

- November 2023 -



October 28, 2023 was a windy day to be out flying, but there are hidden perks to flying in the wind. There were very few other small aircraft out that day, and the atmosphere was exceptionally clear of any pollution or moisture. The photo above was taken just south of Guelph near Highway 401. I used Foreflight to measure the distance to the CN Tower and downtown Toronto, which were about 70 km away. Now, if I could just get rid of the blurring from all the wind turbulence jostling me around... 😊

President's Message

With another great float flying season behind me, I look back and realize that I managed to sneak in almost 100 hours of flying in 2023... and it's not over yet! I switched back to my bush wheels and hope to keep flying for most of November if all goes well.

Most of October was great for flying often with warmer than normal temperatures. The fall colours were spectacular in many places in Ontario this fall and muted in others, but a treat to see from above, none the less.

Lee and I had a couple more Fall Colours flying adventures in October, so you will find a few photos and story in this issue.

I have included another short update on my Aerial One rebuild project. I have been able to get a few of the interior components done and

rebuilt a number of the interior cover panels with lighter aluminum in an effort to lighten up the plane as much as possible.

You will also find a short update on the Aireon ADS-B situation. There will be more next month showing a little more detail and analysis on where we stand with educating NC and TC on what works for GA pilots.

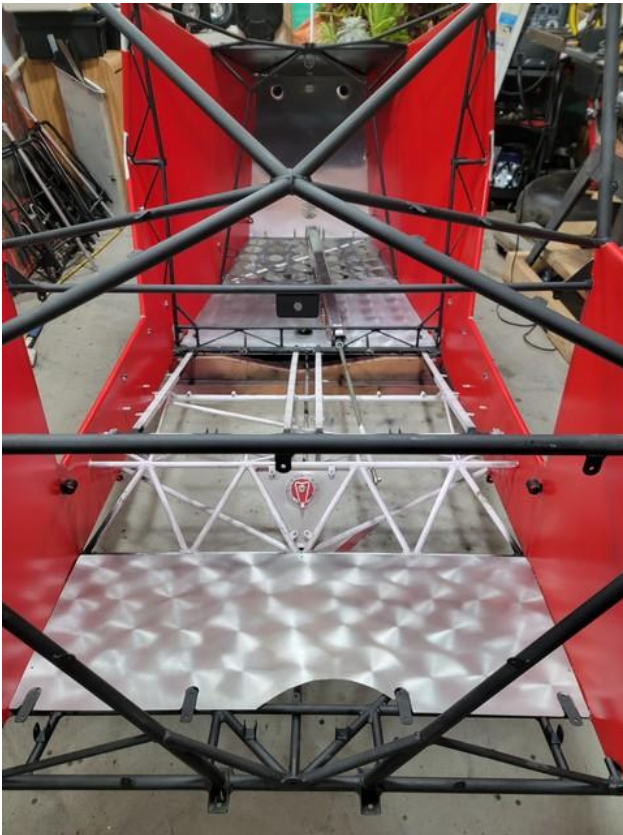
Two reminders this month: November is election month at KWRAA and second, pilot recency is becoming an issue given the latest Transport Canada information. We will do our best to sort that out before the January meeting.

2024 is going to be a great year for KWRAA.

