

- June 2024 -



One of the joys of having an amphibious plane is the opportunity to enjoy being on the water like a boater, only better! It also opens up the number of restaurants you can access with your plane. Most airport restaurants open for breakfast and lunch, but close for supper. I believe I have mentioned it before, but there is a restaurant near the bridge in Belwood that Lee and I have been to a few times. Belwood is also the location of some of the best butter tarts around. You can find them at the general store in Belwood, across from the aforementioned restaurant. Both are easily accessed from a boat dock at the Lion's Park in Belwood, if the lake water level is not too low. 'Searey at Sunset' - Dan

President's Message

I hope everyone is getting out to enjoy 2024, which has been great weather-wise so far. Flying has been pretty good and we now have one fly-in under our belts this summer. I have a few photos from Mac showing the fly-in at Tom and Deb Shupe's place.

Lee managed to get his Searey back in the air after some tricky brake issues, but those appear to be behind him now and we have even flown together a bit. Now I'm dealing with a header tank issue, but expect to be back in the air by next week. I have included an article about the improved fuel sight gauge I built while I am waiting for some welding to be done on the header tank mounting tabs. I outline how I emptied the header quickly and show a trick on how to repurpose a peanut butter jar.

To finish things off this month, I have included a story about my adventure the night of the awesome aurora borealis. It's not a flying story, but I think you will find it interesting and 'colourful' at least.

Be sure to check the schedule on the last page to get the fly-in dates into your calendar.

Roger is making great progress on the new hangars and they appear to be pretty much done now. If it wasn't so far from my place, I would certainly be considering one. They are large and the new ones have high doors, which would work well for my Highlander on floats. It is very, very tempting Roger...

2024 is going to be a great year for KWRAA.

- Dan

Improved Fuel Sight Gauge

When I built Aerial 2, I focused on improvements from Aerial One, including weight reduction, improved handling, better power to weight ratio and a few performance modifications. Overall, I was pleased with the result, and still am, but there were a number of smaller items I still want to improve.

My original sight gauge on the header tank had black sharpie marks that showed one litre graduations from 5 up to about 18. The bottom of the tank held about 5 litres before the fuel showed on the sight gauge, while the top holds another 5 litres beyond the top of the sight gauge. This provides a total of about 23 litres or just over an hour of flight in my big bore Rotax-powered Highlander.

Sight gauges are no doubt the most reliable means of knowing how much fuel you have on-board, but the materials used to create them are generally some form of plastic, such as polyethylene, polyurethane, polycarbonate, nylon, silicone, and others. All of them have a limited life span when exposed to gasoline and ethanol. One of the most common plastic polymers used for fuel lines is Tygon, available from Aircraft Spruce.

Tygon tubing is resistant to most inorganic chemicals and resistant to cracking and aging, however, it does dry out and become brittle and yellows over time. I generally replace mine every two years to ensure safe operation of the plane. The header tank is in the cargo area and subject to being bumped occasionally, so I think it's a good idea to make sure the sight gauge tubing stays somewhat flexible.

While doing a pre-flight check recently, I noticed a bit of staining around the draincock on the underside of the fuselage. I climbed inside the plane to inspect further and found that a couple of the header tank mounts had broken loose and the tank had dropped about 3/8 of an inch. This downward movement from the weight of the fuel in the tank, likely during my previous flight, was just enough to bend the drain tubing and tilt the valve slightly causing it to leak slowly, staining the fabric around the valve.

I drained the fuel from the plane by disconnecting the fuel supply line in the engine compartment, then used the fuel pump to pump the remaining fuel directly into a red high-density polyethylene (HDPE) gas can. I then used a peanut butter container with a specially modified lid to press the (SAF-AIR CAV-160 push-type) drain valve up to remove the last litre or so of fuel from the sump of the header tank. I have used this modified jar to drain the header for a few years now, so I'm ready to share this idea with you, knowing that it works quite well.



The hole in the top is just a little larger than the push-type draincock. There are two holes on each side that I drilled and strung safety wire tightly between. When pressed up against the drain valve, it opens the valve and drains the tank. Kraft Peanut Butter containers are made from polycarbonate, so they tolerate gasoline quite well. The 1 Kg. size jar will hold one litre of gasoline, which I dumped into the larger red poly gas can, being sure not to transfer any contaminants from the sump into the good gas.

