

CARB HEAT

Newsletter of the Experimental Aircraft Association Chapter 245
Ottawa (Carp CYRP), Ontario, Canada
Volume 54 No. 1 March 31st, 2024

Next Meeting

Saturday, April 20th, 2024

WHERE: EAA 245 Clubhouse Hangar starting at 10am (CYRP)

Check your email in-box for a possible ZOOM meeting invitation to be sent by our Chapter President.
(it's not hard at all to join a Zoom meeting – try it, if you're having trouble, contact one of the execs who will help you out). This will be a backup to in person meetings if needed.

Important Chapter News

COVID-19 is still with us and remains an ongoing cause for concern. However, our Chapter hangar remains open, and meetings may be held in the hangar or upstairs in the club house. Please stay tuned for updated guidance from our President. Wearing a mask is optional these days but, if you feel under the weather keep a mask handy.



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EXECUTIVE ROUNDUP

Editor's Comments

Peter Whittaker – EAA Chapter 245 Newsletter Editor



Hello EAA Chapter 245,

Welcome to the first quarterly edition of Carb Heat for 2024. This starts with updates from executive members and follows with an article by our President on upholstery work he is doing for his Bearhawk project. I have a short note on attempting to form an acrylic landing light cover included in an update on my 750 Cruzer project. VP Mark Briggs also gives an inspiring article to encourage members to fly out and see some of the early Springtime scenery.

On a separate note, Ian Brown, editor of the EAA Canada Council Newsletter, has asked for a volunteer to provide some photos and a brief note from the upcoming Gatineau Air Show in September. If you plan on attending the air show and can take some photos and write a

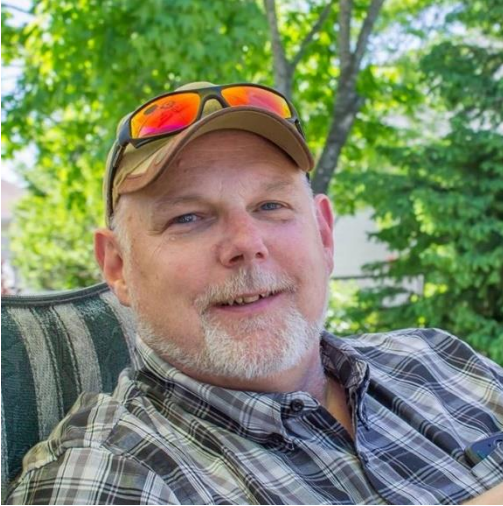
paragraph or two about the event (and especially any homebuilts present) let me know or contact Ian directly at: Newsletter.EAACC@gmail.com

Keep on Building, Flying and Remember – always check your Carb Heat!

Peter W

President's Message

Mark Richardson – EAA Chapter 245 President



Hey Everyone,

Well, as of this writing "official" spring is just around the corner (next week), but in our part of Ontario it looks like spring started a couple of weeks ago. I managed to get our Maule out of hibernation and flew it off of our grass strip a few days ago. This is the earliest spring flight ever for me as we normally still have a couple of feet (or half a metre for you young people) of snow around. It felt goooooooood to get flying again after a few months off.

As you probably know, we sold the chapter's Zenith project to Rob Fleck and Graham Smith a while back. This has replenished the chapter's coffers and will allow us to do some much-needed renovations/repairs to the chapter hangar and lounge. One job that **MUST** be done is the replacement of the windows in the lounge, which will force a lot of drywall repair and replacement. While we have access to the wall internals, we will fix the Gordian Knot of electrical wiring that is there and, possibly, work around the panel in the hangar bay. All of this to say that we (especially Chris H) could really use some help with this. Not only physical labour but also the acquisition of new/replacement windows and, if you have the knowledge/licence, help with fixing the electrics. We are years past due addressing these issues.

And a final note before signing off; we have a Young Eagles event coming up on 25 May. Andrew Henry is looking for pilot and ground crew volunteers for the event. Please think about helping out and contact him at Young.Eagles@eaa245.org

Now, get out there and go flying.

Mark

PS: Our meeting location has been updated on the "Find a Chapter" page of the EAA HQ website. I specified it as the "Very end of Russ Bradley Rd" as there is no civic number associated with it.

Vice-President

Mark Briggs – EAA Chapter 245 Vice-President



Happy Spring, Folks!

It's hard to believe that we're still in the month of March and there's so little snow on the ground. This weather promises some good flying (if the winds will die down!).

