



NEWSLETTER

Carb Heat

Hot Air and Flying Rumours

Vol 29 No. 5

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Next Meeting:

Thursday May 20, 1999 8:00 PM
National Aviation Museum

Presentation by our very own Technical Advisor:

Robert Erdos

who will discuss flight test considerations

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The weather gods have been good to us recently, balancing out the cruel jokes of March. The field is now in excellent shape, and the flying season has started anew.

Fly-in breakfasts are right around the corner, so check your COPA listings to make sure you don't miss out on any of the fun.

First Flight Recognition

Our next meeting we will be presenting **Roly Acorn** with a plaque in recognition of the triumphant first flight of his Murphy Rebel last November 21st.

I hope you will be able to join us in congratulating Roly on his achievement.

Clubhouse Cleanup May 29th

A reminder that we will gather on Saturday May 29th at 9:00 AM for our annual spring cleaning of the clubhouse and hanger. Normally we are finished by noon.

406 MHz ELTs

A recent COPA newsletter article notes that the FAA has decided not to make 406 MHz ELTs mandatory for the U.S. general aviation fleet. Apparently they recognize that better alternatives are on the horizon as I had noted a couple of months ago. I expect that we can safely plan on continued use of our existing ELTs for several years now. Hopefully, the next proposal will be a real giant leap forward, not a small step!

Stan Ironstone's Glasair III

If you haven't been to Smiths Falls airport recently, you may not be aware of how close Stan Ironstone is to a first flight. He is definitely on the last mile with all of the systems installed and tested. The seemingly

miles of wiring has passed the smoke test, and only one small bug remains.

Countless hours of sanding are leading up to the first coat of primer in the near future. Stan is working on final fitting of the very thick 1/2" windscreens, designed it seems for a direct hit by a Canada Goose at 300 knots.

It sure was good to see his bird sitting on the gear outside the hanger. It is one mean machine designed for speed.

While Stan won't offer a first flight date, I am sure it will be later this year. I look forward to another plaque presentation next year.

Bob Crook's Hatz Biplane

Right next door to Stan's hanger is Bob Crook's beautiful Hatz biplane. Bob is nearly finished with the systems installation which will leave the covering and finishing stages before his gorgeous project takes to the air. I expect to see it in the air early next year. Bob is doing beautiful work, as is Stan; two first class projects all the way!

Where to next?

Rem Walker of EAA Canadian Council recently sent a draft discussion paper from **Herb Cunningham**. He is soliciting input on the ideas put forward by Herb. I will bring a few copies to the next meeting for those interested in making their thoughts known.

In essence, Herb notes that the Canadian general aviation fleet continues to dwindle, particularly as more and more Canadian aircraft are sold south of the border due to our weak dollar. Cessna isn't getting too many Canadian takers on new C-172s at \$200K plus.

The core of Herb's proposal seems to be elimination of the 51% rule on homebuilts since they are the primary ongoing lifeblood of general aviation in Canada.

He also proposes including advanced ultralights in the homebuilt category.

Finally, he suggests the name Custombuilt, rather than amateurbuilt, or experimental as conveying both a better, and more accurate picture to the general public.

April Meeting

Our planned speaker had to cancel unexpectedly, and we were lucky to come by an interesting video on the recovery of a Halifax bomber from a Norwegian fjord. Many of you may have seen some of this on the Discovery channel, but we had the unabridged version which provided much greater depth, and insight into both the project and the unique people involved in the recovery effort. The Halifax now rests in a hanger at Trenton undergoing the long painstaking process of rebuilding to display status.

Thursday May. 20th Meeting

Our next meeting at the National Aviation Museum will feature a discussion of flight test considerations from our own **Technical Advisor, Robert Erdos**. Don't miss this opportunity to benefit from an NRC test pilot's perspective on how to approach the test flight period professionally.

I look forward to seeing you there.

Gary

**A COMPARISON OF THE
CESSNA 172
AND THE
PIPER PA28-140
by Garry Fancy**

Several years ago, before buying my Piper Cherokee, I did a performance comparison of that aircraft with the most popular four-seat light aircraft on the market, the Cessna 172. In any such comparison there is the straight performance data or numbers and then there is the less obvious comparisons: how does the aircraft feel when flying, how does it look, what is maintenance like? Since that time, I now have a few hundred hours in my Cherokee and a few hours in the Cessna 172. I retained the data comparison and thought it might be of interest to others.

