

# Carb Heat

November 2013

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

Presentation:

Alaska Highway Air Tour Terry Peters

## **Editor's Comments**



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

Jeff Whaley recounts a good day of flying.

Alfio Ferrara continues his Gadget Corner, with a detailed article on his visit to Sensenich, the propeller manufacturer.

The Summer flying season is now over and the only fly-in listed is in February. And check the For Sale section where there are great opportunities listed.

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

Yvon Mayo

## President's Message by Cary Beazley



I am writing this on the eve of our Veterans Remembrance Day.

With the reflections of each passing year, I'm more thankful to everyone who sacrificed so much for our current way of life and sometimes disgusted at how we seem to neglect our vets as a society.

My grandfathers served here and overseas, but did not really want to talk about it. Regretfully, I've found the same with many veterans, including some of our current and former EAA chapter members. Lots of great stories, some they could tell us and some that were even true;)

As a mostly civvy - If I haven't actually said it to you in person, Thank you!

Hug a vet

## November Meeting - Oshkosh Review

I want to thank **Dalton Campbell**, **Mike Asselin** and **Bill Reed** for the Oshkosh review.

I never did connect Dalton and Mike at Osh, oh well, next Osh I guess.

I have to apologize again for the

continuing Bush Theater Audio-Visual difficulties.

Thanks again guys.

## **October Elections**

We had a number of changes in the executive this year with some new blood.

This year:

Phil Johnson agreed to stand for Vice-President position.
Curtis Hiller agreed to stand for Treasurer for another term.
Alfio Ferrera agreed to stand as the Young Eagles Coordinator.
Yvon Mayo agreed to continue as Newsletter editor for another term.

Martin Poettcker rejoined the executive officially again as the new Secretary. He also retains the airport liaison position.

All were re-elected by acclamation.

Gord Haynes was elected as the new Membership officer.
Vic Thompson is the new Technical Information Officer.
Ken Potter is continuing in the Operations position.

Wayne Griese is our chapter historian.

On behalf of EAA Chapter 245, I would like to thank the executives for all the work they have done in their terms of service and welcome the new executives.

I want to thank **Lars Eif** for his smooth officiating of the elections again this year.

If anyone else is interested in joining, please feel free to contact

After all, the club is what we make it.

## Canadian Aviation and Space Museum Parking \$3

The CASM is going to continue to charging for after hours pay and display parking.

## **Dinner Before Meeting**

As usual, a number of Chapter members get together for dinner at Perkins, corner of Ogilvie and St Laurent at 5:30PM. Everyone is welcome.

See you up there!

Cary

## November 2013

Meeting Schedule		
21 Nov 2013	Alaska Highway Air Tour - Various Speakers; - Terry Peters	
December 2013	No December Meeting	
16 Jan 2014	Lessons Learned from Buying a Homebuilt Project; - Mark Briggs	
20 Feb 2014	TBD	

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.

President:	Cary Beazley	613-226-4028	cbeazley@innovista.net
Vice President:	Phillip Johnson	613-253-2229	vice.president@eaa245.org
Treasurer:	Curtis Hillier	613-831-6352	echillier@yahoo.ca
Secretary:	Martin Poettcker	613-832-1210	Martin.Poettcker@marpoe.ca
Operations:	Ken Potter	613-259-3242	kjpotter@sympatico.ca
Membership Coordinator:	Gordon Hanes	613 565 0521	membership@eaa245.org
Webmaster:	Russell Holmes	613-226-8273	billy.bishop@sympatico.ca
Newsletter Editor:	Yvon Mayo	613-830-1935	eaa245@gmail.com or yvonmayo@rogers.com
Technical Information Officer:	Victor J. Thompson	613-269-7952	victorthompson14@gmail.com
Young Eagles Coordinator:	Alfio Ferrara	613-836-8285	longeron@gmail.com
Chapter Historian:	Wayne Griese	613-256-5439	wayner@igs.net
Carp Airport Liaison:	Martin Poettcker	613-832-1210	Martin.Poettcker@marpoe.ca
Hangar Group Liaison:	Bill Reed	613-831-8762	Bill@ncf.ca
EAA 245 Website:	http://eaa245.org/	and	http://www.245.eaachapter.org/

