



Carb Heat

March 2013

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Next Meeting: Thursday March 21 at 7:30 PM
Bush Theatre
Canadian Aviation and Space Museum

Presentation:
New Zealand Air Adventures
by Kathy Reducka and Bruce Wheaton

Editor's Comments

This month as usual, Cary Beazley presents the President's Message and Wayne Griese brings us a historical look at Carb Heat.

Phillip Johnson passes on precious information on batteries.

Alfio Ferrara continues his Gadget Corner, with an article on Automatic Packet Reporting System.

There are increasingly more listings for flyout possibilities. And check the For Sale section where there are new opportunities listed.

We need more stories and information to pass on to our readers. If you go to fly-ins, take notes, pictures and write a short article so others find out what they missed.

Yvon Mayo

President's Message by Cary Beazley



Spring break with the promise of a season change is just around the corner.

Unfortunately, Mo had poor weather for his Ottawa river fly-in meet again this year. There was still a fair turnout via other modes of travel and the chili was good as per usual. Hopefully Mo gets good weather for the big anniversary next year.

Kars had a good turnout as well.

The car and plane traffic at the Carp EAA Chapter has already started to make a mess of the grass with some of the warmer weather lately. Lets try to keep the car traffic off the grass until it has dried up.

Peter Handley shares some of his aviation photographs, stories and insights.

For those that missed it, Peter does a lot of the phenomenal photography for Vintage Wings among other things. We were lucky enough to have Richard Allnutt drop in as well; some of you might recognize Richard as another (phenomenal) Vintage Wings photographer.

Both of them joined us for dinner before the meeting. There were lots of interesting conversations and I very quickly discovered these guys

know a lot about aviation history and airplanes.

I want to thank Peter again for sharing some of his rather large collection of pictures and catching the people side of the stories and many amusing anecdotes.

From the light technicals of photography, 'almost' perfect pics, the fun of trying to catch the perfect shot with blind shots inside confined cockpits, to the Veterans for whom many Vintage Wings aircraft have been dedicated.

Remembering some of our friends that have gone West and the next generation doing the darnedest things.

If anyone has a spare gyro-stabilized camera platform, Peter is interested.

Ulrich leaks four letter expletives in the cockpit - who knew?

Remember, It's not broken; it's British ;)

And the final tidbit; NEVER, EVER leave your camera unattended around Rob Erdos.

I hope to see you guys out and about.

Thanks again and keep in touch.

Legal Stuff

CAR 571.11 Dual signature requirement for maintenance of controls

News circulated recently that there has been a clarification or change in interpretation requiring all aircraft, including amateur-built aircraft, to require two qualified signatures when any maintenance is done on

controls that affects the engine or aerodynamic controls such the carb heat, throttle, rudder/aileron cables,...

That implied the builder plus an AME or two AME signatures were required. The reality is the rule has always been there and it applies to Amateur Built as well. I've heard the military typically had a 3-signature rule.

There is no requirement for qualifications on the person entering the second signature in the logbook for control maintenance, previous construction or inspection experience is sufficient. In other words, have a second set of eyes check the work for proper assembly, locking and operation. Your homebuilder buddy can re-check the final bolt torque, correct number of threads are showing, pulleys, guides, stops, centered control positions, free and proper control motion, locking cotter pins, safety-wire, ... common sense and not too arduous. This is stuff we were hopefully doing already.

Here is an airworthiness notice, courtesy of Greg Holbrook of TC, on the subject of the qualification requirements for the second person. <http://www.tc.gc.ca/eng/civilaviation/standards/maintenance-aarpc-ans-c010-557.htm>

Thanks Greg

Update on the OTTAWA TCA Airspace Consultation, Airspace grab part 2

See the Jan 29, 2013 blog for recent information regarding the consultation:

<http://copa8.blogspot.ca/>
<http://copa8.blogspot.ca/2012/12/nav-canada-study-of-ottawa-tca-airspace.html>
<http://copa8.blogspot.ca/2012/11/nav-canada-to-conduct-study-of-ottawa.html>

The February 27th consultation was well attended, although a few expected stakeholders did not attend. The session was largely a repeat of the previous Apr 26, 2011 consultation.

