



# Carb Heat

Hot Air and Flying Rumours

EAA 245 NEWSLETTER Vol 39 No. 10

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## Next Meeting

### Bush Theatre National Aviation Museum

Thursday November 19<sup>th</sup> at 8:00 PM

406MHz ELT Update (Mark Briggs)

and Rough River Flight (Phil Johnson)



### November 2009

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<http://eaa245.dhs.org/>

## President's Message



The row hanger group carried out the first phase of a major repair to their hangers this month by cutting and anchoring the posts on the North side of the row hanger, then installing a French drain to better drain the North side of the hangers. At the same time EAA 245 purchased a load of gravel that was spread by Mark Briggs on the area commonly used by members to drive to the front of our hanger. Hopefully this will firm up the ground significantly so that we no longer leave deep ruts in the grass – at least not in that area. Thanks to the hanger owners for allowing Mark to spread the gravel as part of their work detail, and of course thanks to Mark as well!

### October Meeting

At our October general meeting Lars Eif officiated elections for Vice-President, Treasurer, Secretary and Newsletter Editor. The incumbents were reaffirmed for each post with Russ Robinson as Vice-President, Curtis Hillier

as Treasurer, Phil Johnson as Secretary and Bill Reed as Newsletter Editor.

Following the elections Bill Reed gave an excellent presentation on his flights around High River, Alberta; to the Yukon; and back to Carp in his newly acquired RV-8A. Well done Bill!

### Air Cadet Squadron 706 Fly Day

Air Cadet squadron 706 cancelled their fly day scheduled for Sunday, October 25 due to the fact that their chief pilot was called to Cold Lake for an undetermined period. I will let you know when they plan another fly day.

### Pietenpol Leaves CYRP

On November 1<sup>st</sup> Don Taylor flew the Bytown Flying Club's Pietenpol C-GFCU away from the Carp airport for long term storage at the Argue field. As the longest resident homebuilt at the EAA side of the airport we are sorry to see it go. The owners of

the aircraft are currently deciding the future of the plane.

### Hanger Use by CASARA

We have made our hanger lounge available to the Civil Aviation Search and Rescue Association for Saturday, Nov 21 for one of their regular meets. This will not preclude any of our members using the hanger or the workshop facilities.

### Upcoming Meetings

The next regular meeting will be held at 8:00PM on Thursday, November 19<sup>th</sup> in the Bush Theatre at the Canadian Aviation Museum.

We will have two shorter presentations this month. The first will be an update on the 406 MHz ELT regs and equipment by Mark Briggs. Following this Phil Johnson will recount his recent trip to Rough River in an RV-7A.

19 Nov 2009	406MHz ELT Update (Mark Briggs) and Rough River Flight (Phil Johnson)
17 Dec 2009	No Meeting – Christmas Break
21 Jan 2010	After the Restrictions by Jeff Langford, Transport Canada (Tentative)

Hoping you can attend the November meeting, and as always-

Blue Skies,  
Martin

**Old Local News**

**EXHAUST – from the Carb Heat Archives 20 YEARS AGO September 1989**

The new officers recruited during the 1989 Annual General Meeting were: Lars Eif – President; Gary Palmer – Vice President; Deric Dodds – Treasurer and James Oliff – Editor. Continuing support was provided by: Andy Doumas – Secretary; Dick Moore – Aircraft Operations and Newsletter Publisher; Special

Events – Gord Standing and Membership – Rodney Stead.

John Richards hosted a “Show and Tell” at his house in November, 1989. The members who attended spent two and a half hours admiring John’s workmanship on his all-metal Zenith 300. They particularly enjoyed the coffee and doughnuts provided by Mrs.

Richards. The evening was reported to be a solid success.

There is much more in the Carb Heat Archives now on the computer in the lounge at Carp. Please keep the old newsletters coming so we can complete our collection.

Wayne.