I removed the header tank for repair. While the tabs are being repaired on the header tank, I am constructing an improved sight gauge for the tank. I replaced the Tygon, which had begun hardening a bit, then prepared an aluminum backing plate, to which I attached a red-line gauge, with fuel level markers at each litre, starting at the 5 litres mark. The red line will get wider when its reflected light gets refracted back through the fuel in the tubing.

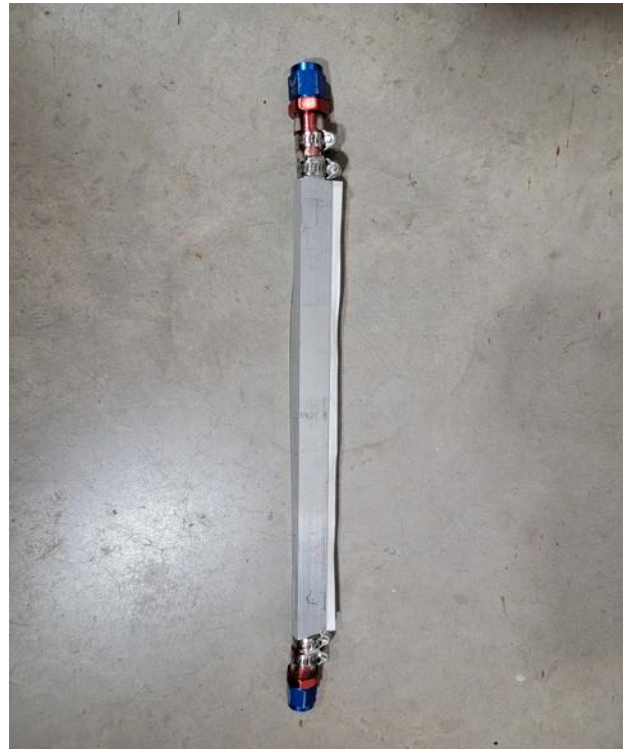
The Leading Edge

I cut the backing plate to create a small fastening tab at the top and at the bottom. I experimented with the idea of using diagonal lines, but settled on the red-line method for measuring fuel level. The gauge uses light refraction to show the difference between the refractive index of air and gasoline. I used small hose clamps to hold the gauge to the Tygon and aluminum backing plate as shown.



It took a little experimenting to get the new fuel level marks to line up with the ones on the old fuel line that I had carefully marked with a sharpie marker when I built the plane, but I played with the font sizes and line thickness until I achieved the effect I wanted. I laminated the paper gauge that I had printed on the computer printer, with a few layers of packing tape, being careful not to get wrinkles in the tape. I then cut it to size and double-face-taped the gauge strip to the aluminum backing plate, which was made from a short length of angle stock on which I had trimmed one side.

Here is a photo from the back, showing the aluminum backing plate and hose clamps. It would have been just a little bit better if the backing plate was a little wider so the paper strip didn't show from the back. No one sees the back anyway, so it's fair game.



A close up of the tab mounts on the backing plate shows how I clamped it to the tubing after wrapping it in clear tape to reduce galvanic corrosion. It should do the trick nicely.



I'll keep you posted as to how it works out when I reinstall the repaired header tank. - Dan

Streiking Through the Countryside

Well, streamers might be a better description, I suppose. After the amazing solar eclipse of 2024, we were treated to another spectacle soon after.

I have many unusual icons on the desktop of my personal laptop computer, one of which is the Space Weather website. The icon links to <https://www.spaceweather.gov/communities/aurora-dashboard-experimental>

I generally check it every day as part of my routine, but imagine my surprise to see that most of the solar activity metrics had changed from green to reds and oranges, indicating that there was intense solar activity happening. I sent the info off to a few friends and relatives letting them know about the high probability of intense auroras within the next few days.

That evening, the news broadcasters started to confirm what I already knew. The scientists, ham operators, and weather nerds watching the solar activity promised great things for the following night and maybe beyond.