NavCanada still seems to be determined to convert Ottawa terminal airspace from class 'D' to class 'C'.

There was discussion regarding the compression of VFR air traffic under and around the current class D cylinder, particularly in the north. There were discussions on raising the class D floor, creation of a new common frequency northern VFR corridor with boundaries from roughly Carp to East of the Rockcliffe Flying Club, IFR arrival and departure corridors and freeing up some airspace as part of the ongoing Windsor-Toronto-Montreal airspace redesign effort.

It was noted that aircraft movements at CYOW were lower in 2012 than 1997 with questions as to what has changed and what problems the conversion was trying to solve?

ATC cannot provide services in the CYOW class D terminal airspace now on busy days. Access to class D airspace is already being denied and Guy St-Arneault of Montreal ACC has

confirmed that Staff shortages have occurred.

The conversion of class D airspace to class C will further compress VFR traffic outside terminal, transferring the risk and reducing the safety of VFR traffic. It will force ATC to deny access if they are unable to provide services, resulting in less flexibility.

Some reasons mentioned to not convert to class D were safety, controller related issues, denial of access, movement restrictions and loss of flexibility.

VFR traffic is only required to establish radio contact with ATC to enter class D, no clearance is required. According to many interpretations of the CARS, ATC does not have the authority to issue instructions to VFR traffic in class D airspace.

There were additional discussions on instructions (CAR 602.31) and CADORS. Instructions can be refused if safety is an issue (and notify the controller the instruction is refused).

A glider fatality was mentioned. The effects of controller issues, movement and altitude restrictions on glider safety were highlighted.

NavCanada is expected to make changes by next year.

Let's hope this does not go ahead as is, or expect restrictions and denied access to terminal airspace on busy days...

SAM aircraft First Flight

www.sam-aircraft.com

Congratulations to Thierry Zibi and the rest of the SAM team on their successful first flight Mar 6, 2013:

<http://www.youtube.com/watch?v=MNZrctZ3BTw>
http://www.eaa.org/news/2013/2013-03-06_SAM-LS-makes-first-flight.asp

We wish them continued success on their flight test program and look forward to seeing them at the fly-ins later this year.

Pontiac Airpark bought more land

<http://www.pontiacairpark.com/News.htm>

Around the Patch

There has been lots of traffic on some of the nicer days.

1st Flight Plaques

The Chapter is putting together a list of First Flights by Chapter members in the last year for presentation at the June meeting. If you had a first flight or know a member who did, please let one of the executive know before the end of April.

EAA 245 Club Stuff

Sunday morning get together continue @10am at the Carp EAA hangar. See you there.

Many Chapter members get together for dinner prior to each EAA 245 meeting at Swiss Chalet (corner of St Laurent Blvd and Montreal Road) @ 5:30PM. Everyone is welcome.

See you at the meeting!

Cary

ODYSSEY Battery 101

In analysing and resolving some problems with my aircraft battery, I consulted with the manufacturer and received detailed recommendations from Odyssey. These are published here for everyone's benefit.

Phillip Johnson

The usable energy of the ODYSSEY battery is from 11.2V (0% state of charge) OCV to 12.84V OCV (Open Circuit Voltage should be checked after a minimum of 6-8 hours rest period with no loads) or higher. When the battery goes below 10.0V OCV, you are getting into the chemical part of the battery and can cause permanent damage. At less than 8.0V the ODYSSEY limited warranty deems the battery over-discharged due to abuse or neglect. The ODYSSEY charger/maintainer can maintain the battery indefinitely in or out of the application. If the battery becomes over-discharged (below 11.0V) then the sooner the battery can be fully charged the better and if the battery remains connected to the application during storage or extended periods of non-use, the 6A ODYSSEY charger is excellent for maintaining any ODYSSEY battery indefinitely without harming the battery and to counteract any parasitic loads preventing and reversing sulfation. There is also a link to a list of ODYSSEY approved 12V chargers located on the ODYSSEY website Product Support page for your reference.

