

- September 2019 -



We couldn't have asked for better weather for the final KWRAA fly-in of 2019! Not only did we have a great turnout from members and friends, many of them flew in to check out Roger Deming's airstrip and new hangars... and of course to join in on the camaraderie and commune with other pilots and builders over a barbeque lunch. There are three more planes tucked in behind the ones lined up in this photo and a couple that were in hangars at Roger's.

President's Message

With all of the KWRAA fly-ins and most of the other aviation events over now for the year, some of us will now focus our time on enjoying what we can of the last couple of months of flying in 2019. Fall can be very unpredictable from day to day, so we have to enjoy those blue sky days when we get an opportunity. Sometimes we can even see several nice days in a row, making longer trips possible and as the autumn colours emerge, there is nothing like seeing the blanket of foliage from 1000 feet up.

Others will reflect on events this past year and focus on our projects in an attempt to be ready next season... or as soon as humanly possible anyway. Whether we are building or rebuilding, time working on our project aircraft is not just time well spent, it's like medicine for the soul as we work towards our dream of flying a plane that we built with our own hands and minds.

2019 was not a good year for some of us as the chapter seemed to be plagued with a number of

incidents and accidents, but luckily we are all still on the right side of the grass and will fly again next year. I will try to focus a bit on this aspect of things in the next newsletter, but for now, let's stay positive and take a look back at some of the great events from the last month or two. I have included a couple of photos from Aviation Fun Day and a few from Roger Deming's fly-in at Damascus.

Lee was trapped in a bit of weather last month and brings us a story about what happened when he got caught with his briefs down and reflects on his decision to install ADS-B in his Searey. Was it a wise decision? Read on and find out...

In spite of a few member aircraft incidents...

2019 is another great year for KWRAA.

- Dan

Caught with my Weather Briefs Down

The weather was looking good on my way to the airport, but apparently, sometimes you need to look behind you. The “plan” was for a 15 minute flight to overfly Mt. Forest, Ontario prior to the fireworks festival. Well, there were fireworks, but they weren’t from combustibles. And that 15 minute flight was much more than that.

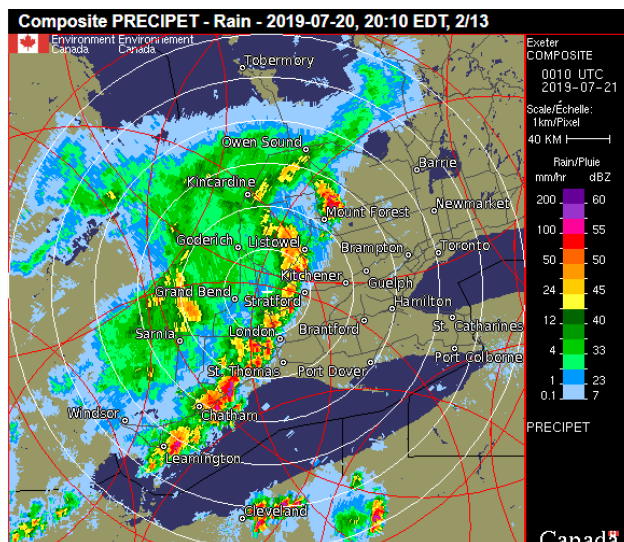
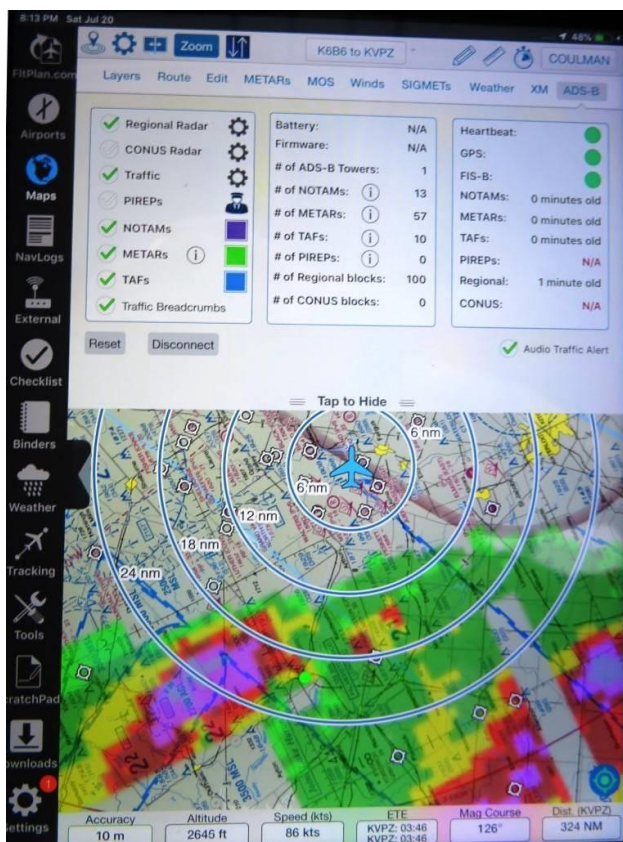
Why check the weather? You’re not going very far and there weren’t any warnings on the radio. When I finally looked to the west at the airport, it wasn’t too dark or too threatening but checking my phone FltPinGO EFB app and yes there were thunderstorms. They looked isolated and “maybe” not coming too fast. The TAF for Waterloo (CYKF) had a low risk of thunderstorms. But, there was a little shower so I pushed the aircraft back in the hangar. OK, “we’re good for a short flight”. What more did I need to make a decision?