**Old Carb Heat Newsletters Wanted**

Fill in the blanks for EAA Chapter 245 Archives

Year\Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
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Note: Scanned copies of 25 years of Carb Heat, from 1984 to 2008, are on the Chapter’s computer for you to view or copy. If you can provide a copy of the missing issues contact Wayne Griese. Thanks for your support. *Wayne can be contacted via email at wayner at igs dot net. Or by phone at 613-256-5439*

**Local Book Report by Bill Pepper**

Book report on “The logic of Flight/Propellers The first and Final Explanation” by Jack Norris

At Oshkosh in 2008 I heard the last 5 minutes of a talk by Jack Norris. He was explaining how to fly for

maximum economy. On the strength of this I bought his book. It is actually two books printed with two front covers

and obviously no back covers. These books contain useful information but the propeller book is the most tedious thing I have ever read. The other book is better but still a pain to read. Jack Norris believes that if something is worth stating once you may as well repeat it twenty times. He is aware of the repetition but is of the opinion that it makes the subject matter easier to understand. It would be better to write everything once and then leave it up to the reader to reread if necessary. I read the whole thing as not every repetition is exactly the same and I did not want to miss anything useful. This book would be significantly improved if only a good editor had been employed.

The main point he makes in the propeller part is that the blades are acting like wings but the tips are moving much faster than the rest of the blade and will produce excessive vortices unless well tapered. He also states that great care should be taken when tapering a propeller

tip to avoid weakness and/or vibration. We have all seen square tipped blades and they are very inefficient. Tests were performed towing propeller less planes in order to measure the drag of the plane without the effects of a wind-milling or non-rotating propeller. The propulsive efficiency of a Bellanca Cruiseair was found to be 58%. Jack Norris devised a method of measuring the drag of a plane without removing the propeller. He utilised the play in the thrust bearings of an engine to drive a switch so that the transition of the propeller from pulling to pushing could be detected. He claims that a badly designed propeller can have an efficiency 8 to 10% lower than a well designed propeller. He states that the latest Hartzell propellers are efficient as are the Whirlwind propellers made by Jim Rust at El Cajon, San Diego.

He also explains that the Schneider Trophy planes were seaplanes because they had fixed pitch propellers with very

coarse pitches. The propellers would be stalled at low speeds producing very low thrust resulting in a takeoff distance that would be too long for the existing runways.

The second book deals with the theory of flight, engine efficiency and leaning. This is where the efficient way to fly is introduced. This is explained as flying at 1.316 times the maximum climb IAS with the throttle wide open as high as possible. The theory behind this is in the book. There is a lot of information in this book all written in the same sleep-inducing style as the propeller book.

The book can be ordered from:  
11613 Seminole Circle,  
Northridge, CA 91326  
818 360 1105

The price is US\$14.95 with a statement that a \$2, \$3 shipping charge is encouraged.

### Aviation Humour from AVwebFlash Volume 15, Number 44a

Overheard in *IFR Magazine's* "On the Air"

**Airliner:**

"Approach, what's our sequence?"

**Approach:**

"Aircraft calling for the sequence, I missed your callsign — but if I find out what it is, you're last."

Courtesy of the Top Twenty Actual Transmissions Heard in the O'Hare Tracon, from *IntentionallyLeftBlank*, the newsletter of O'Hare's National Air Traffic Controllers Association.

### Steen Skybolt by Lars Eif

June 3, 2009 will long remain a special day in my life; as important as my wedding day or the evening my son was born.

On that day in June, the Skybolt that I built over the past 24 years roared down runway 28 at Carp Airport and ascended into the air at an

impressive climb angle. At the controls was Fern Villeneuve, a veteran fighter pilot who has conducted hundreds of test

flights on every kind of aircraft imaginable.

The story of my Skybolt began in 1985. That year, I bought a set of plans for a ¼ scale radio control model of a Skybolt biplane. Along with flying R/C models, I was a private pilot renting Cessna 150s and 172s at the Rockcliffe Flying Club. And yes, I had always wanted to build my own aircraft. More or less on a whim, I thought, why build the model when I can build the real thing? After ordering a set of plans from LaMar Steen, I sought out some local Skybolt owners in the Toronto area and inspected their aircraft. I became convinced to build one after an owner's son gave me a ride in the front seat of their Skybolt. During the flight, he demonstrated an aileron roll and asked me if I wanted to do one. Sure did! After we landed, I decided that with only five or six short years of spare time work and a few thousand dollars, I could have my very own Skybolt.