The list of approved 12V chargers is provided due to the many chargers that are programmed for the vast majority of batteries on the market that prefer low amp

charging and lower float voltages that do not fully charge or maintain the ODYSSEY battery properly.

The recommended charging current for an ODYSSEY battery is 40% of the 10 hour amp hour rating of the battery (about 45A for a PC2250) for cyclic applications, a constant float voltage of 13.5-13.8V and no constant voltages exceeding 15.0V in any kind of de-sulfation/reconditioning/equalize mode. At greater than 15.0V the battery can overcharge, overheat, and/or go into thermal runaway. Maintaining the battery at less than 13.5V will bring the battery down and maintainer it in an undercharged condition causing sulfation and premature failure.

For seasonal applications (non-daily use applications that set unused for 7-14 days in a row consistently) the use of an approved maintainer that meets the charge voltage requirements noted in the last paragraph is highly recommended during the season.

The preferred storage method is to fully charge the battery before storing and disconnect the battery from the application (shelf storage mode). Stored in or out of the application with no loads, the battery would not require charging for up to 2 years at 77 °F or until it reaches 12.0V, whichever comes first. The self discharge rate increases significantly for

temperatures above 25 °C (77 °F) and for every 10 °C (18 °F) temperature increase the storage time to recharge is decreased by half. Charge maintenance is critical to maximizing the life and performance of the battery. Freezing will not harm the battery and self discharge rates reduce significantly at colder temperatures.

It is recommended that the ODYSSEY battery be charged if it is less than 12.65V when put into use per the ODYSSEY Owner's Manual (link provided on website Literature page for your reference). Most standard alternators/stators are not meant to be deep discharge recovery chargers and can damage the alternator/stator as well as not fully charging the battery with limited use. The Cyclic Charge Voltage range printed on the top label of the battery is the recommended voltage at the battery from the applications charging system (alternator or stator). At less than 14.1V the battery may not be getting fully charged for infrequently used applications. You can verify the battery voltage by checking the voltage at the battery at least 8 hours after application use (or off charge) and if the battery voltage is not at least 12.84V then the battery is not considered fully charged. Voltage readings taken right off charge or after use (alternator/stator charging) will be inflated and inaccurate so for a true OCV reading, you should wait at least 8 hours before checking the voltage (OCV) with 24 hours being preferred.

Consistent undercharging or maintaining the battery in an undercharged condition is one of

the primary non-warranty causes of premature failure for the ODYSSEY battery. Proper charge maintenance is critical to maximizing the life and performance of the ODYSSEY battery. With proper charge maintenance, this battery should have a service life 2-3 times longer than the conventional battery based on the same usage. There are performance charts in the Technical Manual linked on the ODYSSEY website Literature page for your reference. The ER40 battery has a RCM rating with a 25 amp load of 87 minutes down to 10.5V.

If the battery is sulfated from consistent undercharging, a manual reconditioning cycle can be performed to de-sulfate the battery. Discharge down to 10.0V with a

light load of 8.2A or less. Then using a 15A or higher charging current and not exceeding a constant voltage greater than 15.0V, recharge the battery. Discontinue charging if the battery begins to hiss, vent, or becomes so hot you cannot maintain physical contact with it. The reconditioning cycle can be performed up to 5 times to maximize the results. If you time each discharge from a full state of charge down to 10.0V improvement and recovery would be indicated by longer discharge times. At less than 80% capacity, it would be recommended that the battery be replaced. So, for example, discharging the battery at the 5 hour discharge rate of 8.2A it should take 5 hours to reach 10.0V. If it takes less than 4 hours then that would be less than 80% capacity.

I hope this helps. Please contact me if you have any questions, concerns, or need further assistance.