## The Annual Venison Run by Jeff Whaley

The annual venison run is a trip made every year because I hunt near North Bay with a gang from Palmerston Ontario. They run the camp and get the meat cut up, so I have to go and get it. It is either a 6 hour drive (one way) or 6 hours of flying (round trip) from the Ottawa area to southwestern Ontario and back again. Due to travelling time and Toronto stuck in the middle, this trip is always a good reason to pull the "Hound Dog" out of the kennel.

Most years the trip occurs in April after waiting out the winter. This year, the amount of venison wasn't really worth going to get, that combined with last summer's incident still in mind I kept putting it off. If that wasn't enough delay, the annual inspection added another six weeks of down time for the airplane. CF-HDC, "Hound Dog Charlie" (PA-22-135x) is the first official owner-maintenance registered aircraft in Canada. Having done all the maintenance for 10 years, I decided to get a second opinion and hired someone else to do the annual inspection for 2012 and 2013. It has been expensive, averaging \$2200 per year but with parts being replaced and improvements made, for now the extra peace of mind is worth it.

The last week of September was solid sunshine, low humidity, gorgeous fall weather. I couldn't put this trip off any longer. I needed the flying time and so did the airplane; 29-September 2013 would be the day. My wife wanted to go as well so the trip would require a pit stop in Peterborough

on both legs. Quebec FSS said to expect turbulence with winds 15 gusting to 25 kts at 3000 ft, somewhat less at 6000 ft; an issue would be early morning fog presently over Peterborough and a NOTAM active for taxiway closures. I told him my airspeed was 90 knots and assured there would be no fog by the time we got to CYPQ. I got a transponder code, was told the minimum altitude for

flight plan. CYRP to CYPQ is 138 SM direct or 1.7 hours at 80 mph; CYPQ to CPR3 (Palmerston) is another 124 SM and 1.5 hours, combined with a 30 minute pit stop, we filed 3.7 hours for the outbound leg.

Departed Carp with full tanks at just after 9am, right on schedule and started climbing with the target cruise altitude of 4500 ft.



flight following would be 3000 ft and the contact frequency for Toronto Center to reactivate on the second leg.

Westbound I always conservatively flight plan for 80 mph ground speed and eastbound for 100 mph; the airplane usually does a bit better than that but these speeds provide a fudge-factor for slight delays and extra time to close the

Contacted Ottawa Terminal with my intentions and squawk code only to be told: "Hotel Delta Charlie, we are not getting anything from your transponder; do you see any blinking lights on your unit" ... "uuuh negative - HDC" was my response ... "please remain below 2500 until we can confirm your transponder operational and without it flight following is not available". "HDC level at 2400

westbound out of Carp, enroute Peterborough". The transponder always worked before - did the mechanics disconnect the antenna when removing the gear legs for a bungee-set replacement?

At this point we were making about 68 knots ground speed, no transponder, no flight following; the day was not starting out as hoped. Truth be told, I had never used flight following before but I wanted it on this trip and almost turned around, which is something else I've never done before either. "Ursula, as soon as we cross the river at Almonte we're going to 4500; we should be outside the TCA at that point". Glancing at the transponder I finally noticed the problem – it had been switched OFF: damn mechanics!! Unfortunately after turning it back on it still was not reporting any interrogations, so I turned it off fearing damage to the unit if indeed the antenna was disconnected. We climbed to 4500 and leveled off indicating a whopping 72 knots ground speed – this is going to be a long day.