Flying is always fun, but with a friend it's all that much better. Recently I had an opportunity to fly with my long-time friend, Brett. Many of you will recognize him as he has often been present in my hangar. His contributions to the construction of our Sportsman have been numerous. As an AME actively involved in maintaining commercial helicopters, Brett has a keen eye for things which will chafe or come loose under the extreme duty of high-cycle helicopter operations. When he works on a fixed wing aircraft he does the work to the same standards as required in helicopters. I attribute the ability of the Sportsman to go from inspection to inspection without defects to the inspiration he has provided to "do it right".

While Brett is an excellent hand at maintenance tasks, he's also an excellent "stick", having completed his fixed wing commercial pilot license many years ago before converting to flying helicopters. While he doesn't keep his pilot license current his flying skills are still sharp.

This Easter weekend we hopped in the Sportsman, and despite the strong winds (20+ knots at 2000'MSL), we headed up the Ottawa River toward Pembroke to see the whitewater there. Surprisingly, the river level is low so there isn't a lot of whitewater to be seen. We then let the tailwind blast us back to Carp for a quick stop at the chapter hangar to pick up an item there, then back home to Arnprior. Altogether we logged 1.4 hours in the air... Only aviation folks can justify flying 1.4 hours to go to Carp to pick something up, a round trip that would have taken a half hour by car!

We both managed to get our "aviation fix", with lots of good-natured banter and lots of smiles as we flew along. This is what aviation is all about. Sure, it's about airplanes... but more importantly, it's about *airplane people*.

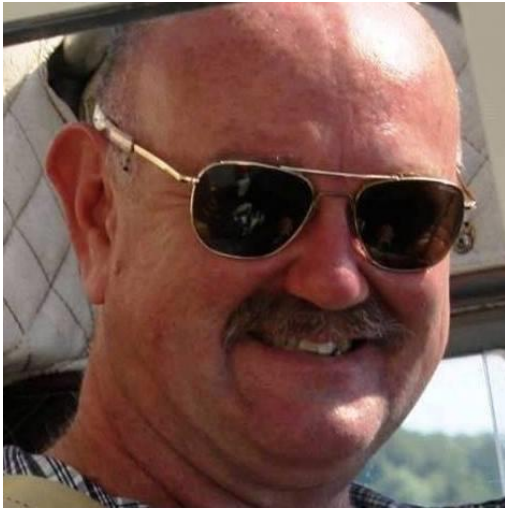
I'm looking forward to seeing some readers of *Carb Heat* out and about at a local airport this spring. Here's to happy aviating!



Mark

Treasurer and Marketing Manager

Ken Potter – EAA Chapter 245 Treasurer & Marketing Manager



Hello Everyone,

Chapter 245 is in a good financial position after the sale of the Cruiser. Renovations to the clubhouse for new windows and some electrical work will use some of the Cruiser sale proceeds.

Cheers,
Ken

Secretary

Mark Cianfaglione – EAA Chapter 245 Secretary



Hello Everyone,

We've had an unsettlingly warm winter this year. I don't ever recall wearing my sneakers outside during winter ever before yet this year, except for 3 weeks, I've worn nothing else.

This has given me an opportunity to do a little work on my airplane in its cold hangar though. I've been busy sourcing exhaust parts as that will be the big task this year. In true amateur building fashion I'm going to fabricate one from scratch. (Including the silencer)

I've been snooping around websites for parts, and I believe I've got sources for everything. I'll have to borrow my brother's generator for my welder (I only have an anemic 120VAC/15A in my hangar) but I should be able to tack everything together and disassemble to do the final

welding.

This should be fun as I've never built an exhaust system.

Mark C.

Operations

Chris Hepburn – EAA Chapter 245 Operations



Hello All,

We have a winter tenant in the hanger, so please take care moving stuff around the hangar to avoid hangar rash.... It's tight in there.

Also, keep an eye on the grass to check how soft it is before driving on it as frost comes out of the ground.

Enjoy flying this spring on those warmer sunny days.

Chris

Membership and Webmaster's Report

Phillip Johnson – EAA Chapter 245 Membership Coordinator & Webmaster



Hello All,

January has come and gone, and April is just around the corner. I'm preparing to return to Ottawa and get back in the left seat of the Cozy. While it's been nice and warm down here in Southern California and I have new friends in EAA chapter 1279 French Valley, I am looking forward to coming home and getting some flying in.