Chris and I watched with great curiosity, since she had never seen the Aurora Borealis in person. The following evening, as the news forecasts hyped-up the size and intensity of the event, we planned to step outside to check them out. Shortly after midnight, our interest piqued as the show intensified enough to see the streamers within the city limits, in spite of the street lights and other light pollution.



I said to Chris, "We have to take a drive out into the country away from the lights... it's going to be incredible!"

I assessed the options and felt that the best viewing away from the lights would be west of KW. Anything to the east would be subject to the lights of Guelph, Halton and Milton. To the North, we would have to travel beyond Maryhill, Winterborne, Elmira, and St. Jacobs to get clear of most of the light pollution. South was worse!

We started out near Petersburg and took a few great photos, but the constant stream of vehicles, with their bright lights created a major issue with our photos and especially with our night vision. I was able to use the light from a passing car to light up the sign in this aurora photo.



We continued to drive north and west until we reached a relatively quiet country road near St. Agatha. The aurora was intensifying as we located a wide driveway into a field, where we were able to park and leave the car for a while to capture some photos. This one is looking East toward the glow of Kitchener-Waterloo.



The Leading Edge

While aurora watching, a car pulled up on the road about 100 yards ahead of us facing toward us; almost blinding us with their headlights. Realizing they were not moving along, I went over to ask that they relocate due to the blinding lights. The driver hadn't seen us and didn't realize there was a great parking spot just ahead. I offered for the driver to park with us and enjoy the views from there.



As it turned out, the driver was a young lady from Kitchener who had travelled the world to capture aurora photos. Cathy, was ready to call it a night when we all began capturing great photos together. I even used her as a foreground item of interest in a few photos as shown here.



Overhead we had a constant display of varying colour and patterns as the charged particles of the solar winds ripped through the ionosphere, exciting electrons in the oxygen and nitrogen of the upper atmosphere producing red and green streamers of light in the process.



When we weren't getting burst patterns above, we were getting outbursts of red within a palate of green streaks and occasional fluffy white clouds that served as contrasting background for the reddish-purple hues.



In spite of the constant show above, it appeared that the best light show of the night was off to the north and west.



The Leading Edge

We had the yellow-orange glow of the city lights of Stratford, low on the horizon adding a nice touch to our photos.



The low clouds to the west actually made our photos more interesting and gave some perspective to the immense size of what we were observing.



We generally try to use trees or something else to give that perspective and interest in our photos.

As I mentioned the view was generally best to the West and North, but we were often redirected to other parts of the sky as the aurora moved about the entire observable hemisphere.



It was a long, but beautiful night, sharing this wonder of the natural world and reflecting on the beauty created by solar winds hitting the magnetic shield of the earth in the ionosphere, without which would have exposed all of us to deadly solar radiation. Life here is a delicate balance making us all natural wonders when you think about it.



I really enjoyed my time observing the aurora, spending time with my wife outside on a cool spring evening and chatting with Cathy about her experience chasing auroras in Iceland and Norway. It was very surprising to find out that these were the best views she had ever had in all of her adventures abroad and in Canada's north. And to think, she was about to head home when we met her. She even commented about how happy she was to have stopped where she did and met us.

As I mentioned earlier, Chris had never seen an aurora before, so this was certainly an awesome one to have as her first!

The Leading Edge

The stunning views continued for several hours, and likely until daybreak. Chris and I reluctantly headed home after 4 a.m., but not before capturing well over 200 photos between the two of us.

Needless to say, although I enjoyed the aurora, Chris really embraced it!



Incidentally, I shot a second one, lighting Chris up with a flashlight to get a different effect, but the shorter exposure muted the northern lights.



I know this isn't an aviation story, but my hope is that next time there's an aurora, you get out to experience it. We are at a sunspot maximum this year, so expect more opportunities to see auroras this summer and autumn.

- Dan

CDF6 Improvements

On June 3rd, I flew up to Damascus to give Lee a hand finishing up his brake repair and conduct a revised weight and balance on his Searey. We managed to get in a short trip to Belwood Lake to do a few water circuits and grab supper and butter tarts for dessert!