The takeoff was uneventful with a few dark spots to the west. Listening to the Waterloo ATIS, conditions weren’t of concern, but I decided that going west was not a good option.

I checked my phone app but it had decided not to work in the air. Actually, my CEL phone often gets confused in the air, so I landed at Belwood Lake 12nm to the south.

Technically, “*I alighted on the lake*” with my Searey amphibian but even “walking on water” didn’t seem to help the CEL app. One choice was to ride out the storm on the water, done that before, but I really only had 15 mins, and there wasn’t much daylight left. The Waterloo ATIS was now broadcasting “SIGMET Alpha 1”. What did that mean? Significant Meteorological (SIGMET) reports are complicated and usually describe a problem area in confusing words often reverting to LAT and LONG. Where would I get an explanation? The closest RCO I guess was Palmerston (122.375) but I didn’t feel I had the time to get an in-flight briefing. Clearly, I needed to get somewhere safe. Where was safe?

Surprisingly, my ADS-B system was working, picking up weather from the US when I was above 2600 MSL. This was a welcome surprise as most pilots only get reception above 3000. Even more of revelation was the detail and quality of the radar display. The display even seemed better than the AWWWS data! (It also would appear that the red circles on the AWWWS show the overlapping coverage from US radars.) I’m sure that the intensity of the storm made this more visible to these US NEXRAD radars.



The Leading Edge

Notice the PURPLE painted in the middle of some of the red blotches. Too bad the SIGMET A1 wasn't on the broadcast cycle because it's Canadian, but US SIGMETs are available on a 5 minute interval on ADS-B and best of all, should show up graphically on the EFB app.



The good (ADS-B), the bad (what is ahead) and the ugly (what it could have been)

It was time to make a decision. Could I make it back up north to my hangar? I started north but with only 6 miles to go I noticed a "hole" but when I looked at the radar display it started looking more like a "sucker hole". It is important to note that the radar display could be delayed by up to 15 mins. My trust level was eroding so I wasn't going to make decisions based upon a dynamically changing picture. It was time to land and pick a friendly airport before things got worse. My EFIS (Dynon D10A) was indicating the wind speeds were now increasing from 12 mph to 33 mph. I decided to head for Fergus-Jergenson (CPG7), which had some amount of crosswind. I made a turn straight to final after checking the ATF (123.4)... lots of turbulence but I was on the ground, just in time.

Parked in the lee of the hangar as the storm was rolling in, showing its real nature with sharp cutting cloud contrasts. Help came from Chris who rents the airport house as he directed me to tie down as the heavens let go with wind and rain. This wasn't easy with all the water, wind and tailwheel that does not always fully caster. We were both soaked, but the aircraft got tied down. I was so wet that my waterproof watch had moisture inside. We slogged into the farmhouse to be greeted by 7 dogs and there

was a pot belly pig somewhere. The worst was yet to come.