Sincerely,

Kathy Mitchell
 ODYSSEY Sales/Support
 Representative
 Phone: 660-429-7551
 Toll Free: 888-422-0317
 Fax: 660-429-1758
 Email: kathy.mitchell@enersys.com
 Web site: www.odysseybattery.com
 Corp site: www.enersys.com

President's Message by Cary Beazley

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Meeting Schedule

21 March 2013	New Zealand Air Adventures – Kathy Reducka and Bruce Wheaton Kathy and Bruce will share some of the stories and pictures.
18 April 2013	To Be Determined
16 May 2013	Subject: Sun'n'Fun review. The speaker or speakers will be named later.
15 June 2013	Subject: Aircraft Glass Panel comparisons - presentations with aircraft on site for a show and tell. Presenters will be named later. Location: Carp Chapter Hangar
19 September 2013	Spl'Oshkosh review Location Change: back to the museum

Upcoming 2013 Chapter Events

1 June	Chapter clean-up and maintenance day at the Carp airport Chapter
15 June	Young Eagles Fly day
1 July	Canada Day at the Canadian Aviation and Space Museum
15 August	Open House Day at the Carp Chapter

EXHAUST – from the Carb Heat Archives



Unfortunately the March issues of Carb Heat for both 1983 and 1993 are missing from our archives. If anyone has copies please let me know and I'll add them to our scanned files.

However, the five photos shown on this page and next, were taken during the building of the Chapter club house and hangar.

Who can you identify? (Photos by Garry Fancy?)

wayner@igs.net.

Wayne Griese



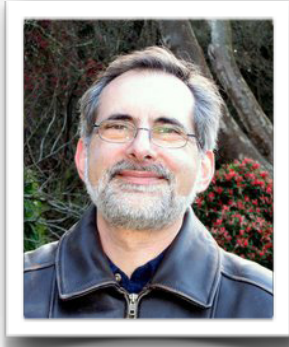
EXHAUST

These photographs and the ones on the preceding page were taken by Garry Fancy during the construction of our Chapter Hangar.



Gadget Corner

by Alfio Ferrara



APRS – Amateur Radio Tracking Device

Last month I discussed our 406 MHz PLB, and how it supplements the airplane’s ELT. In addition to that, we use another gadget (are you really that surprised?) that allows for real-time tracking, as well as historical tracks to be recorded online.

APRS stands for Automatic Packet Reporting System. It is basically a 144 MHz amateur band data transceiver (1200bd) that transmits the location of a vehicle. It was developed by Bob Bruninga (about 20 years ago) with the intent of providing location information to amateur radio operators on the 2 Meter band for voice mobile transceivers. The transmissions were meant to be two-way with locations being exchanged. Today the use has morphed somewhat, and vehicles (car, boats, aircraft) are using it to drop electronic breadcrumbs.

APRS is supported by volunteer hams (that’s what an amateur radio operator is called... I guess there is a joke in there somewhere when a pilot is also a ham) that operate a multitude of ground stations to

monitor and forward this information to distributed servers. Some of these locations can be quite remote, on a mountain-top for instance powered by batteries and either wind or solar. The transmission range is in the order of 100 km when up a couple of thousand feet.

First, you must realize that operating amateur radio equipment requires a license from Industry Canada. A Basic Amateur Radio license requires the successful completion of a written multiple-choice exam. For most people with technical leanings and some basic understanding of electricity may require only a weekend of study. Once you obtain the license, it is good for life. You can then apply for a station license and obtain your very own VAXxxx or VEXxxx call sign.

Operating cost? Zilch, NIL, Zero, Nada (other than equipment purchase, and obtaining the initial Industry Canada amateur radio license).

There are integrated APRS systems that are packaged as a portable handie talkie which you might consider useful on a certified aircraft, however their range will be somewhat limited inside the cabin. They’re a few hundred dollars, though I have not heard reports of them being used inside an aircraft.

<http://www.universal-radio.com/catalog/ht/0008.html>

Being that we have an Amateur Built aircraft, we opted for a cheaper and more permanent solution. Byonics sells different flavours of APRS devices (caters to the hobbyists), however they have a unit that is called the Micro-Trak RTG (Ready to Go).