- Dan

Aerial One Rebuild Update

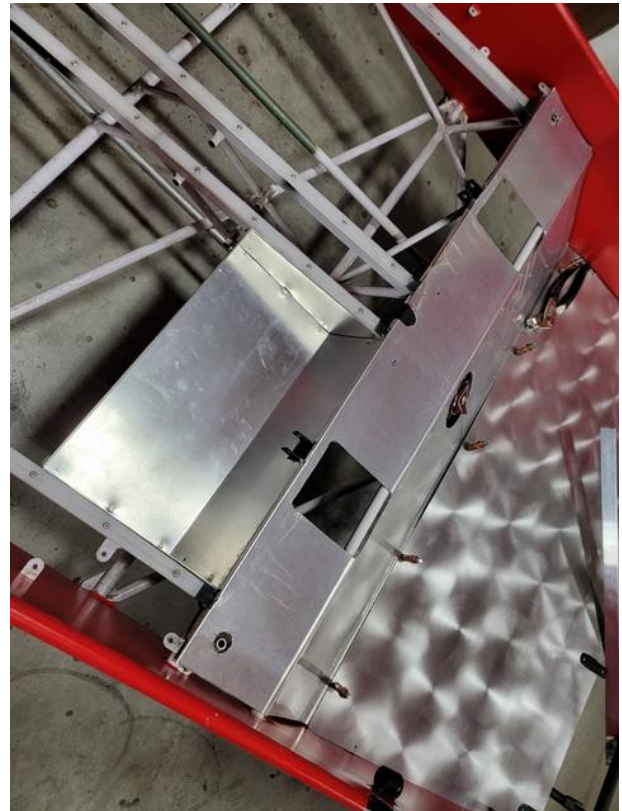
With the interior fabric installed now, I was able to fabricate and fit the floor panels for the front and rear of the plane. I installed 0.040 at the front of the cargo area since it takes the most abuse and gives me some extra support there when loading and unloading cargo. I planned to put 0.020 aluminum in the rear half, which would be sufficient to handle any of the light weight "stuff" that I may place back there. I generally reserve the back half for the light weight stuff like sleeping bags, pillows, pup tent, loose clothing like jackets or bug suits, as well as a spare set of clothes and dry socks, etc. in a watertight bag.



Instead, I use the 0.040 material I already had, but punched out an array of 2.25" and 3.125" holes using a panel punch, avoiding the areas directly over the support tubes. I plan on covering the back half with red or black Oratex fabric to cover the holes without adding significant weight. This worked very well on Aerial 2, so why try to re-invent a different way to cover it... right?

The rear panel in the cargo area takes little to no abuse, so I used 0.016 aluminum to minimize weight. The front floor panel in the cabin area is also 0.020 aluminum that I put a random swirl pattern into with a Scotch-Brite pad mounted on a cordless drill.

Next, I looked at replacing all of the covers I had fabricated for Aerial One about ten years ago and replaced them all with lighter gauge material. The originals were 0.032 that I had covered with black coloured marine grade vinyl. Since the new ones are just 0.016 aluminum with no covering, they are less than half the weight.



I did the same for the elevator push rod cover, the mixer cover and the under-seat trays that I use to carry a few tools, check-sheets and in-flight snacks (granola bars and lifesaver mints). All of those items were also originally covered with black marine-grade vinyl in order to look like the leather or luxury vinyl found in most fire trucks. The black Oratex I used in Aerial 2 also creates a similar effect without the weight penalty. I may look at a similar finish for the Aerial One rebuild or maybe just leave them.

The Leading Edge



When I replaced the seat rails and rebuilt the seat pans, I copied many of the same ideas I had used in Aerial 2. The seat pans are pinched with an array of holes, again avoiding the support tube areas and fastening points. I plan on covering them with Oratex too, since it makes for a very light assembly.

I installed one of the side tubes that guide the rudder cables down the inside of the cabin and cargo area and quickly realized that a white tube was not going to cut it with my colour choices for the plane.



I ordered some black tubing to replace it with, but realized as soon as it arrived that the tubing was curled up fairly tightly into a coil that required a lot of heating and finessing to straighten out before I installed it. I am quite pleased with the result and believe it ties in quite nicely with the colour scheme, disappearing rather than standing out.



I am anxious to get going on the exterior fabric of Aerial One, but there are still a number of interior parts to install beforehand, such as the fuel lines, pulleys, ELT tray and antenna, as well as test fitting a few other parts that will be difficult to access once the bottom fabric is in place.