West of Perth. all the way to Peterborough is nothing but rocks and trees, interrupted by lakes and a small swath of hwy 7 meandering through it all. 99% of my cross countries have been direct; with a slow airplane it's the only way to make any time. I've been over Algonquin Park many times and crossed Lake Michigan eastbound a few times - "today, let's just follow the highway". Pointing the nose southwest we dropped to 60 knots ground speed, with the struts as a gauge we were outrunning the cars, just barely. Finally as #7 swung more westerly we picked up some ground speed, 75 knots and then 80 knots, which was the best we saw outbound. About 30 miles east

of YPQ I tried the transponder again; "hey it's working, we're getting interrogation reports from the LED". With the headwinds and deviated route it took 1.9 hours instead of 1.7 to reach our first destination.

A quick fuel turn-around and pit stop put us back on schedule for the second leg. Climbing out of YPQ west bound I contacted Toronto Center and they reported: "HDC, we have you on radar but are not getting any altitude indication – please confirm Mode C activated". "TC, yes Mode C enabled and we are seeing interrogation reports". "HDC we see your altitude now please confirm 3500". "TC, HDC is at 3500 climbing 4500 westbound, YPQ to PR3". At 4500 we returned to 80 knots ground speed, Mode C was working and TC had their eyes on us - I like it.

If there is one place in Ontario for flight following it is that tight VFR corridor just south of Lake Simcoe. I have had 2 near misses over the years between Lakes Scugog and Simcoe. One trip returning from Oshkosh with my father, a 172 literally dropped out of the sky in front of us within 200 yards; spin practice I guess. Two years ago, eastbound from Wingham at 3500, I saw a Cherokee at my 10 o'clock headed SW: I could tell we would miss; at last glance his head was down that's how close we were. Approaching Scugog: "HDC, you have traffic 12 o'clock at 3 miles, 4000 circling, appears to be doing air-work". "TC, we check that, have traffic visual". "Ursula, I'll keep my eyes on that guy, you keep scanning for other traffic". We were contacted at least 2 more times regarding the training aircraft until we finally reported clear to the West.

Due north of Toronto: "HDC. please descend to 3500, to stay clear of inbound scheduled traffic". Descend; we just got to 4500, now you want us to give up altitude? Reluctantly: "TC, HDC descending to 3500, will report when level". We got handed off to another controller on another frequency and held 3500 for the rest of the journey. Thirty miles short of PR3 we lost radar coverage and flight following was cancelled. Arriving at our destination it took a moment to spot the grass runways; once confirmed we deviated south to make the pre-arranged buzz of my buddy's farm house to arrange for ground transportation. On the ground at 12:45pm we closed the flight plan on-schedule and piled into the vehicle, off to the truck stop for lunch. We had a good lunch and visit, recounting past events and looking forward to the upcoming season. Before departure, we topped up the right tank with \$30, of 90 octane, unleaded, ethanol-free mogas for the expected 1.2 hour flight back to Peterborough.

Reaching 3500 I radioed Toronto Center on the same two frequencies as before but to my surprise no acknowledgement. Scanning the transponder showed no sign of contact either – "I guess it's just the two of us on this leg". I tried TC a couple more times without success so switched to 126.7 MHz and made a few broadcast traffic advisory/positon reports. As expected our ground speed was much better 102 - 107 knots. Never saw another airplane all the way back to YPQ but did see the usual sights: the wind farm at Shelbourne, Lake Simcoe, Toronto skyline (CN Tower). Lake Scugog and highways 400 and 407. The same fuel guy topped up my right tank again for the last leg back to

Carp. We talked about all the construction and expansion taking place on the airport; he said that Seneca College was moving their flight training facilities to YPQ and had requested up to 15 fill-ups three times per day once they are established. Looks like Peterborough is going to be a busy place this time next year – Hello Lindsay!!

The last leg to Carp was uneventful, loosely following highway #7 again until near Perth.