<http://www.byonics.com/mt-rtg>



The unit connects to power (12V), serial data of a GPS, and an antenna for the 2 Meter band. In our case we used a bent whip located at the bottom of the plane, however a future plan may be to hide it. The unit used to sell for about \$120, however it now costs about \$150 since they have changed the design to include a frequency agile (FA) version. The FA allows use of other frequencies, however unless you are planning to provide your own network of ground stations (all/most APRS ground stations



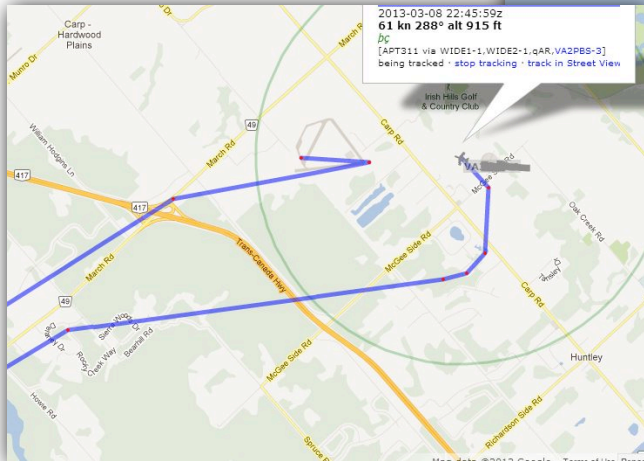
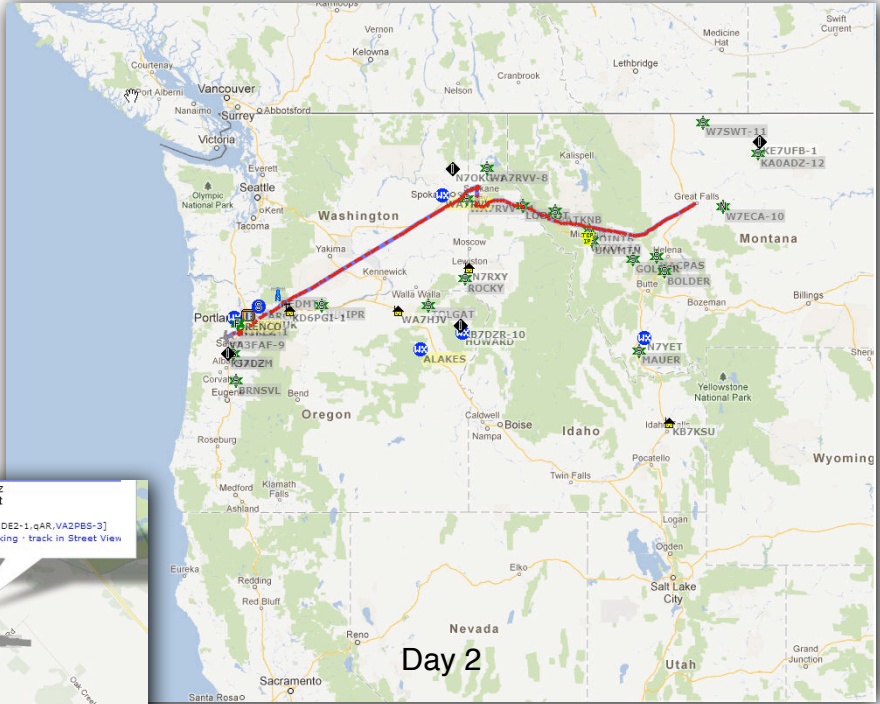
communication on 144.390 MHz) the FA option will not bring much to the table.

You can build your own little bent whip out of piano wire and a coax connector, or buy a ready made one (though not a magnetic mount as offered by Byonics for obvious reasons).

Our setup provides tracking information every 90 seconds. I could set it up for lower except for consideration to other Hams that use the frequency. This compares quite favorably with other systems such as SPOT tracking system which provide track information every 10 minutes. At 150 kts, you will have traveled 2 1/2 nm every minute. Sending track out every 10

altitudes, such as turning final to the airport, you may be too low to be captured by a ground station that is a distance away.