Construction started with cutting out the flat plate 4130 steel pieces on a band saw. I also welded my own aluminum fuel tank using the TIG welder at work. Dumb move! When I pressure-tested the tank many years later, it had more pinholes than a sponge. A quick call to Steen Aero Lab solved that problem. Their fuel tanks are aluminum works of welded art. It's almost a shame to paint them. Best of all, no leaks.

The first components that looked like an airplane were the

4130 steel tube fuselage and the tail feathers. I enjoy welding, so that part was fun.



Skybolt 1 Fuselage welding completed

Next, I ordered a bundle of sitka spruce from a company in Alberta and built the wings and ailerons using 2-part epoxy glue. Also fun, but a lot more fiddly than welding. I opted for the built-up ribs because they look so neat compared to the routed plywood ribs. Another dumb move! Once they are covered up, nobody can see those beautiful gusseted ribs except in the pictures in my photo album.



Skybolt 2 Rib Construction



Skybolt 3 Varnishing the lower wing

Along the way, I ordered a copy of Mac McKenzie's newsletters, the Skybolt News. I couldn't have built the aircraft without the information in these newsletters. I am sure the new Skybolt plans are much more detailed, but LaMar's original plans contained only component dimensions. They provided no details on such essentials as the electrical system, fuel system, or instruments. I also ordered the Firebolt nose bowl and the sliding canopy tracks from Mac.

Next, I sand-blasted the fuselage and tail feathers on the lawn behind the EAA chapter hangar. That was an absolutely horrible job! Despite wearing protective clothing and showering nightly, I was picking silica sand out of my ears and my teeth gritted for days. The good thing about sand blasting is that it gives the welded steel a velvet-like finish which makes the epoxy primer bond securely to the steel parts.

Concurrent with welding the fuselage, I searched for a suitable engine and propeller. It seemed like every Skybolt builder was installing a 260 hp Lycoming IO-540 from a derelict Piper Aztec, but I

couldn't find a good one despite answering several ads. I finally found an inexpensive, low-time 200 hp IO-360A1B6D at Dorval Airport, only 2 hours driving distance from home. It came out of a Cardinal RG that suffered a gear-up landing. Buying a prop-strike engine is risky, but I got lucky. I disassembled the engine, sent the crankshaft, camshaft and connecting rods to an NDT (non-destructive testing) laboratory and whoopee! Every part was OK. No bent prop flange, either. The Hoffman constant speed propeller came along about a year later, also at a very reasonable price. Brand new and carefully preserved, it had been part of a Pitts Special project that was parted out after the builder lost interest.

The fabric covering came next. I attended the Poly-Fiber seminars at Oshkosh during three visits to Airventure before covering my own wings, tail feathers and rear fuselage. That part was fun. Rib lacing was a bit tedious, but my wife kept my motivation up by offering to finish the rib lacing for me. No way! I'm slow and fussy. She's fast and messy.

Word of advice. All the Poly-Fiber products have good shelf life except the Poly-Tak fabric cement. After six months, it won't even pour out of the can. I had purchased all my covering supplies two years before during a vacation in Florida. All my cans of Poly-Tak had to be replaced with fresh ones when the time came to glue the fabric on.

At the point in the project where I had a complete airframe, I thought I'd be flying in a year or two. What a dreamer! Cutting out and fitting the aluminum fuselage panels from the nose bowl back to the pilot's seat took over a year. Then came the sliding canopy. Looked simple enough in the plans I bought from Starfire Aviation. That was another year of fiddly work, but it was worth it. The sliding bubble canopy not only protects me from the cold and the wind, but looks pretty cool. Now, when I taxi back to the ramp after a flight, I slide it back like a WW-II fighter pilot returning from a mission in his P-51 or Spitfire. What a great feeling!

Now I had a completely covered aircraft, but it still needed to be painted. During several visits to Oshkosh, there was one paint scheme that really impressed me. Most Skybolts looked good, but Jim Simmons' Skybolt "Deja Vu" with its blue, gray and black stripes was stunning! I had to paint mine like that or forever regret that I didn't. So I started spraying Aerothane on my wings in my dusty hangar at the airport.