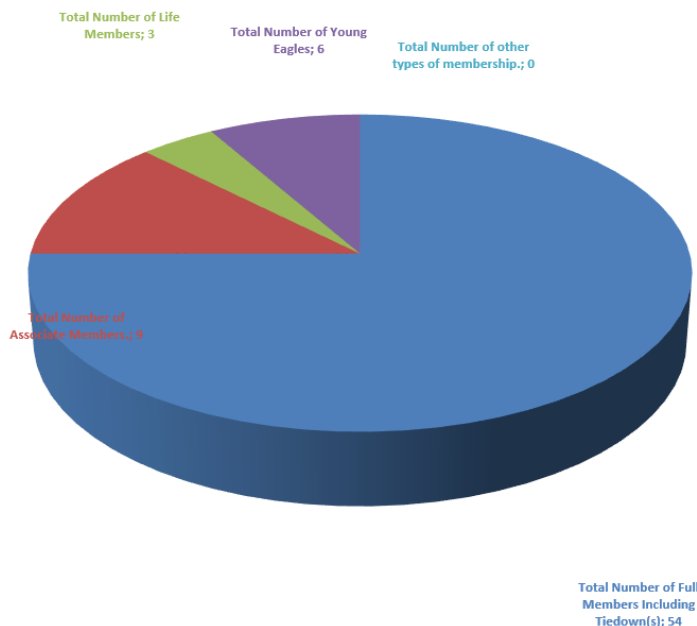
When I parked the Cozy for the winter, I removed both batteries and emptied the fuel tanks as I didn't want to have stale fuel in the spring. Since it is empty of fuel, I plan to do a new weight and balance just to be sure the small changes I made over the years have not adversely affected the W&B. It should be lighter now as I've removed the heavy

Odyssey battery and replaced it with a much lighter EarthX which gives me much more front seat capacity for co-pilots etc. My hydraulic gauges are also showing internal leakage and will also need to be replaced, but I have new ones ready for installation already down in Smiths Falls. All I need to do is remove the canard to get behind the panel to do the job properly. I'll probably do the annual Inspection at the same time, which will advance the schedule for that job.

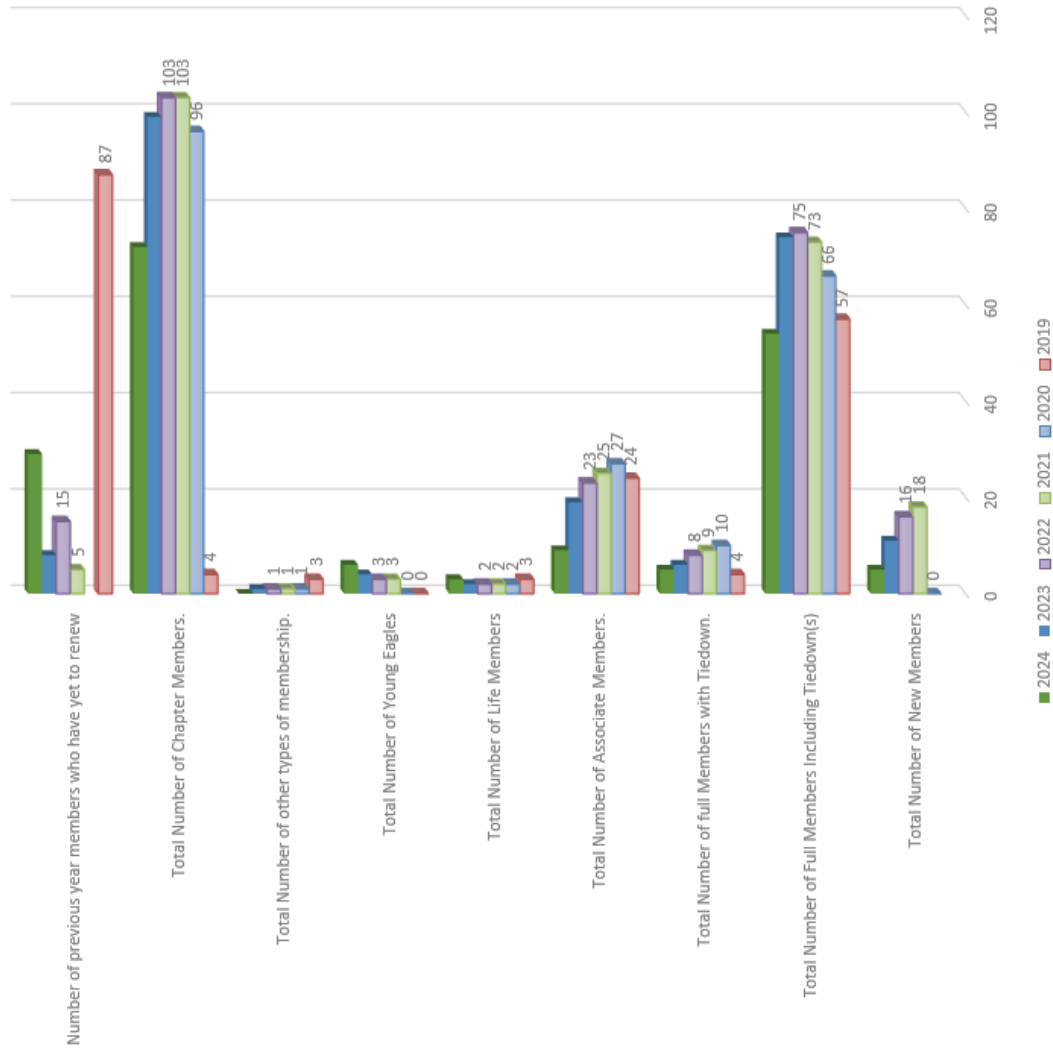
On the membership front, we are behind on having our 2023 members renewing their memberships for 2024 so please get that done if you are one of the late comers. Just send your dues to treasurer@eaa245.org by eTransfer and we will do the rest. The two charts below show how we are doing in comparison to previous years.