The transponder was getting lots of activity so I radioed Ottawa
Terminal with altitude and intentions. They assigned a new transponder code, identified us with altitude and cleared us through to Carp. We touched down at 6:15pm with exactly 6 hours of air time to end the day and cap off a great weekend. The winds aloft certainly affected our ground speed but the turbulence never materialized; it was smooth air and pretty good visibility all day.

I must say, those \$100/lb pepperettes and summer sausage are mighty tasty.

Jeff Whaley EAA 313043

## Fly-Out Possibilities

All Items Taken from the COPA Website

## February 22, Ottawa River,

**ON**: Mo's 25th Fly-In 2014. COPA Flight 169 will start at 10:00 a.m. Located on the QC side 1 Mile west of the Ottawa VOR. Coordinates 45°26'57" N, 75°55'48, runway 3500' x IOO', 34-16. Ground frequency 122.75MHz and air 123.20MHz. Ski landing recommended. Weather permitting, a runway will be ploughed, landing is at your own risk. For more information, please contact Maurice Pru-Homme at 819-682-5273. Download poster click here.

# Gadget Corner article and photos by Alfio Ferrara



## Sensenich Propeller Manufacturing Company

This month's gadget is a large piece of aluminum that converts engine noise into forward motion.

Shirley and I had planned another of our vacation/trips with the RV-9A in September, and spent 11 days with stops in Nashville, Memphis, New Orleans, Spruce Creek (Florida), Kitty Hawk, Tangier Island, and finally Lancaster PA.

When we arrived in Lancaster, we called Sensenich (http://www.sensenich.com/) for an opportunity to visit their factory. The workers start very early in the



Figure 1 - Sensenich Propeller Manufacturing Company in Lititz PA

morning, and the place therefore shuts down mid-afternoon. We were offered a personalized tour for the next morning and jumped at the opportunity.

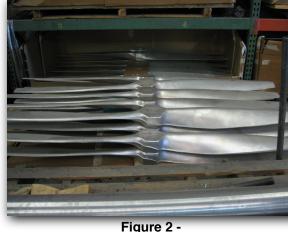
Sensenich is situated in Lititz, a little township adjacent to the airport. There is also the Sensenich Propeller Service company (located at the Lancaster airport), which is now an entirely different entity altogether. A few years back the Sensenich Company was acquired by new investors, which split the

company off, selling portions of it.

For a company that is so well known in the general aviation community, the locale is decidedly smaller than we expected.

Sensenich in Lititz only deals with aluminum propellers, while the Florida operation handles the wood and carbon fiber models. We thought we would give you an inside look of how this important elements of our airplane is manufactured. Consider this an EAA245 attempt for a "How it is Made" presentation.

The propeller blanks are forged by Alcoa using 2025 Aluminum with a T6 temper. The forging process produces a longitudinal grain. They certainly already have the shape of a propeller. The reason for the 2025 aluminum is for its greater flexibility and corrosion resistance over the 2024 variant.



Propeller blanks as received from Alcoa



Figure 3 - Alcoa 2025 T6 forged propeller blanks



A worker skilled enough to produce his own work (solo) requires about 18 months to 2 years of apprenticeship.

After two to four hours at the first manual blade shaping station, the propeller moves to another room with another skilled worker. This time, the blade is being polished with a finer drum sander (Figures 9 and 10). This process again takes another couple of hours, which also includes multiple measurements and balance check of the propeller.

Figure 4 - Hub face milling

After incoming inspection, the propeller 'blank' is inserted in a numerically controlled (NC) milling machine, and the two hub faces are machined perfectly flat and parallel to each other. The lathe can accept two propellers but only one face is machined at a time. The bolt holes are also drilled in this process. The propellers will then need to be turned by an



Figure 5 – NC Milled propeller blade, ready for manual smoothing

operator to machine the other face (as seen above).

Once the hubs are milled, the propellers are carried to another NC milling machine which mills each blade to the correct (over) thickness and angle. Only one blade and one side can be machined at a time, so the propeller must be repositioned 3 more times before the 2nd milling process is complete. At this point the propeller has a rough shape and there are cut marks visible on the surface of the blade (see Figure 5).