First, the things that are not evident in the data comparisons:

EASE OF ENTRY/EXIT

Here the 172 is the obvious winner, with all models having a door on either side, the Pa28-140 (in common with all similar Piper products has only one door). On the Piper, one must also step up on the lower wing before entering which may be an additional hardship to those with worn knee joints.

CABIN ERGONOMICS

Sitting in the C-172, gives the feeling of sitting in a living room chair, very upright, probably due to the available floor to roof headroom. The Cherokee with a little less headroom, has more of the feel of sitting in a sports car, and this I prefer. The Cessna has more cabin length (see interior dimensions) and can obviously carry more bulk. I find the Cherokee very hot inside on a hot summers day, inspite of cooling air. The 172 is probably a bit more comfortable in this regard.

HANDLING CHARACTERISTICS/PERFORMANCE

Comprehensive comments in this area are best left to a professional test pilot and I will say little, except that the Cherokee is easy to get used to, the controls light and responsive, landings are a none-event, even in a cross-wind. My limited experience in the 172 shows very similar characteristics, perhaps the controls are not quit as light or responsive. The Cherokee has a big "Johnson Bar" flap lever, simple and on right NOW, whereas the 172 has electric flaps, which are not as quick nor as simple.

Both aircraft have the same engine, so all other things being equal, fuel consumption should be identical. However Cessna credits the 172 at 75% power with a fuel consumption of 8.1 usgph whereas Piper at the same power setting gives the Cherokee at 8.4 usgph; perhaps this is due to the different propeller.

A quick look at the performance data will show that the 172 has slightly better take-off performance. The Cherokee has the laminar flow wing, which reduces drag and thus increases range at the expense of some other properties, one being the "drag bucket" associated with the laminar-flow airfoil at certain angles of attack.

An interesting feature of the Cherokee is the fact that although the aircraft has been spun thousands of times, there have been a few reported cases of the aircraft spinning right in with experienced instructors on board, and no satisfactory explanation; thus, inter alia, Piper Service Difficulty Alert 98-01:Pa28-140 (Spin Recovery Procedures). In fairness, the safe recovery from spins within the allowable C.ofG. ranges would have been demonstrated during certification.

There is another interesting performance figure on the Pa-28-140 that bears noting. Looking at the allowable C.ofG. range in the utility category, it is an unbelievable 0.7" (compare this with the 10" in the same configuration for the 172. In fact, the C.ofG. range in all configurations is about twelve inches greater for the latter.

When it comes to range, the Cherokee, mainly due to its generous fuel supply, has a decided edge on the 172. The two Cherokee fuel tanks each hold 25 U.S. gallons with a convenient built-in tab marker at the 18 U.S.gallon level, the maximum fuel load with four adult passengers

HIGH WING VERSUS LOW WING

There are pros and cons with the two wing locations: the high wing enables an unrestricted view of the ground, which in part, is what flying is all about, it allows for a simple gravity fuel system, the high wing can be easily removed for ground transportation, or when painting or repairing. The low wing restricts somewhat ground observation whilst flying, and also must have two fuel pumps, (one engine-driven and one electric), It is far more difficult to remove and install the Cherokee wings. On the other hand, the low wing fuel tanks are easier to refill, while the high wing requires a ladder, and the low-wing provides superior upwards inflight visibility. It is easier to clean a frost or snow covered low-wing than it is a high wing and as a comfort factor, the fuel filler caps can always be checked in flight to make sure they are tight, something rather more difficult in a high wing model!. On a hot summers days one can stand under a high wing aeroplane, but I have not seen too many people standing under a low wing in the heat of an Oshkosh summer!

High wing aircraft are inherently a little more stable in hot, turbulent air, all things (particularly wing loading) being equal. In spite of the Cherokees noticeable dihedral, hot summer days require hands-on flying both on flight controls and throttle.

STRUCTURAL MANUFACTURING/DESIGN CONSIDERATIONS

I have always felt there was a good reason for the higher price of the 172 series and a closer structural/design comparison of the two proves why this is so. The 172 skin is often gracefully designed in trailing curves to distribute the loads along the adjoining skins, whereas the Piper products employ the simpler and much less labour-intensive straight cut.