2024

Membership Breakdown



Multi-Year Membership Breakdown



On the web front, it is being updated regularly so, please give it a read and enjoy the new content.

As many of you know, I'm on the Canadian Council, and I work with EAA to set up camping at Airventure for Canadian EAA members. Last year was a great hit but EAA felt they were giving away the farm so this year things will be different. If you want to join us at Airventure and have your spot marked out ahead of your arrival, that can be done, but there is a price to be paid to get this benefit. EAA will mark out our spot on the 10th July for all Canadian EAA members and campers may arrive as early as 13th July and run through the whole event for the price of \$324USD. This works out at half price, providing you take advantage of the full period at Airventure. There are no refunds for early departure if you take this option. We will be doing our best to support regular attendees on an ad hock basis so if you fly in or have a small tent, we will probably be able to accommodate you. If you want to turn up at the last minute with a motorhome or fifth wheel, I'm pretty sure you will be out of luck. I will be putting out an email to members with a better explanation in the near future, but I will require commitment from you if you want to make this work.

Regards,

Phillip Johnson

Young Eagles

Andrew Henry – EAA Chapter 245 Young Eagles Coordinator



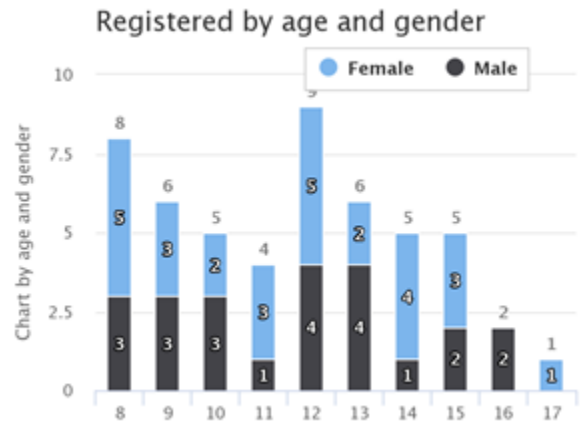
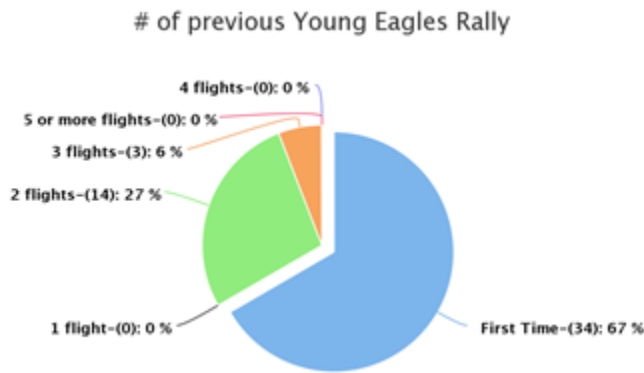
Hello Members,
 Unfortunately, our fall Young Eagles event was cancelled because of strong cross winds in the forecast.