Until now, most of the blade work is semi automated with the milling machines doing most of the work, and the operator repositioning the propeller blanks in the machine. The next step is to manually smooth out the milling cut marks, and further shape the blade according to specifications. This includes blade angle, thickness and weight distribution. Every so often, the blade is checked for parameters, as well as balance. This type of work is very noisy and dusty.



Figure 6 – Skilled worker using a sanding disk to shape the blade



Figure 7 – Checking blade thickness



Figure 8 – Propellers between shaping and polishing operations

Now we are done with the propeller shaping, and after another inspection process, the propeller is inserted into a custom hydraulic bending machine.



Figure 10 – Final polishing wheel



Figure 9 - Fine sanding/polishing of the blades.

Most propeller rework companies will use crude steel bending bars for leverage and manually twist the blades (along with the appropriate expletives) to finalize the propeller pitch. In this case, Sensenich proudly uses a custom hydraulic bending setup that greatly eases the process. The machine can be repositioned to bend the propeller at its different blade stations.

As in the previous blade shaping operations, the blade parameters are measured multiple times.

Again, this process requires a highly skilled operator, since the bending and measuring process is highly iterative, and there is a spring memory to contend with as well.



Figure 11 – Hydraulic blade bending machine – positioning the bender at the appropriate bending stations

After another blade inspection, the blades are sent to a metal prep area (etch, alodine etc), and then to the paint shop. The blades are placed on a propeller 'tree' and carefully painted with an even coat of epoxy paint. The blade balance is measured between coats of paint until the appropriate balance is attained by appropriate paint application.



Figure 13 – Paint booth and propeller holding tree.

The propellers are finally ready to be packed and delivered. As you can see, quite a lot of work is required to turn a chunk of aluminum into a propeller.

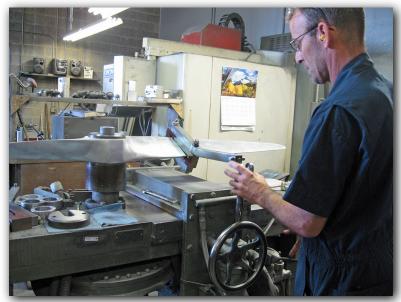


Figure 12 - Bending the blade

Sensenich also offers overhaul services, where the paint is removed, fault inspected, hub area refaced, and all the process we described above is performed. The original propeller is manufactured with plus tolerances to allow for several overhauls, assuming the damage is fairly minor. Once the tolerances are used up, the propeller becomes a paper-weight.

Sensenich also has a research and development effort. This includes design, and harmonic testing of the blade/engine combination.

So the next time you go up for a flight, take a second look at that chunk of aluminum (wood or fiberglass/carbon) at the front (back) of your machine, and think of the care and effort that went into its design and fabrication.

Until next time, I wish you all great flying weather.

Alfio



Figure 14 – Final product ready for packing and shipping.



Figure 15 – Propeller overhaul - propeller blades with paint removed, and inspected.

## EXHAUST – from the Carb Heat Archives



35 YEARS AGO November 1978

Dues were discussed at the November 17, 1978 meeting. An increase, it was felt, was in order, especially since the Chapter dues remained at \$5.00 for more than 10 years. Father John MacGillivray moved that dues be increased to \$10.00 annually, effective January 1, 1979. George Reid seconded the motion. Frank Cianfaglione proposed that Father John be made an honorary life member of Chapter 245. It was so moved by Bill Peppler and seconded by Ted Slack. Father John expressed his thanks. He said he had enjoyed his long association with us and would carry many fond memories to his new home in Nova Scotia. Ted pointed out that Father John was our second honorary life member, the first being E.W. Marshall of aviation fame

Later in the newsletter it was questioned by the secretary – "Who is or was E.W. Marshall?" His name did not appear on any membership list going back to 1974 according to secretary Jim Butler,

and he asked any old timers out there to let us know a bit about the history of Mr. Marshall.