The 172 has a double lower skin in the cabin area (i.e. the floor plus the lower fuselage outer skin; the Piper employs the lower skin as the cabin floor, with four beefy underfuselage stringers (very handy in the event of a wheels-up landing with the retractable-gear models).

The 172 has at least a half dozen inspection panels under each wing (this allows examination of the internal wing structure to check such things such as corrosion and control cables along their entire length); again Piper has taken the cheaper route by only incorporating one inspection panel per wing.

The upper and lower control surface skins on the 172 are constructed from two different corrugated pieces of sheet aluminum, rivetted together. In the event of repair, these can be replaced (Wag-Aero sells the blank corrugated skins). The Pa28-140 control surface skins are bent through something less than 108 degrees at their trailing edge and then assembled. While this is initially cheaper to manufacture, replacement/repair is much more expensive on the Piper. Further, the control surface skins on the Pa28-140 are very thin - .015 inches. This can be pushed in very easily by a careless bystander. (When building my various aeroplanes, the thinnest aluminum ever called for was about .019 inches thick just for the leading edges of the wings, a nonstructural application!) The Cessnas I have examined employ .020 inch thick control surface skins. In spite of the thicker Cessna control surface skins, they all seem to suffer from air loads deformation eventually, whereas the Cherokees retain their original profile.

The Cherokee models employ an all-flying tail or stabilator as opposed to the C-172 conventional design. The former design saves weight and is used on most fighter and large commercial aircraft, however, I still feel more comfortable with the conventional tail. I had reason to remove the Cherokee stabilator, and since there was a little play in the bearings I was about to replace them when, for some reason, I checked the two main 1/4" stabilator pivot/mounting bolts. Imagine my shock when I discovered that during a previous stabilator removal, someone had replaced the close-tolerance HIGH-SHEAR NAS1107 bolts and corresponding nuts with ordinary (lower strength) AN-4 bolts and fibre-insert nuts!

In fairness, having made these negative comparisons of the Pa28-140, every AME that I have talked to has high praise for the structural integrity and basic strength of the aircraft.

LANDING GEAR

Both aircraft employ the tricycle configuration, but here the similarity ends. All three Cherokee landing gear legs are oleopneumatic which means that they are susceptible to leaking both hydraulic fluid and nitrogen and the nitrogen refill must be over 200 psi to recharge the chambers satisfactorily; the two main landing gear legs on the 172 are of spring steel; not much to go wrong (other than a complete fracture!), and the nose gear is at a much lower pressure than the Cherokee.

The 172 can be put on skis and when suitably (and expensively) modified, makes a tolerable private floatplane; however the Cherokee has never been STC'd for either, and in any event would make a poor float plane due to the low-wing configuration.

ENGINE ACCESS

Here the Cherokee makes up for some of its shortcomings. It has the two familiar Piper barn door engine access panels and I like being able to count all cylinders to make sure I haven't lost one somewhere along the way. The Cessna has a small access door basically to check the oil.

PRICE

The Cherokee is definitely the less pricey, and the above comparison shows why this is so. Recently, I have looked at a few GOOD, well-equipped 172s that are in the \$45,000 - \$55,000 range. A Pa28-140 Cherokee in similar condition will now fetch probably in the \$35,000 to \$40,000 range.

PARAMETER COMPARISON

The attached chart shows the performance and design comparisons. The fuel consumption is slightly less for the 172 at 75% power; this is puzzling since they both have the same engine, unless the different propellers are causative. These performance numbers are produced to sell airplanes and are done under ideal circumstances, by professional test pilots with the aircraft on the edge of its performance envelope. You and I will not exact the same performance; in some rough tests at Carp Airport, my "short-field" landings were somewhat greater than the book values.

SUMMING UP

In spite of the noted "shortcomings" of the Cherokee versus the C-172, will I go out and trade in my Cherokee for a 172 - not on your nellie! As Max Ward, that icon of Canadian aviation, so aptly said in a television series: "Every pilot loves his own aeroplane, after he has spent some time flying it". The Cherokee is a delight and has given me hundreds of hours of pleasurable and safe flying; I am sure C-172 owners will say the same. So what is the better aeroplane? In my opinion, as is obvious from the above, it is the Cessna 172. What is the better buy, (ie pound of aluminum for dollar spent?) or as in Consumers Report - what is the best value for money spent? I believe

the Pa28-140 is superior, because of its lower cost and perfectly adequate track record.