We did have 11 pilots confirmed and 51 registered Young Eagles for last fall.

The Spring Young Eagles event is planned for Saturday, May 25th with the 26th as the rain date.

Pilot and ground crew volunteers are needed, if you can volunteer the email contact is below with which to contact me.

The metrics for the planned Young Eagles Day last fall were:



Thanks, and Happy Flying!

Andrew Henry

Young Eagles Coordinator

EAA245

Young.eagles@eaa245.org



MEMBER ARTICLES & PROJECTS

Zenith 750 Cruiser Update – Peter Whittaker



The Zenith 750 Cruiser that I started at the end of May, 2022 is really approaching that 90% done and 90% left to go stage! The Cruiser is beginning to look like an airplane with the cowling trimmed and fitted around the the Jabiru 3300 engine. Rather than painting I have opted to go with vinyl wrapping and the assistance of “The Wrap Guy” since I was too chicken to try this on my own. The photos below show the cowling fitted and the fuselage and empennage mostly wrapped with basic white vinyl. This is about 2.5 mil vinyl from Avery-Dennison. Eventually some stripes will be added to increase my perceived airspeed potential.

The wings are next to be vinyl wrapped and in preparation for completion of the wings I need a lens for the landing light which needs to be heat formed from acrylic sheet so;

Trial Forming a Landing Light Acrylic Lens:

The Heater: An infra-red heater with two quartz filaments and an overhead metal suspension bracket from Lee Valley Tools was purchased. The heater is portable and was suspended from a wooden frame with a couple of screws plus a center bolt and wing nut so the heater can be rotated if required. To get different heights and proximity to the heating elements I just stack up various boards and boxes. For this test I am trying out 1/8” acrylic sheet with about a 3-inch spacing from the bottom of the heater face.

Wing Leading Edge Profile: To make the profile for bending the lens I started with a cardboard cutout of the Cruiser wing leading edge. After several iterations of fitting, tracing the profile and trimming, a good fit (not necessarily perfect) was made for the leading-edge curvature.

The cutout was traced onto pieces of 1/2” plywood and three forms were cut, and edges sanded. These were screwed to a plywood backing plate that spans the length of the lens form. A piece of scrap sheet aluminum was then bent and folded around the leading-edge forms and tack nailed in place. The form was finished by placing a thin piece of cotton cloth (cut up old bed sheet) over the sheet metal (Figs.1 & 2).



Figure 1. Quartz infrared heater setup.



Figure 2. Forming block profile set at test height.

1/8" acrylic sheet was used after remembering to remove the plastic film protective coating! Thin acrylic sheet heats up very quickly, with the following *less than desirable* result (Figs.3 & 4).



Fig.3



Fig.4

The thin acrylic sheet was too close to the heating elements at about a 3" spacing (Fig.3) and gave the resulting bubble or boiling effect (Fig.4)! Nothing happened for the first 2 minutes, then bubbles almost instantly appeared. However, the acrylic sheet did slump over the form quickly after the bubbles started and before I could remove it.

The next step was to place the form to one side and heat a test piece on a flat surface with more distance between the overhead heating elements and the acrylic sheet, a distance of 10 inches was used. A test piece was heated by sliding it back and forth on a flat surface to try and achieve even heating, once soft and pliable, which took 4 minutes, it was draped over the forming block and pressed by hand around the block (Fig.5). This worked reasonably well, and the same technique was used for the full-size to slightly over-sized lens at 11" long by 8 1/4" wide. The result was only moderately successful; corners tended to warp upwards but, they could be pressed

back down with careful re-heating and hand pressure to (Fig.6). The outer edges can also be trimmed back about half an inch all around for the final size.

This is a start and certainly, more testing and practice is required before a true fit to the wing leading profile can be made.

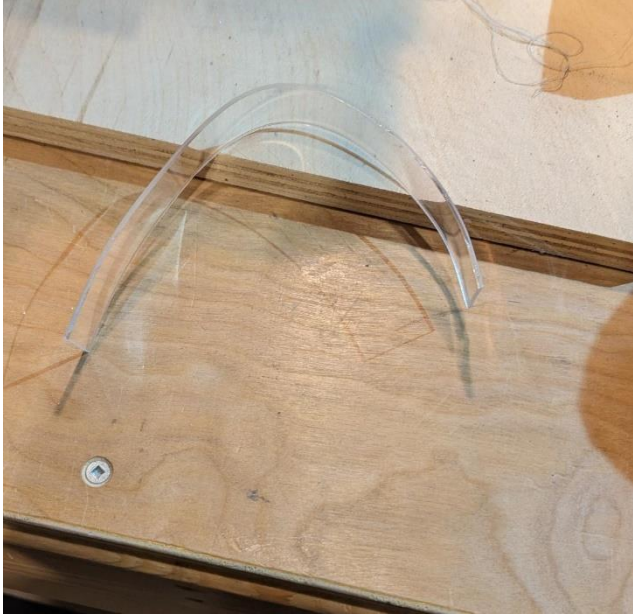


Figure 5. Test piece heated and formed.

