lock verses just in view. I found that I could place the GPS receiver unit in a variety of cockpit locations with not less than five locks when stationary, and typically had six to seven locked satellites. I decided that I would go out and see how well things worked when moving. I meticulously tied down the laptop, and adjusted the screen so I could get a quick glance of the pertinent data. I turned on the tracking data so I could review the details later.

The GPS showed me that I was at airport elevation and my location was spot on the Flight Supplement's specs. I was a bit concerned though that the elevation did not change when my wheels sank in the mud (I'll fill in the ruts Dick... don't worry). The data even showed my direction and painstaking slow progress back to my tie down as my laughing help aided me in the tow back to my spot. Great accuracy and tracing even for such a short flight!

What I did learn though, is that the laptop's radio noise was not significant and the cheep GPS unit worked great even with the engine pumping out all of that magneto noise. Note each unit was running off of their own battery packs, so I didn't have to worry about noise from the electrical relays in the regulator for now.

The next step is to use the smaller and lighter Palm. I need to make up the cable and test it.

The cost for my solution will be around \$100CDN (I already have the GPS receiver and the Palm). Not bad for a GPS with flying in mind. I have not yet looked closely at the GPS Pilot SW since the free demo will only open ten times before I have to buy it, and I want to make sure the communication to the Delorme GPS unit works first.

I hope that this cost effective solution will provide me with basic navigation back up to my astute VFR skills until I can budget for a "real" unit like most of my co-aviators have.

Here is the new Ontario Seaplane Association web site.

<http://dougronan.com/ontario/Default.htm>

Submitted by: Robert Schmidt

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Do you have a favourite web aviation sight? Would you like to share it with other chapter members? If so please forward it to your newsletter editor via email and I will assemble them into a report in a future newsletter.

Items for Sale:

If interested in these items call Hugh Glynn at 613-225-7356			Asking C\$		Value
Item	Qty	Description	Ea.	Lot	US\$
Flight Computer	1	Jepson Tech Star Ser#14238		\$80	\$100
Fuel Testers	2	ASA 1used, 1 new	\$3	\$6	\$6
Vertical Speed indicator	1	Pioneer Model A57S # AC20662		Make Offer	
Aircraft Spruce Controls	1	2 lever throttle quadrant		\$25	\$40
Tillitson Fuel Bowls	2	Gascolators	\$20	\$40	\$50
Primer	1	unknown		Make Offer	
Cabin Pressure Altimeter	1	2 1/4 " panel mount		Make Offer	
Turn & Bank Indicator	1	Ball style		\$30	\$39
Panel Airspeed Indicator	1	unknown		Make Offer	
E L T personal portable	1	Narco Avionics Battery operated		\$185	\$185
Magnetic Compass	1	New Airpath CB2100-T4		\$100	\$120
Aircraft Intercom - Flightcom	1	Voice activated 4 place I12GX new		\$125	\$150
Dynamic Microphone	1	New		\$60	\$87

For Sale: Complete Artificial Horizon and Directional Gyro Kit. Includes 3-1/8" AH and DG, 2-1/4" vacuum gauge, 211CC vacuum pump (fits Lycoming O-235,-320,-360,-540,-720 series engines), regulator, filter, hoses and hose fittings. Never installed since overhaul by Century Instruments. New replacement value over \$1800 US; available for \$1400.00 Cdn firm.

Lars Eif (613) 993-3618 days, (613) 837-6680 evenings,
04/04 Email: EIFL@tc.gc.ca

For sale: 1998 PELICAN PL, 63 TT, nosewheel , VFR & engine instruments, Icom A4, 2 hdsets, ELT< GPS, electric trim, cabin heat, 100 hp Subaru EA-82, 3 blade Warp Drive Prop, PSRU by reductions, 10/10 in & out. Always hangered. Airframe and kit fob factory \$32,000. This one complete for \$40,000, located Northern NB.

03/04 Email Bob @ melvilla@nbnet.nb.ca

Wanted: 3 wire screw on connection for RC Allen model A2475-2 turn and bank with 5/8 x 24 pitch thread.

02/04 Carl Bertrand @ 613-837-7412

For Sale: Federal 1400 Skis, 10 inch wide. \$900.00

Set Continental A65 exhaust pipes \$175.00

2 New Avcom headsets model AC200 \$150.00

01/04 Brian Mckinley @ 613-487-2451 or 613-299-8424

For Sale: McCauly prop DTM533 73 x 57 1A170 8 bolt Fits Continental 0300 \$600.00

Wheel Pants for Cessna main gear pointed end style no backing plates \$100.00

Baffles for 85 HP Continental \$50.00

Soft Com 4 place intercom \$75.00

01/04 Call Jim @613-830-4317

For sale: Lycoming 0235-C1, firewall forward with all logs SMOH 1500 hrs. Removed from wind damaged aircraft.

Compression good, one new cylinder. \$4995.00

Engine mount from Fleet Canuk for 0-235 \$350.00

01/04 Peter @ 613-729-0683, piper909@magma.ca

Articles wanted

Place your ads by phone with Rodney Stead @ 613-836-1410 or e-mail to stitsmp@sympatico.ca

Deadline is first of the month. Ads will run for three months. You may request a two-month extension.

YOUR ADD COULD BE HERE



EAA Chapter 245 Membership Application

NEW:___ RENEWAL:___ DATE:___/___/___

EAA NUMBER:.....

EXP Date: ___/___/___

NAME:.....

ADDRESS:.....

CITY/TOWN:.....

PROV:.....PC:.....

PHONE:(.....).....H (.....).....W

EMAIL:.....

DISTRIBUTION Preference: email..... post.....

AIRCRAFT &

REGISTRATION:.....

OTHER AVIATION AFFILIATIONS:

COPA:___ RAAC:___

OTHER:_____

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)

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