A COMPARISON OF THE CESSNA 172 AND THE PIPER CHEROKEE PA28-140

PARAMETER	C-172 /SKYHAWK	PA28-140 CHEROKEE
Wing Span	36 ft 1 in	30 ft
Length	26 ft 11 in	23 ft 3 in
Wing Area	174 sq.ft	160 sq.ft
Empty Weight	1,285/1,335 lbs	1,230 lbs
Gross Weight	2,300 lbs	2,150 lbs
Usefull Load	1,015/965 lbs	920 lbs
Usefull Load (full fuel)	757 lbs	649 lbs
Usefull Load	985 lbs	949 lbs
Baggage	120 lbs	200 lbs
Wing Loading	13.2 lbs/sq.ft	13.4 lbs/sq.ft
Power Loading	15.3 lbs/hp	14.3 lbs/hp
Fuel Capacity	42 usg (38 useable)	50 usg (48 useable)
Max. Speed Sea Level	139/140 mph	139 (142 with fenders)
Cruising Speed 75% opt.alt.	131/132 mph	132 (135 with fenders)
Power Plant	Lycoming O-0320 (150 hp)	Lycoming O-320 (150 hp)
Sea Level R/C	645 fpm (2,300 lbs) (90 mph)	660 fpm (85 mph)
	840 fpm (2,000 lbs)	
Take-off Ground Run	630 ft (2,000 lbs)	800 ft flaps up
	865 ft (2,300 lbs)	
Take-off Gnd Run over 50' ob.	1,525 ft (2,000 lbs) flaps up	1,700 ft flaps up
	1,525 ft (2,300 lbs) flaps up	
Landing Roll	520 ft	535 ft
Landing Roll over 50 ft ob.	1250 ft	1080 ft
Stalling Speed flaps up p/o	57 mph (2,300 lbs)	64 mph (2,150 lbs)
Stalling Speed flaps down p/o	49 mph (2,300 lbs)	55 mph (2,150 lbs)
Service Ceiling	13,100 ft	14,300 ft
Range,no reserve, 75% power	615/620 mi (9,000',4.7 hrs, 131/132 mph)	760-780 mi.
Fuel Consumption 75% power	8.1 usgph	8.4 usgph
CofG Range,Normal Category	88"-109" (21") (2,300 lbs)	88.4"-95.9" (7.5") (2,150 lbs)
CofG Range Normal Gategory	71"-94" (23") (2,000 lbs)	85.9"-95.9" (10") (1,975 lbs)
CofG Range Utility Category	71"-81" (10") (2,000 lbs)	85.8"-86.5" (0.7") (1,950 lbs)
Cabin Width Front Shoulders	39.5 in.	41.5 in.
Firewall to rear baggage wall	104 in.	91 in.

Young Eagles Flyday June 5
by Russ Robinson

Arrangements are underway for the June Flyday for Young Eagles. Please note that we have changed the date to Saturday June 5 with a rain date of the following Saturday, June 12. I could still use more volunteers both pilots and ground crew. If you would like to volunteer your help for the day, please e-mail me at russ.robinson@ec.gc.ca or call me at 831-2484.

I will be contacting all volunteers during the week before the Flyday to confirm that they are still available and to fill in any details. If you know any kids between the ages of 8 and 17 who would like to experience their first plane ride (sons, daughters, grandchildren, children of friends, secretaries, bosses, etc) please let me know and I will get them a registration form and sign them up for the Flyday.

The EAA Young Eagles website now has the World's Largest Logbook up and running and allows for searches by pilot, by Young Eagle or by EAA Chapter. Below is the current Logbook listing for Chapter 245. If you have any comments on this info, please let me know.