Was this mystery solved? Enquiring minds would like to know. Who was our first honorary member?

Wayne.

20 YEARS AGO, October 1993

Subaru car engine conversions for aircraft use were of interest in the 1990's. Scheduled speaker for November, 1993, was Phil Johnson with a presentation on the Subaru SVX auto engine and its installation in his Cozy 4 place. The SVX is a horizontally opposed 6 cylinder engine and rated at 230 HP. There was another Subaru conversion underway by home builder Nigel Field. His choice was the Subaru EA81 of 115 HP to replace his Lycoming O235-C3C. Nigel was also intending to use a larger Subaru Legacy 2.2 litre engine capable of 130 to 180 HP in a Cozy 2 Place.

In his newsletter writings, President Gary Palmer confessed he was personally interested in that engine as an eventual upgrade for his Lancair. Sunday, November 7, 1993, almost a year to the day of the Chapter's first stint in front of the TV cameras, found several members enjoying another successful encounter of the video kind, generating positive publicity for not only our chapter, and the Carp airport, but also the Young Eagles program. This time it was for "Community Magazine", a presentation by Arnprior based MacLean Hunter cable TV

wayner@igs.net.

Wayne Griese

## For Sale or Rent

Place your ads by phone with Yvon Mayo 613-830-1935 or e-mail to <u>yvonmayo@rogers.com</u> or <u>eaa245@gmail.com</u> 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.

#### **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 hangared. 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

#### Wanted

I will be starting to do fabric covering soon on Supper Pelican and Fisher 101, finally....mostly elevator and aileron parts.

If anyone has surpluses/leftovers fabric (Dacron or Stits in the 1.7 oz, 1,8 oz to 2.1 oz area for ultralights) I could be interested in buying.

These parts are long but not wide and can be made in two pieces (top & bottom). So these parts are ideal for leftovers.

Elevator parts are about 95 inches long by 14 & 19 inches wide. Ailerons are about 110 inches long by 12 inches wide.

Thank you,

Michel Tondreau

Tel: 819-685-2194

#### **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 <u>lise.sicard@xplornet.com</u>

#### **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. Hangared 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 <a href="http://en.wikipedia.org/wiki/Rutan\_Long-EZ">http://en.wikipedia.org/wiki/Rutan\_Long-EZ</a>

### **FOR SALE**

Mc Caulley Prop Klip-tip Met-l prop

Lm 7249 ser 28108 Spacer 2141A C1210 with bolts; never overhauled, checked by BL aviation. Prop in very good shape \$1,500.00

contact Bernie 613-293-6527 also 1 set tires 800. 6 brand new valued \$470.00 plus tx. asking \$400.00 plus a set of 6.00 x 6 check in for price.

#### **Hangar for Rent**

On the North Field, Hangar T1, No. 1 is available for rent immediately. October 2013 to May 2013, Additional months negotiable.

\$300/month (includes winter snow removal right to the hangar door)

Contact Matt by text or call cell phone at 613-851-2300

(Contnued on the next page)

## **FOR SALE**

G meter +6 to -2 g

Quartz clck with timer function

Facet electric fuel pump 50l/hr 12v prices negotiable

Glass cloth, medium weight, close weave about 1.2 x 0.5 m FREE

Contact John Firth johnfirth0@gmail.com

EAN
ОПАЖА 245

## Experimental Aircraft Association Chapter 245

Membership Application

OHAWA 240	New: Renewal: Date:
Name:	
Address:	
City/Town:	
	PC:
	H()W
Email:	
Newsletter Distribution	
Email or Canad	a Post
Aircraft & Registratio	n:
Aviation Affiliations:	
EAA Number	EXP Date://
COPA: RAA	: UPAC:
OTHER:	

Make cheque payable to:

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

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

\*\*Credit Card payment available, Contact Mambership Coordinator for details.