Skybolt 4 Painting

It was far from ideal, but I tried to spray in the evenings when the wind was calm.

Aerothane is a toxic two part polyurethane paint, so a Tyvek suit and Hobby Air breathing pump and mask were mandatory for every spray session.

Eventually, the painting was finished and my wife helped me tow the fuselage from our home to the EAA chapter hangar on a rented trailer that fish-tailed above 80 km/h (in rush hour traffic in the darkness, no less!) In the next few days, I assembled the components into one complete aircraft. It was beautiful! Should be flying in a few weeks, I thought. Dreamer! The EAA chapter had bought new accurate weigh scales and I excitedly levelled the Skybolt and weighed it. Yikes! It weighed 1363 lbs empty (should weigh 1250 lbs) and it was tail heavy. How could that be? Well, it was tail heavy because like everybody else, I mounted the battery behind the pilot's seat. Trouble was, everybody else had a six cylinder IO-540 engine in the nose while I had the lighter four cylinder IO-360. Three weeks later, I finished installing the Odyssey 680 battery in its new bracket along with the starter relay and master relay on the firewall and re-routed the wiring bundle forward. It took a lot of extra hours of work in sub-zero temperatures, but was worth it. Now the C of G falls within the allowable limits for every possible loading configuration

and the empty weight dropped to 1360 lbs.

Admittedly, my aircraft is heavier than most 200 hp Skybolts. Looking back, the likely culprits are the full instrument panels, cabin heat with fresh air ducts and vents, dual muffler exhaust system,

full ¼" plywood floor, plush upholstered seat cushions, sliding canopy hardware rather than open cockpits and thick layers of glossy polyurethane paint. Not much I can do about it now other than become anorexic and lose 100 lbs. Fortunately, that won't be

necessary because even loaded to a full gross weight of 1900 lbs, the Skybolt climbs at 1200 fpm and stalls at 65 mph which suits me just fine.

*Continued next issue January 2010 ed*

### Mark your Calendars:

Some items have been copied from the COPA Flight and the EAA website

**Picton, ON: Breakfast on the second Sunday of every month - starting in April (call for runway conditions during winter) at the Prince Edward Flying Club - Picton Airport (CNT7). For more information call 613-399-9076.**

**First Tuesday of the month, Kars, ON,** Monthly meeting of the local RAA chapter (Ottawa-Rideau) Everyone is welcome Contact Larry Rowan 613-489-3223

**November 25, 2009, Toronto, ON:** Transport Canada System Safety Seminar – Winter Operation Tools. In this packed seminar, Michel Treskin will review and discuss the hazards and risks associated with cold weather operations, giving you the tools to be able to safely enjoy flying this winter. Contact our main number at 416- 952-0175 for information on the seminars or other offerings.

**25 novembre, Toronto, ON:** Transports Canada Séminaires mensuels sur la sécurité aérienne – Outils d'opération d'hiver. Dans ce séminaire chargé d'information, Michel Treskin passera en revue les dangers et les risques associés aux vols par temps froid et vous fournira les outils dont vous avez besoin pour piloter en toute sécurité cet hiver. Pour plus d'information appelez 416-952-0175.

**28 November , Kingston, ON:** 13th Annual Aviation Christmas Dinner to be held at the Italo Canadian Club in Kingston. Cocktails at 5:30 p.m. and dinner at 7 p.m. Our guest speaker this year will be Col (Ret'd) Glen Cook, Navy Test Pilot and author. Contact Lois Tisdale at 613-548-3753 or email [loisdave@kingston.net](mailto:loisdave@kingston.net).

### FOR SALE

Place your ads by phone with Bill Reed 613-831-8762 or e-mail to [bill@nfc.ca](mailto:bill@nfc.ca)

Deadline is two weeks before the next meeting. 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.