Pilot Name	Missions	Pilot Name	Missions
Manfred Ficker	18	Dick Moore	37
Chris Fauquier	10	Rodney Stead	14
Jim Robinson	6	Ken MacKenzie	28
Wally Bielinski	27	Garry Fancy	15
A G. Dauma	1	Stan Acres	1
James H. Bradley	21	Gary Palmer	34
Eric C. Levin	3	Keith Davidson	4
Terry Peters	26	Rod Neufeld	18
Luc De Sadeleer	6	Ted Givins	2
Irving Slone	8	John Richards	6
Mike McGrath	18	Luke P. DeSadeleer	7
Wolfgang Weichert	4	Graham Armour	3
John D. Irving	5	Charles Gregoire	4
Richard J. Moore	1	Winston B. Cotnam	3
George A. Elliott	1		

Hope to see you all on June 5.

Up and Coming Events

by Charles Gregoire

Date	Day	Time	Event	Location
May 15	Sat	0800	Haliburton Pancake Fly-in Breakfast	Stanhope (ND4)
May 15-16			Lachute Fly-in 450-562-1330	Lachute Que. (CSE4)
May 22-23			Montreal Airshow	Mirabel Que.
May 29-30			National Capital Airshow (Snowbirds)	Ottawa Airport (CYOW)
May 30	Sun	0800	Embrum Breakfast	Embrum (PR2)
June 5	Sat	1300	EAA 245 Young Eagles day	Carp Airport (CYRP)
June 6	Sun	0800	Smith Falls Breakfast	SmithFalls (CYSH)
June 12	Sat		EAA 245 Young Eagles Rain day (see June 5)	Carp Airport
June 12-13			Brampton Breakfast	Brampton
June 12-13			Trenton Airshow (Snowbirds)	Trenton Airport
June 13	Sun		Cobden Breakfast	Cobden Airfield
June 13	Sun		St.Lazare Breakfast	St.Lazare Airport
June 19	Sat	1000	EAA 245 Meeting	Carp Hangar
June 20	Sun		Cornwall Breakfast	Cornwall Airport
June 20	Sun		Picton Breakfast	Picton Airport
June 26-28			Sherbrooke Fly-in Event	Sherbrooke Que. (CYSC)
July 1	Thur		Rockcliffe Breakfast	Rockcliffe Airport
July 11	Sun	0730	Brockville Breakfast	Brockville (NL3)
July 11	Sun		Bancroft Breakfast	Tomvale Airport
July 17	Sat	1000	EAA 245 Meeting	Carp Hangar
July 18	Sun		Iroquois Breakfast	Iroquois Airport
July 28-Aug 3			Oshkosh EAA Convention	Oshkosh Wisconsin
Aug 8	Sun		EAA 245 Breakfast	Carp Airport
Aug 15	Sun		Alexandria Breakfast	Alexandria Airfield
Sept 16	Thur	2000	EAA 245 Meeting	NAM Ottawa
Oct 21	Thur	2000	EAA 245 Meeting	NAM Ottawa
Nov 18	Thur	2000	EAA 245 Meeting	NAM Ottawa

Jan 20

Thur 2000

EAA 245 Meeting

NAM Ottawa

EAA on TV
by Wayne Griese

Programming Schedule May to November 1999.

Look for Sport Aviation on Speedvision on your cable or satellite system every Wednesday at 7pm or 11pm; Thursday at 7:30am and 5:30pm; Saturday at 10am and 6pm

May 5-8	Sunrise at Sun 'n Fun
May 12-15	Hanoi Taxi
May 19- 22	In the Wake of Wings
May 26-29	Harleys / Fairchild / Twin Beach
June 2-5	Flightstar / Red Flag
June 9-12	Aerobatics: Flying the Manoeuvres
June 16-19	Gooney Bird/Cat
June 23-26	WWII Trainer/Thunderbirds
June 30-July 3	Pitcairn: Legacy of Wings
July 7-10	Kit Building
July 14-17	Home Builts
July 21-31	Float Plane
Aug 4-7	Venerable Stearmans
Aug 11-14	B-17 / The Mach 2 man
Aug 16-21	Fly-in Phenomenon
Aug 25-28	Parakeets / Lionhearts / Wildcats
Sep 1-4	Ballistic Parachute / Spy Plane
Sep 8-11	Early Airliners
Sep 15-18	Airships / Eagles
Sep 22-25	Crop Dusting / Blue Angels
Sep 29-Oct 2	Homebuilt Dreams
Oct 6-9	Crews of Victory, Part 1
Oct 13-16	Crews of Victory, Part 2
Oct 20-23	AirVenture Oshkosh '98
Oct 27-30	The Future of the Air Force
Nov 3-6	National Business Aircraft Show

Classifieds

Place your ads by phone with Charles Gregoire @ 828-7493 or e-mail to cbg@nortelnetworks.com
 Deadline is first of the month.
 Ads will run for three months with a renewal option of two more months.