Figure 6. Full size lens ready for trimming.

Footnote: It is highly advisable to wear insulating gloves and that they be clean!

EAA VMC Club – Mark Briggs



EAA VMC Club

Question of the Month

This Month's Question:

What is the difference between torque and P-factor?

The answer will be provided for discussion at the April meeting.

Mark

The Ugly Seamstress (or how I made the seats for my Bearhawk) – Mark Richardson 4 place Bearhawk

Those of us who are building (or have built) an airplane know that there is a lot to learn over and above being a pilot. Leaving aside manual skills, we need to learn about the rules and regulations for building and licensing, avionics and electrical design, AC-43.13B contents and how to actually do ... stuff ... correctly, it's the manual skills that are the bread and butter of aircraft building and the most fun.

With all models of the Bearhawk you need to learn how to rivet (both solid and pop), work metal (bending, forming, filing, etc), do fabric covering, run cables, install the engine, fit and prep fibreglass, cut, trim, and fit plexiglass, and a plethora of other detailed skills. If you are brave (stupid?) enough and decide to scratch build, you also need to learn to weld, operate metals shears and brakes, build and align jigs, and so on. There are lots and lots of jobs and skills you will learn by building an airplane.

A couple of the jobs that are often farmed out to the pros are aircraft painting and seat upholstery. I had already learned to paint an airplane when I built my RV-8 20 years ago (Google C-GURV) so although I am using a completely different paint process this time (Stewart vice Imron), it wasn't totally new.

Which brings me to the purpose of this short article; how I upholstered my aircraft seats (your mileage may vary, batteries not included). I had considered (very seriously) just buying upholstered seats and carrying on. However, three things made me change my mind: 1) this would be a new skill that might be fun to learn, 2) I'm now retired so I have time, and 3) OMG it is expensive to have seats professionally done! I won't lie, I found this the most challenging thing to learn yet. But it was actually fun and I am, well, not richer, but certainly not poorer by hundreds of dollars by doing it myself.

I can't give a step by step how-to with measurements and detailed instructions otherwise this article would be book length. However, I will show a bunch of pictures with descriptions of what is happening and notes on things to think about and avoid. Yes, even you can learn to do this.

The Tools and Materials:

We have a 60-year-old Singer sewing machine that we bought fully restored a couple of years ago. No fancy computer features but it is indestructible and works great. You'll need pinking shears for the fabric, regular scissors for the foam, sewing clips, rulers, marking pens, paper/cardboard for templates, tape, spray contact cement and a work surface. I used an electric carving knife to carve up the foam for the seat parts.

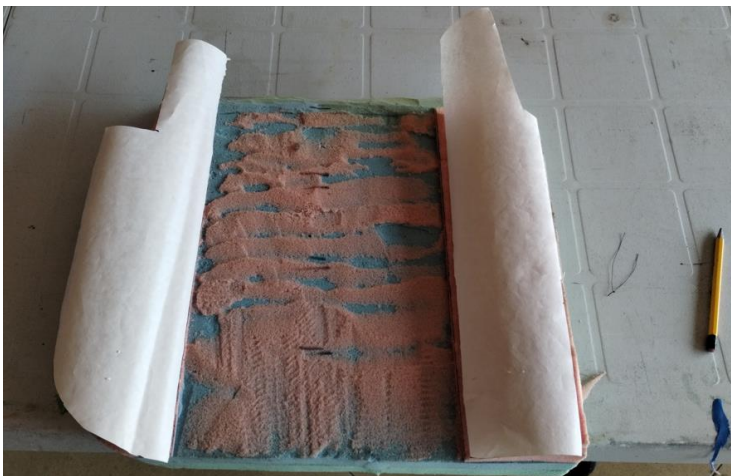


For the fabric I used RipStop because it is quite inexpensive, is super tough, it won't give me third degree burns on a sunny day like leather, and actually looks really good. You'll need some backing foam (1/2" or 1cm) that has a backing material on it, and foam for the seat bases and back. I got the Confor Foam seat bases from Aircraft Spruce for the front seat bases and used 2" firm upholstery foam for the rest.