Tracks can be retrieved from sites such as <http://aprs.fi> You can also

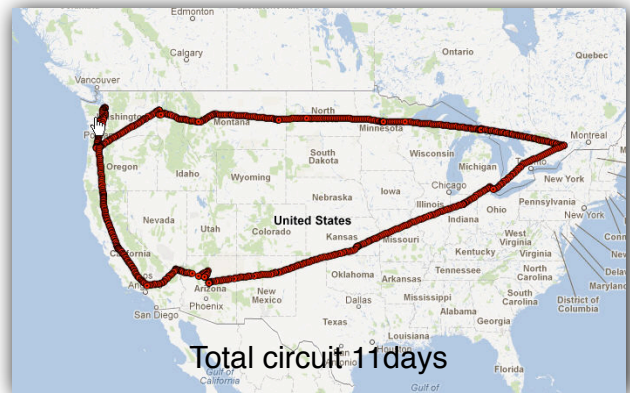


minutes means you would have covered about 25 nm. With the APRS unit transmitting at 90 second interval would equate to just under 4 nm for every electronic breadcrumb.

Coverage? Well quite good actually (see track captures at the end of this article). We have flow across the Rockies with no problems in tracking. Due to the mechanics of the transmission, there can be the occasional missed transmission, and you can see that as a missed breadcrumb track. Also at lower

track others live, such as cars and boats all over the world if you try the above link.

Here are some examples of tracks we've made.



Until next time ...

Alfio

Fly-Out Possibilities

Most Items Taken from the COPA Website

May 25, Westport, ON (CRL2):

Ontario COPA Flight 56 / Rideau Lakes Flying Club Breakfast Fly/Splash-In. Breakfast of ham, eggs and baked beans from 8:00 a.m. until 1:00 p.m. Transport from the Aerodrome/Waterfront/downtown available. Co-ordinates N44 40.012, W076 23.799, using 123.2 for communication. For more information, please contact Bill at greenwj@rideau.net

May 26, Stirling, ON (CPJ5):

COPA Flight 53 Fly- In Breakfast from 9:00 a.m. until 11:00 a.m. For more information, please contact Christine Kilgore at 613-395-1714 or christinekilgore1@gmail.com

June 2, Smiths Falls, ON

(CYSH): COPA Flight 100, Annual Fly-in Breakfast. Fly in, drive in, rain or shine. Co-ordinates for this event are N44 54 03 W77 00 38. For more information, please call 613-283-1148 or visit our website at <http://www.smithsfallsflyingclub.com/>

June 9, Cobden, ON:

COPA Flight 124, Champlain Flying Club host their annual Fly-In Breakfast from 07:00 until 11:00. CPF4 in the Supp. For more information, please contact Larry Buchanan at lbuchan@nrtco.net or 613 638-2792.

June 15, Lindsay, ON (CNF4):

COPA Flight 101. Annual "Kawartha Klassics" Aircraft and Vintage Car Show. Don't miss this incredible opportunity for all Southern Ontario pilots to take in the Annual "Kawartha Klassics" Show at the Kawartha Lakes Municipal Airport. Classic aircraft static displays and hundreds of vintage cars; card lock avgas available and no landing fee. Airport location: 3187 Highway 35. For more information visit the KLMA website at www.klma.ca, Flying Club tab.

June 16, Cornwall, ON

(CYCC): COPA Flight 59, Annual Father's Day Fly-in Breakfast from 8:00am until noon. Best breakfast in Eastern Ontario. Static displays, Vintage Cars. For more information, please contact Barry Franklin E-mail at barry.franklin@sympatico.ca

June 16, Picton, ON (CNT7):

COPA Flight 53 Annual Father's Day Fly-In Breakfast. This year the Prince Edward Flying Club celebrates 60yrs since it's founding in 1953. The airport owners have been very busy restoring many of the original buildings of the British Commonwealth Air Training Plan at Picton. Always a favorite destination for Eastern Ontario pilots, great breakfast and site tours. The most intact B.C.A.T.P. base in Canada. Co-ordinates airport N43 59 21 W77 08 21, Unicom 123.2. For more information, please contact Terry Clifton 613-476-9083 or terry.clifton123@gmail.com

June 29-30, Sherbrooke, QC

(CYSC): Les Faucheurs de Marguerites, COPA Flight 37 is proud to invite all COPA members and the aviation community to its annual fly-in. No air show and no aerobatics! Menu: A lot of aircraft of all kinds, fly market, static displays, workshops, (metal, composite, weight & balance), exciting conferences/seminars, homebuilt/ aircraft restoration contest, commercial exhibit, aircraft manufacturers, aircraft clubs, Saturday night special super followed by a dancing party, restaurant on site. A lot of fun! For more information, please contact Real Paquette 819-878-3998 or lesfaucheurs@hotmail.com or visit our website at www.lesfaucheurs.com

For Sale or Rent

Place your ads by phone with Yvon Mayo 613-830-1935 or e-mail to yvonmayo@rogers.com or eea245@gmail.com. The deadline is two weeks before the next meeting. The ads will run for three months. You may request a two-month extension. Please let me know if any of the articles have been sold.