Irving Slone is looking for someone to accompany him in a Pietenpol to assist in flying it to Oshkosh this coming summer. Oshkosh 99 is featuring the 70th anniversary of the Pietenpol. A large turnout of Pietenpols is expected, (20 so far) and will be parked together in the showplane area. A multi-media presentation on the legendary designer and his aircraft will be presented at the theatre of the woods. If interested call Irving Slone at 722-0359 (res) or 230-2100 (office) 03/99

A limited number of WearCheck engine oil analysis (SOAP) kits at \$28 each. Price includes analysis for 17 wear elements, additives and contaminants, percent fuel dilution, water concentration and diagnostic recommendation, plus debris examination (if present). SOAP has been used for at least 30 years and is the most widely accepted method of internal engine health monitoring and can often pinpoint impending engine failure.
 Garry Fancy 836-2829 02/99

Charles's Parts Bin

ASA Tri-fold Knee board \$40 obo
 New SCAT Hosing, 3"dia. \$8/ft
 Old tachometer and cable off C150M \$35 obo
 Cessna Clock \$35 obo
 Charles Gregoire 613-828-7493 11/98

Davis-DA2 TT400, new lower price
 C-85 25 SMOH, all metal, 110 MPH, \$12,000
 Jim Bradley 613-839-5542 06/98

Tim's Parts Bin

Cessna 140 exhaust system complete \$500.00
 Cessna 140 engine baffles \$50.00
 MS24566-4B pulley NEW \$8.00ea.,
 Large HF radio (ex Otter), good ham project \$25.00,
 Large Radar Screen (possible coffee table???) \$25.00,
 Beech 18 oil cooler, new (possible rad??) \$50.00, 6 Gal.
 J-3 wing Tanks (2) \$200.00, Box of VW engine Parts (possible 1/2 vw project) \$50.00, New autopilot , 12 volt trim servos and stuff \$25.00, Air Path and Pioneer 3 1/8 compass cores \$75.00/ea, Shark Fin pitot tube 24volt, new in box \$25.00, Beaver U/L Lotus float rigging (spreader bars, etc.) \$25.00, Continental prop. spacer (O.E.M. alum) \$50.00
 Tim Robinson 613-824-5044 03/98
 75714.2136@compuserve.com

McCauley Metal Prop, 70-38 for a continental A65 or C85.

Jim Robinson 613-830-4317 01/98

Garry's Parts Bin

50 ft. 1/8" galvanized aircraft control cable, 7x19, MIL-W83420D
 Dynafocal engine mount
 Wheel pants \$100.00
 Oil, break-in, 12 litres, Shell, Esso
 Wing Tip Nav Lights
 NACA air inlets
 Elevator trim assembly
 Primer
 Valves, Fuel selector
 Valve, Parking brake
 Accelerometer (G-meter) 2.25 inch
 Oil cooler - Continental 6cyl.
 CHT gauge and probe
 Lycoming, Accessory case, dual take-off adapter for hydraulic and vacuum pumps.
 Piston rings for Continental E-185 or O-470.
 Light weight starter & bracket for Lycoming O320 or O360.
 two Lycoming engine-driven fuel pumps \$50.00 each

 Control wheel yoke assembly from Piper Tomahawk

 Engine, VW 1600cc completely rebuilt
 Garry Fancy (613)-836-2829 01/98

Articles Wanted

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

cbg@nortelnetworks.com **01/98**



EAA Chapter 245 Membership Application

NEW:___ RENEWAL:___ DATE:___/___/___
EAA NUMBER:.....
EXP Date:___/___/___
NAME:.....
ADDRESS:.....
CITY/TOWN:.....
PROV:.....PC:.....
PHONE:(.....).....H (.....).....W
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
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:
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Ontario, K2M 2C3