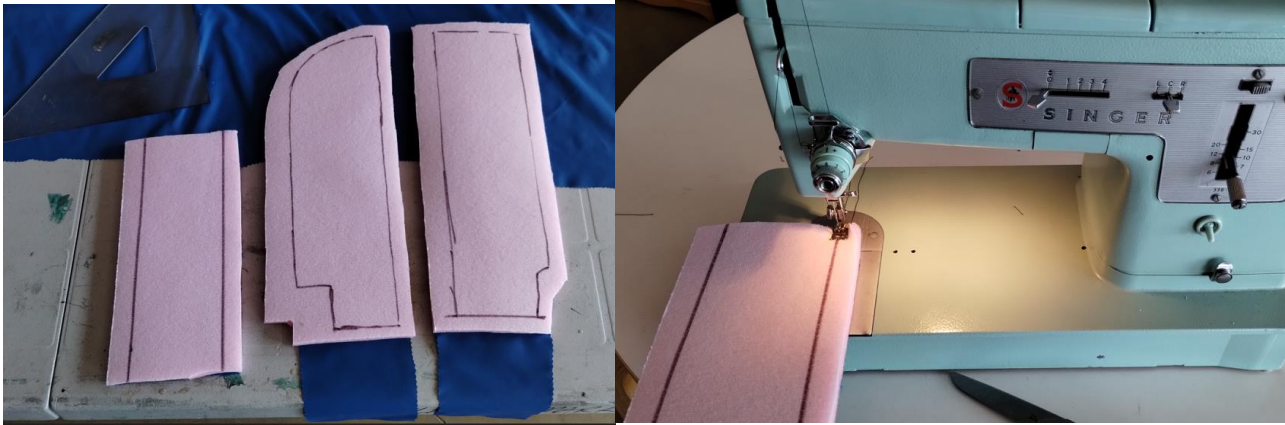
The Method:

I made templates out of paper and cardboard for the various components of the seat cushions that were then used to cut out the fabric, backing foam, and to lay out the sewing lines. After a LOT of trial and error (mostly error), I added 3/4" on all sides to my fabric and backing foam patterns and just snipped off the excess at the end.



Once the fabric pieces and backing foam were cut out, I used spray contact cement to apply the fabric to the foam (this is temporary to keep everything in place for initial sewing). I then used the paper template to mark on the back of the foam where I wanted to sew. Again, trial and error taught me to sew with the fabric side down as the feeder foot (or whatever it is called on the sewing machine) worked way better this way.





Once you get the various individual parts made you need to put them together. The trick is to overlay the existing sewn seams on the two sides such that when you sew the pieces together the seam disappears. Use LOTS of clamps.





I put an extra 2" of material where the fabric would wrap around the back of the seat so there is material to pull on to tighten the fabric then staple. I used 1/4" birch ply with lightening holes as the backing material and stapled the fabric to the ply. The ply is quite light, and since the RipStop weighs almost nothing, the seats are not at all heavy. I will use Velcro to attach the seat components to the actual seat frames.

I realize this is hardly a "this is how to do it" article, but I hope it is an encouragement to try it yourself the next time you need seats for your airplane. The most expensive part of the whole thing were the Confor Foam seat bottoms (\$200 CAN each!!). The rest was very inexpensive with the RipStop material < \$5/running yard. Our own Michel Roy is the one who inspired me to do this with the seats he made for his Bearhawk using RipStop and between looking at his pictures and watching a BUNCH of YouTube videos, I was able to produce these:



CLASSIFIEDS – Aircraft, Avionics & Parts

Does anyone have anything aviation related to list? Drop me a line at newsletter@eaa245.org or pwhittaker@bell.net to let me know and I will add your treasure to the classifieds listings.

1. From Ken Potter:

1977 Grumman AA5A Cheetah, C-GQIG. Airframe 2717 hr TT, engine 1203 hrs SMO, MoGas STC.

New panel and wiring in 2021 including dual Garmin G5's, JPI 830 engine monitor, Garmin GTX 327 transponder, Garmin GNS 530 WT nav/comm, Garmin SL30 radio and PMA 800B audio panel. Will be sold with a new Kannad Integra 406 ELT and fresh annual.