My wife doesn't like driving at night but especially when it's raining. A CEL call was made and some reluctant agreement to try to find an unfamiliar farm at night, in a storm. Sometime later, after some coaxing by Chris, I phoned again. She was on her way but was delayed at the gas station. I told her to stay there and Chris would drive me to meet her, 10 minutes away. I got a chilled reception as she declared "*Why were you out in that stuff when you knew you had to be back to meet friends for fireworks?*" The real fireworks were cancelled but I sensed others just starting... and rightly so!

What would I do differently next time? Talk to London FIC for a briefing and get an in-flight update from the RCO. Can you find the RCO in your region?

But I can also claim another win for ADS-B. My score card is now:

- Two traffic conflicts avoided (but a whole bunch of formation hook-ups)
- Three weather events viewed and avoided



The next day... a real flying day

I have learned and shared a lot of info about ADS-B over the last couple of years and believe the skies will be much safer when we all have ADS-B IN and OUT. In order to encourage you to add it to your own aircraft, I have tried to summarize my ADS-B experience and preference for 978UAT below.

Why did I get ADS-B?

My friend Dan Oldridge had installed into his Highlander STOL a Stratus ESG ADS-B transponder (1090) and I wanted to find him. His Stratus II receiver could display other targets and FIS-B weather on his iPads while using the same transponder antenna.

The uAvionix EchoUAT that I selected not only had 978 and 1090 receivers but included an ADS-B OUT on 978 UAT. Dan could now see me as a UAT target and I could get the weather.

My ADS-B

I've had ADS-B IN and OUT on the airplane for over a year now. It is an integrated package which transmits my GPS-WAAS position on UAT-978MHz and receives UAT and 1090 MHz target reports as well as UAT – FIS-B weather. Both activities happen on a single blade antenna. Also in the mix is a uAvionix EchoUAT main unit with a GPS receiver/antenna with an iPad mini with FltPlnGO as the display app. The EchoUAT receives the transmissions from my Microaire 2000 transponder including the Mode A code and Mode C pressure altitude (PA). Overall ADS-B cost me just \$1900 CAD.

The EchoUAT provides a complete solution for FAA 2020 ADS-B compliance. Features include:

- Connects to aircraft power but uses very little power and starts-up automatically.
- Compatible with a standard transponder but takes up no panel space.
- Very light weight even with the bundled WAAS/RAIM GPS.
- Uses single antenna for ADS-B IN and OUT.
- No messy wires.
- Easy set-up. The only problem was putting in the right ICAO ship's code.
- FIS-B (weather) and TIS-B (targets) are wirelessly communicated to my iPad mini for ADS-B IN in the cockpit.
- The price was right. More expensive than just ADS-IN but with no mess and FAA 2020 compliance. Under \$2K vs \$5K for the Stratus ESG, Stratus II, encoder and sync cable.

What we have learned about ADS-B installations (1090 & 978 systems):

1. ADS-IN should include 1090 and 978 MHz for targets and weather capabilities. This is the ADS-B safety advantage over ATC surveillance.
2. ADS-IN & OUT should use the same antenna to get best target detection.
 - You can detect antenna performance issues on a receiver easier.
3. Performance is all about the antenna location.
 - Clear line of site is what is needed. For ground-based ADS-B and aircraft-to-aircraft, the antenna can be located on the top or bottom. It just needs to be clear of obstructions and have a low radiation angle, which generally means having a good ground plane. This is especially important for receiving remote FIS-B stations. For Aireon on 1090ES it will mean a top mounted antenna or an expensive diversity system.
 - Floats, rigging and landing gear can make ADS-B IN and OUT performance spotty and reduce range.
4. ADS-B is great for establishing and maintaining formation flight.
 - We've used it for a gaggle of 10 aircraft to find and keep us apart.
5. UAT-OUT uses less power than 1090ES and can be a simple upgrade to existing newer transponder installations.
 - The UAT output power can be 20 or 40W compared to 125 to 250W for 1090ES systems. It may be safer and has lower power consumption due to legacy design issues.
 - UAT can be a simple add-on, such as on a wingtip, or upgrade to an existing panel.
 - Lower power generally means lower acquisition, installation and maintenance costs.