I am also really looking forward to having windows that open again too. The 'new' design that Just Aircraft uses for the Highlander doors and windows saves weight and I'm sure it's just another item hit by shrinkflation as they look for ways to reduce production costs on their kits, but it just doesn't work well for photos and the doors can't be opened in flight easily. I used to fly Aerial One with the windows open most of the time... in the summer, at least.

We have a bit of personal stuff happening in November, so progress on the rebuild may slow up a bit, but I am still planning to try to keep up some momentum. Like most other things in life, Newton's First Law of Motion has a major influence on what we do... once we slow down, or stop, it's hard to get moving again. Keeping up the inertia takes less work than trying to get moving and up to speed again.

I am trying to put together a list of small tasks that I can work on this month that will save me some time in the future as I try to complete the rebuild before the end of the 2024 flying season.

- Dan

More Fall Flying...

Fluffy clouds and mostly blue skies... what more could a pilot ask for? Maybe some smooth cool air and some fall colours would help the situation. October can be unpredictable for weather, but when it's good, it's generally very good.

Not only are the fall colours out for pilots to enjoy, many of the farm crops have been harvested creating emergency runways almost everywhere you look.



Lee and I took a couple of opportunities to enjoy the October flying, if only locally this time. One of our trips took us over to Pike Lake in the Mount Forest area. The middle of October brought us some very warm temperatures and provided us with some great photos of the fall colours and great visibility at times, although other days did not move past marginal VFR conditions.



Our trip over to Pike Lake meant we had to overfly Mike Thorp's place. Mike is quick to get out his portable aviation radio to say "hello" when someone he knows passes overhead. When I overfly his place, I keep thinking that I could likely drop in to his place with 3 notches of flaps, but getting out over the trees would likely pose quite a challenge.



Lee has a trailer at Pike Lake and likes to drop in occasionally with the Searey. The lake is plenty long for most LSA sized seaplanes. On this one particular occasion, we did a few "splashes" on the lake. Splash is a term the Searey pilots use to describe a touch and go or a quick stop and go on the water.



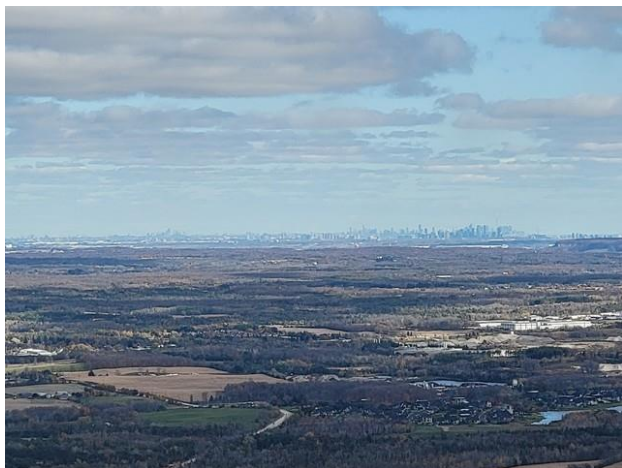
The trailers are located on the west side of Pike Lake, but the south end looks more like a remote lake with little development and beautiful wood lots on much of the east side.

The Leading Edge



After departing Pike Lake, we headed back to Damascus where I did a couple of “Stop and Go’s” before departing back to Puslinch via Guelph Airpark.

The air was a little bumpy from the cool and moderately brisk northwest wind, but it was so clear I could easily see the Toronto skyline from 70 km. away. I believe it was probably the clearest day I have seen while flying in all of 2023.



This is the photo I extracted the zoomed-in shot from for the front of this issue.

As I approached Ken’s airstrip in Puslinch, I could see that many of the leaves around the lake were still on the trees, displaying their fall colours, albeit less of them.