Asking \$ 80,000 Canadian

Contact Ken Potter 613 791 6267 or email kenpotter@veritasmarine.ca



2. From Mark Richardson (president@eaa245.org):

Take advantage of my impatience/short attention span on these items. I bought these for my Bearhawk build over the last 6-8 years. Some of the stuff I bought was used from guys on the VAF forums and all were working when removed. Other stuff is new. In all cases I bought this with the intention of keeping the cost down with older equipment but then I got distracted by shiny new stuff. SQUIRREL!

Two Garmin GDU 370 EFIS units. Each comes with the mounting ring that is riveted to your panel. No config module or any of the other LRUs. Just the displays. Currently these are going for about \$1500 USD each. \$2,500 CDN for the pair, or \$1,500 CDN each.

One Garmin GTX-23ES remote transponder/ADS-B with mount tray and back plate and Garmin connector. Used. New at Aircraft Spruce \$3,380 CDN. Asking \$1,500 CDN.

One Garmin SL-40 Comm with mounting tray. Used. Currently going for around \$1,300 USD. Asking \$1,000 CDN.

One INS-429 nav radio from VAL Avionics. Used.

- VOR, Localizer, Glide Slope and Marker receivers.
- Active and standby frequency with flip-flop.
- Milled billet aluminum construction.
- Digital OBS with push-button auto-radial centering and 180-degree reciprocal.

Comes with a custom harness from the RV-6 it came out of. New at Aircraft Spruce it is \$2,900 CDN. You can have it for \$750 CDN.

One pair of Aero-Lites PAR36 landing/taxi lights. New, in box. From Aero-Lites they are about \$280 USD. Asking \$200 CDN.

One RAM AV-569 DME antenna (bought to go with the INS-429 above). New in box. Currently \$265 CDN at Aircraft Spruce. Asking \$175 CDN.

One 2.5" Saber prop extension kit with the AN7-82 bolt kit (6). New, unused, in box. Vans wants \$725 USD for this set. You can have this one for \$600 CDN.

Pro-tip: don't buy your avionics (or any other expensive thingies) until the last possible moment. Now you know why.

3. From Irving Slone: Garmin GPS 3 Pilot with antenna and power cables. Power cable plugs into a cigarette lighter socket. Any reasonable offer considered. Contact Irving Slone if interested and for further details at islone@regionalgrou.com .

4. From Andre Beauchamp (contact at beauchamp701@gmail.com for prices):
Adel clamps



Flush Mount Hartwell H-5000 Latches



WHO WE ARE - Website: <https://chapters.eaa.org/EAA245>

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 at the Carp Airport (CYRP & 122.8), just west of Ottawa.

President: Mark Richardson- 613-983-7764 president@eaa245.org

Vice President: Mark Briggs - vice.president@eaa245.org

Treasurer / Marketing Manager: Ken Potter - 613-259-3242 treasurer@eaa245.org

Secretary: Mark Cianfaglione - 613-600-4501 secretary@eaa245.org

Operations: Chris Hepburn - ops@eaa245.org

Membership Coordinator: Phillip Johnson - 613-790-4929 membership@eaa245.org

Webmaster: Phillip Johnson – webmaster@eaa245.org

Newsletter Editor: Peter Whittaker – 778-919-4661 newsletter@eaa245.org

Technical Information Officer: Phillip Johnson – membership@eaa245.org

Young Eagles Coordinator: Andrew Henry - young.eagles@eaa245.org

Hangar Group Liaison: Bill Reed - 613-858-7333 Bill@ncf.ca

Past President: Phillip Johnson – 613-790-4929 membership@eaa245.org

Membership Application and Renewal Form



We have a “Google Group” for the EAA Chapter. If you are not familiar with Google Groups, it is a service from Google that provides discussion groups for people sharing common interests. If you would prefer NOT to be a member of the group, please tick the box in the membership application form when you renew your membership.

Application Date: _____

New: Renewal:

Name: _____

Street: _____

City/Town: _____

Province: _____

Post Code: _____

Email Address: _____

Home Phone: () _____

Mobile Phone: () _____

EAA Number: _____

EAA Expiry Date: _____

I do **NOT** wish to be part of the
EAA Google Group

Annual Dues: run from
January 1st to December 31st.

Associate Member: \$50

Full Member: \$100*

- Newsletter, hangar, workshop, tie-downs.

Note 1: Members must also be members of EAA’s parent body.

Note 2: On-Line E-Transfers to
Treasurer@eaa245.org are the preferred method of payment.

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