07/09 Call Bill Reed 613-831-8762

### For Sale

\$50,000

### Murphy REBEL

320 hours, Lycoming O-320, Icom A200, AT150 Transponder, Garmin 196 GPS, Scott tail wheel, David Clark Headsets,

11/09 Rollie Acorn 613-830-5346 or email: [sacorn@travel-net.com](mailto:sacorn@travel-net.com)

### For Rent

Negotiable

One half of my hangar T2-5 at CYRP, Carp

11/09 Contact Pierre Brunet 613-769-4430

### For Sale

RV-6 fiberglass odds and sods for sale

Wing tips, fairings, fuel tanks,

### For Sale

\$3,100

Lazair 1, steerable tricycle landing gear, Pioneer engines with spare engines, skis and nose cone.

11/09 Contact Michel at 819-685-2194 or email at [andre04@sympatico.ca](mailto:andre04@sympatico.ca)

**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.  
 07/09 call Curtis Hillier 613 831-6352

<b>For Sale</b>	See Below
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Two Volkswagen 1600cc "Beetle" engines.  
 One Completely rebuilt - \$1,000,  
 One partially rebuilt - \$275  
 Larger (6-cyl) Continental Oil Cooler (8"x9") - \$50  
 Lycoming accessory case dual take-off adapter (ie hydraulic and vacuum pump - \$150  
 Piston Ring Set for E-185/0-470 Continental series - \$100.00  
 Continental C-85/0-200 ring set and rocker pins  
 Lycoming dynafocal engine mount - \$75.  
 Two shoulder harness inertia reels \$10.00 each  
 Four seat belts metal to metal like new - \$20.00 each  
 Lunkenheimer Primer - \$20.00  
 Fuel pumps, hand-operated (wobble-type) \$20  
 Two Scott parking brake valves (new value \$150 U.S.)  
 Pair Goodyear 600x6 wheels and brakes - \$150  
 Vista Vent (cockpit fresh air)- \$15.  
 Lightweight automotive starter and bracket for Lycoming  
 Miscellaneous older instruments, gascolator  
 Piper trim wheel and cables - \$15.  
 Parachute, seat pack condition unknown  
 10/09 Garry Fancy (613) 836-2829  
 cherokee@magma.ca

fiberglass,etc.  
 3) Requires 2 wing tanks, for leading edge.  
 4) Assembly required.  
 5) Final inspection  
 6) Fly....Fly.....Fly

**Specifications**  
 Top Speed 180/mhr Empty Weight 1150 lbs.  
 Cruise 150/mhr Gross Weight 1875 lbs.  
 Stall 51/mhr Seats 3-4  
 Climb 1100 ft/m Span 30.6  
 Main gear Erecoup  
 Nose gear Cessna 150  
 Sliding Canopy  
 Low Wing - elliptical design  
 Seats (Cessna Adjustable)  
 Misc. - Assy Bolts, paint, electirc flaps, etc.  
 For more details contact: [ednaredl@hotmail.com](mailto:ednaredl@hotmail.com)  
 Phone: Elmer @ 306-374-5340

**More local news**



Mark Briggs has been seen in the air breaking in his rebuilt C-85

<b>For Sale:</b>	\$8,000 OBO
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Diamante CP605 Project Aircraft.  
 This aircraft has commendable workmanship (this comment from Transport Canada at time of documentation for pre-cover inspection March 21, 1988.)  
**Work to be Done**  
 1) Purchase Lyc.0320 engine to fit dynafocal mount.  
 2) Finish engine cowling (needs 2 layers



**AA Chapter 245 Membership**

**Application**

NEW: \_\_\_ RENEWAL:\_\_\_ DATE: \_\_\_/\_\_\_/\_\_\_

EAA NUMBER \_\_\_\_\_

EXP Date: \_/ \_/ \_

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY/TOWN: \_\_\_\_\_

PROV: \_\_\_\_\_ .PC: \_\_\_\_\_ .

PHONE:( ) \_\_\_\_\_ - \_\_\_\_\_ .H ( ) \_\_\_\_\_ - \_\_\_\_\_ .W

EMAIL: \_\_\_\_\_

N/L DISTRIBUTION Preference: email \_\_\_ post \_\_\_ .

**AIRCRAFT & REGISTRATION:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OTHER AVIATION AFFILIATIONS:**

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

**Make cheque payable to:  
EAA Chapter 245 (Ottawa)  
Mail to - P.O. Box 24149, Hazeldean R.P.O., Kanata,  
Ontario, K2M 2C3**