FOR SALE

RV9/9A project for sale. Tail and wing kit complete with extras. Tail done with MDRA inspection and sign off. Wing kit - right wing to quickbuild stage, left wing still in clecos. All small parts sorted in labeled bins included. All logs, docs and plans included. Pics avail. \$6,000. email holbrog at gmail.com or phone Greg Holbrook at 613-487-2374.

WANTED

A **5x5 tire** in usable condition.
Contact: John Firth
johnfirth0@gmail.com

FOR SALE

The Canuck Group at EAA 245 in Carp has **shares in the 1946 Fleet Canuck CF-DPZ** for sale. The aircraft has 1250 hrs TTSN engine and airframe since being built in 1946 and has always been hangered. Price, \$ 6,800 per 1/5th share. Own a Canadian classic. Please call Ken Potter at 613 259-3242 or email at:
kjpotter@sympatico.ca

FOR SALE

Bilmar 2003 **Amphib floats** 1850 kevlar, fiberglass composite with rigging, electric hydraulic, hatches, rigging, dual water rudders, emergency back up pump.
Must sell, Contact Paul Sicard
Tel: 613-487-2614
Cell: 613-884-9575
lise.sicard@xplornet.com

FOR RENT

Chapter 245 members can **rent a tiedown** near the EAA 245 hangar at Carp Airport. You can rent the tiedowns by the month or for the full year. Call Curtis Hillier 613 831-6352

FOR SALE

1986 Rutan LONG EZ FOR SALE: \$36,000
470 Hrs airframe. Engine: Lycoming 0-235 L2C
2430 hrs TT.(with original logs). 5.0 hrs since Top overhaul & other new parts: Impulse Mag , Vacuum pump, Starter & alternator. Avionics: Xpndr Collins TDR-950, Garmin 296 GPS, Kannad 406-AF ELT, ICOM A5 Radio, Flightcom 403mc Intercom.
Hangered at CYRP. Extra prop (Silver Bullet).
Andrew 613-836-3968, cell 613-295 7451
andrewr@magma.ca Currently in flying condition.
Last annual Nov 2011. For specs see http://en.wikipedia.org/wiki/Rutan_Long-EZ

Experimental Aircraft Association Chapter 245 Ottawa. We are a group of Amateur Aircraft Builders, Owners, and Enthusiasts with a hangar, lounge and workshop facility located@the Carp Airport, just west of Ottawa.

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EAA 245 Website:	http://eaa245.org/	and	http://www.245.eaachapter.org/



Experimental Aircraft Association Chapter 245

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

Membership Application

New: ___ Renewal: ___
Date: _____

Name: _____

Address: _____

City/Town: _____

Prov: _____ PC: _____

Phone: (____) _____ - _____ H(____) _____ - _____ W

Email: _____

Newsletter Distribution Preference:

Email ___ or Canada Post ___

Aircraft & Registration: _____

Aviation Affiliations:

EAA Number _____ EXP Date: ___ / ___ / ___

COPA: _____ RAA: _____ UPAC: _____

OTHER: _____

Annual Dues: January 1st to December 31st.
(prorated after March 31st for new members / subscribers).

Newsletter Subscriber: ___ \$35.00
Newsletter only

Associate Member: ___ \$35.00*
Newsletter plus Chapter facilities

Full Member: ___ \$70.00*
Newsletter, hangar, workshop, tiedowns.
(Note: there is a one time \$200 initiation fee when you become a Full Member)

*Note Associate and full members must also be members of EAA's parent body in Oshkosh WI, USA