- Lee Coulman

Aviation Fun Day 2019

The weather at Waterloo Region International Airport was good on August 27, 2019 for the annual Aviation Fun Day. Lee's flight from Roger Deming's airstrip at Damascus was a little questionable as the skies took a while to open up, but eventually he managed to make the trip into Waterloo airport.

My Highlander was out of commission again this year due to an incident a few weeks prior, but I wasn't going to let that stop me from attending the event. I drove over to CYKF and assisted Lee in showing off his Searey to those in attendance and helping occasionally to lift children down into the seats and out again after their parents took photos. I mused about how much I missed having my Highlander there, but luckily I know enough about Lee's Searey to answer queries about his aircraft.

Reports after the AFD show indicated that there were as many as 8,000 people that attended the event on Saturday. As always, food donations were accepted for the Food Bank and a number of vendors were on site supplying burgers, hotdogs and other fast food at a reasonable price for attendees.

It's always a fun event with so many great aviation displays and so many different aircraft to see on the flight line. From ultralights and gyros to amateur-builts and certified aircraft, there are certainly lots of GA aircraft to see. Add to that a number of vintage aircraft and jets, as well as a number of commercial and government aircraft and you can see there is something for everyone interested in aviation.



There were also drone displays and flight simulators for anyone interested in the idea of flying, but maybe had not built up the courage or funds required to actually fly.

We helped hundreds of children enjoy their day by having them sit in Lee's Searey and gently try out the controls as we explained how the control mixer works to pitch or roll the aircraft and saw a number of familiar faces attending the event. Below, CTV's Rosie Del Campo watches as her son tries out the controls of the Searey. I only had a chance to chat for a minute or so given the long lines of children waiting, but I congratulated her on her new position as lead newscaster on the 6 pm CTV Kitchener news.



I am rather surprised at the fact that so few of our members show their aircraft off or even attend this great event each year at Waterloo Region International Airport. The last couple of years we have just attended as part of the COPA group, but I would really like to see more of an RAA presence at Aviation Fun Day 2020.

If anyone has an idea how we can generate member interest in flying in to the event to display their aircraft or even driving in to assist, please let me know since I believe this is truly one of the best events for obtaining positive public exposure for our organization, amateur aircraft and recreational aviation.

Hopefully, we will see more of our local KWRAA members at Aviation Fun Day in 2020.

KWRRA Fly-in at Roger Deming's

Thanks again to Roger Deming for hosting a KWRRA fly-in, his hospitality on August 30th and for the improvements he has made to his aerodrome near Damascus, Ontario.



Now that the hangars are built, it provided an excellent place to hold the event. The weather on the 30th was great, but having a shelter option sealed the deal on making it an all-weather event.



In spite of a number of planes being out of commission, this was one of the best turnouts in recent years that any of us could remember.

Planes ranged from Mike's HighMax ultra-light all the way up to Tom's Maule with a number of certified and amateur-built aircraft.



As always the food was great and Mike did his BBQ magic show. It was great to see so many members and spouses in attendance, as well as a number of visitors and guests, which made for an excellent last fly-in of the 2019 season.



Thanks to everyone who came to any or all of our 2019 KWRRA fly-ins!

The Leading Edge

Upcoming Events in 2019: (Highlighted lines are KWRAA Events*)

October 21	-	October Meeting at 7:30 in the Cadet building at CYKF
November 11	-	November Meeting at 7:30 in the Cadet building at CYKF
November 29	-	KWRAA Christmas Party – Details to follow later in 2019

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

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For Sale:

Pegazair-100 STOL project

All metal with fabric covered fuselage is ready for instruments and 100hp engine. Built to plans with exceptional build quality.

Replacement parts cost (unassembled) over \$30,000 USD

MDRA Pre-cover inspection was done in June 2011.

Asking \$15,000 USD or \$18,000 CAD

Please contact Clarence for more information ... cemartens@rogers.com or (519)742-3159.

For Sale:

Corvair Engine set up for aircraft use, but easily converted back.

Contact Clare Snyder for more details and price. clare@snyder.on.ca

For Sale:

Zenair CH701 Partial Kit - Save thousands of dollars and get the professionally completed wings, tail section, slats, and flaperons. Contact Jerry Degen (416)578-8878