The new hangars are looking great now with all of the exterior work completed and roll-up doors like the previous hangars have. These are a great way to keep out the weather and our feathered aviation friends. The hangar rents are in line with the 'T' hangar rental rates in Guelph, so they are a good investment to protect your plane. The new hangars have higher doors and are ideal for taller aircraft and those on amphibious floats.

The new hangars are currently being wired for 120 VAC to provide lighting and hydro outlets.

I think it bears repeating that in these days when so many small aerodromes are being sold off by municipalities and grass strips being

gobbled up by farm land, it's great to see someone is looking out for local pilots.

Roger is building a great little aviation community at his property near Damascus.

Thank you, Roger!



(Lee Coulman Photo)

KWRRA Fly-in at Tom Shupe's Place

In spite of a number of members of KWRRA being away or out of commission due to injuries and other issues, the turnout of aircraft at Tom and Deb Shupe's place was reasonably good.

I almost didn't make it myself due to maintenance issues. I had belts showing on one of my front amphib tires, but managed to pick up two new tires at Spruce on Friday and installed them back on the plane on Saturday morning in time to leave for the fly-in.

We ended up with more friends of KWRRA than KWRRA members. That said, we had 6 planes at the fly-in.

BBQ Master Mike did his thing and a great meal was had by all. Tom and Deb were great hosts as always and the hangar provided a great space for visiting and eating. Merle's kids filled the apron with interesting chalk drawings and played some games.



(Mac McCulloch photos)



Upcoming Events in 2024:

- *Highlighted lines are KWRAA Events (fly-in or drive-in). Bolded Lines are KWRAA Fly-ins**
- *Fly-in Data Sheets are available on the KWRAA website at www.kwraa.net*

June 16	-	COPA Flight 1 - Guelph: Shiny Side Up Father's Day Fly-In
June 19	-	COPA Flight 148 - Brantford: Fly-In & BBQ at CYFD
July 6	-	KWRAA Fly-In at Largo Woods (CLW6) Cam and David Wood
July 13	-	Train, Planes & Automobiles – Midland (CYEE)
July 22 - July 28	-	Oshkosh Air Venture 2024
August 3	-	KWRAA Fly-In at Fergus Holyoake Field (CPY9) Wilf Holyoake
August 10	-	Soar 24 – Sarnia (CZSR)
August 17	-	UPAC Fly-in 2024 (No convention this year. See message below.)
August 31	-	KWRAA Fly-in at Damascus Field Fly-in (CDF6) Roger Deming
September 19	-	KWRAA Monthly Meeting – Cadet Youth Dev. Centre at CYKF
October 17	-	KWRAA Monthly Meeting – Cadet Youth Dev. Centre at CYKF
November 21	-	KWRAA Monthly Meeting – Cadet Youth Dev. Centre at CYKF
November 29	-	KWRAA Christmas Party – (date to be confirmed)

KWRAA monthly meetings will be on the **third** Thursday night of each month this year unless we hear otherwise from the Cadet Youth Development staff, since we are using their building and working around their schedule for our KWRAA meetings.

Message about UPAC from Gord Baxter,,,

Kathy Lubitz says that after 22 years they have decided to cut back and "simplify" the convention. It will only be one day, Saturday Aug. 17th., and will be more of a general fly-in. She goes on to say there will be no formal exhibits or exhibitors this year. There may be a couple of seminars... yet to be determined. There will be NO rain date. The Cafe will be open for breakfast and lunch on that day.

KWRAA Executive Contact Information:

Due to an increase in spam emails, please reach out to me directly for the latest contact information for the KWRAA Executive members. Thank you, Dan Oldridge (519) 651-0651.

UPDATE: Butter Tarts in Belwood

I mentioned butter tarts on the front page of the newsletter, so I asked Lee for a photo of our outing there to include in this issue.

The Country Market has a good selection of different flavours. At \$2.50 each, they are not cheap, but they are very good, selling over 150,000 tarts each year. Here, we have raspberry/coconut, blueberry/white chocolate, and of course classic raisin butter tarts.

Having a seaplane is a bonus that allows easy access from Belwood Lake near the bridge over the narrows. For landlubbers and Sunday drivers, it's on George Street in Belwood.