Ken’s airstrip, which has been operating since the early 1980’s is shown just to the right and slightly above the centre of this photo. The large house in the middle of the photo with the long laneway is Justin and Hailey Beiber’s

place. This makes for an interesting sight every time I take off to the south or land from the south at Ken’s, but no... I have never seen them outside. They must have some good grounds keepers because the place is always immaculate.



Ken has a beautiful spot on Puslinch Lake with a large hangar and waterfront that allows him to keep a couple of seaplanes too. Needless to say, I keep hoping that I win the Lotto so I can buy his place someday. Anyway, it’s great to have the opportunity to keep my Highlander tied down at Ken’s strip since it’s so close to home and a very quiet place to operate from. Occasionally, there are a few planes from CYKF in the area over the lake or a few gliders to the southeast over Rockton.

Reid’s Field is just a couple of miles to the northeast, but I don’t think anyone has operated out of there in over a decade; at least I have never seen any aircraft there, which is such a pity, given the paved 3500’ strip. Reid’s Field was available for sale last year, but they wanted about \$7,000,000 for it.

Anyway, with personal commitments in November, my flying may be curtailed a bit, but there’s always next year... right?

ADS-B Update November 2023

Here are some excerpts from Lee's ADS-B presentation at the October meeting. It highlights some of the proven issues with Aireon and provides some direction for possible solutions to the issues found.

Impaired performance in Southern Ontario

Lee and Don ran a number of PAPR reports on my plane and several others in an effort to determine if and where the problems are with Aireon coverage.

- *Separation minima on the ATC displays is based upon an update rate of 5 seconds or less as defined by ICAO in PANs/RAC 4444,*
- *(Furthermore, 2.5 seconds is required for some parallel approaches.)*
- *This is the reason why we see the "PUI-5 seconds" in the PAPR to indicate the percentage of targets that met the 5 second update interval. In my view, this is the key parameter that must be met in the terminal environment. In the terminal radar environment this is met with a ground station antenna rotation rate of at least 12 rpm.*

Lee showed a number of PAPR reports from the system and detailed the results for us.

Virtually every report generated by Nav Canada on the Aireon system exceeds this figure and often exceeds it by a large margin. The result is a very high failure rate.

Summary:

- *AIREON is an amazing resource for tracking flights from takeoff to landing.*
- *It has worldwide coverage*
- *It appears to be a wonderful tool for ATC traffic flow control*

BUT IT HAS SERIOUS LIMITATIONS:

- *It has a target update rate that is not suitable for Terminal Airspaces.*
- *PAPR reports show high failure rates in Southern Ontario where clutter is highest*
- *It requires extensive and expensive changes to aircraft to equip.*

- *It is not compatible with the FAA 2020 Mandate*

- *Does not provide any services or incentives to GA.*

Lee and I have been saying for several years that Aireon cannot meet the needs of GA and apparently, it's not meeting Nav Canada's expectations either, although they will not formally admit it. This is most likely due to the large investment in Aireon space-based technology without investing in any ground-based redundancy as we suggested in 2018 at the YYZ conference.

It appears Nav Canada may be silently backtracking a bit as witnessed by what they are not telling us.

What Nav Canada Hasn't told us?

If we try filling in between the lines of the official Nav Canada party line we can see...

- *They bought 10 Terminal Surveillance Radar Systems (from Leonardo). Why do they need these if Aireon is THE solution?*
- *Why did they buy from a foreign supplier?*
- *They bought 10 SSR Interrogators from Raytheon U.K. Don't the new one's work?*
- *They have not provided a performance report on Aireon and what it can or cannot do?*
- *They have not provided installation guidelines for affordable installations*
- *Nothing in the 2022 annual report about ANY problems with the Aireon "plan".*
- *In fact, they describe equipage as "edging closer to 100 percent"*
- *NO INCENTIVE\$ to INSTALL – YOU PAY FOR EVERYTHING including inflight weather and data through third parties. How is NavCan improving FIS data to aircraft?*

Nav Canada is experimenting with one of the CIFIB transmitters, so we are hopeful that someone there will eventually realize that UAT is the only way to provide GA pilots with the TIS-B and FIS-B flight safety features we want and need.

Pilot Recency Training

(2-year Requirement)

Since the changes at Transport Canada last year, there is some confusion about how to meet the 2-year recurrent training requirement. Many of the training sessions previously available seem to have vanished this year, leaving few options. Here is the information available from TC on the subject.

https://tc.canada.ca/sites/default/files/migrated/tc_2228_37_en_how_to_stay_current.pdf

Unless you plan on obtaining an endorsement this year, it appears the self-paced study program may be the best option currently. I don't know yet if Fred's safety seminar will be approved again in 2024, but I will find out before January or February when we traditionally bring him in to assist with the recency training. If not, maybe we can conduct a study session where we assist each other with completing the self-paced program.

More to follow on the recency training topic in the next issue.

Under Cover at the October Meeting...

I did a short covering demo at the October meeting, but likely left many questions unanswered. I kind of skimmed over the Stewarts system without even showing how easy it is to apply... other than the water-based latex glue. There are numerous videos available on youtube showing various tips and techniques for both the Stewarts and Oratex covering systems.

I have used both and like both, but the Oratex is a little easier overall since it's pre-coloured. Like other things in life, you have to pay more for convenience (of not painting). The time savings is a major benefit too!



October Meeting Pictures from L. Coulman

I also demonstrated how the Oratex system can take considerable abuse. I hit the fabric hard several times and removed the dent quickly and easily using only the temperature-controlled heat gun.

If ease of application and reasonable price are the main considerations, Stewarts is your best

option. If not having to paint and light weight are your main consideration, I personally believe that Oratex is by far your best choice, but you will pay a premium for the light weight Oratex system. If you are building anything heavier than an ultralight, be sure to use Oratex 6000, not 600, it's much stronger!

Either way, if you are covering your plane, it means you have reached an important milestone in your project when it really starts to look like a plane, not a project... congratulations on getting this far!



The Leading Edge

Upcoming Events in 2024:

- *Highlighted lines are KWRAA Events**
- *Bolded Lines are KWRAA Fly-ins* (More details on fly-ins coming in the new year.)*
- *Fly-in Data Sheets are available on the KWRAA website at www.kwraa.net*

January 18	-	KWRAA Monthly Meeting – Cadet Youth Dev. Centre at CYKF
February 15	-	KWRAA Monthly Meeting – Cadet Youth Dev. Centre at CYKF
March 21	-	KWRAA Monthly Meeting – Cadet Youth Dev. Centre at CYKF
Mar 28-Apr 2	-	Sun-n-Fun 2023
April 18	-	KWRAA Monthly Meeting – Cadet Youth Dev. Centre at CYKF
May 16	-	KWRAA Monthly Meeting – Cadet Youth Dev. Centre at CYKF
June	-	KWRAA Fly-Ins - TBD
July	-	KWRAA Fly-Ins - TBD
July 24-July 30	-	Oshkosh Air Venture 2023
August	-	KWRAA Fly-Ins - TBD
August 18-20	-	UPAC Convention 2023
August 31	-	Damascus Field Fly-in CDF6 - (date to be confirmed)
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 – Runways Café at CYKF

* KWRAA events are fly-in and/or drive-in.

KWRAA monthly meetings will be on the **third Thursday night of each month** next 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.

If you know of other aviation events in Southern Ontario advise me and I will append the list.

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.

Remember November is KWRAA election month. Consider taking on an executive role or offering to assist a current executive member if they continue in their position next year.

Remember too, that the **KWRAA Christmas Party** is coming up on December the 8th this year! Contact Mac at macpat@live.ca if you haven't arranged for your place at the table in Runways Café at CYKF. \$40 pp plus taxes and tip to be paid at the party. Let Mac know if you want chicken or beef and apple pie or cheesecake. It's always a great event and good meal!