

- January 2019 -



As we head into the winter months some of us just wait patiently, dreaming of spring arriving so we can resume our normal flying activities. Having our own strip or having a hangar home at an airpark are dreams most of us will never realize, let alone having so many planes that you need a rotisserie to be able to access all of your planes. This lucky fellow in the USA had an architect design a home around his custom hangar and a few of his 22 aircraft.

President's Message

While 2018 saw a number of great KWRAA events like the four fly-ins and Christmas Party, we also had a number of not so great events, like the loss of two of our fly-in venues and the passing of one of our members. Thankfully, like they say (whoever 'they' are), when one door closes another usually opens. In the case of the fly-in venues, we were lucky to have Roger Deming step up to offer his place.

Likewise, after Gunter's passing, we were fortunate to have four new members join the chapter. Although these events were unrelated, it reminds us that there is much to be positive about even when we face a loss. It is kind of ironic, yet in many ways a blessing that our chapter is buying the tools once owned by a fellow member so that they may be of benefit to those that remain while helping us to recruit and retain new members. As a member and Director of KWRAA for a number of years, I believe Gunter would have been quite happy to know this is happening.

Our tool crib is growing in size and we have a number of useful and unique tools available for any of our KWRAA members to borrow. This is an enormous benefit for both new and long-time members during the construction, maintenance, or overhaul of an aircraft project. We have specialty tools for aluminum, composite, wood, acrylic, polycarbonate, steel or almost any material found in an aircraft. There are also a number of specialty wire preparation, connector assembly and labelling tools available.

Once the tool list is updated, I will make it available to all members so even if you still need to buy a few tools for yourself, the KWRAA tool crib has the potential to save you some money. The more KWRAA members use the loaner tools the more value there is in having this tool crib available to us.

I hope the New Year is starting off well for you!

2019 is going to be a great year for KWRAA.

- Dan

CYSA – UAT ADS-B Trial Update

You may remember that back in the April and May issues of *The Leading Edge*, we provided you with an update on the ADS-B situation in Canada and the attempts Lee and I were making to get Nav Canada and eventually Transport Canada to recognize the importance of ADS-B IN. You may also recall that due to bandwidth restrictions on the 1090MHz frequency used for ADS-B OUT, there was no way the new AIREON satellites operating on 1090MHz could provide FIS-B (weather) and TIS-B (traffic) like the FAA is doing with UAT in the USA on 978MHz. UAT is an acronym for Universal Access Transceiver, but it's more important to recognize that it has not been approved for use in Canada ... yet.

As a result, Lee and I have proposed a trial at a local airport to prove the effectiveness of FIS-B and TIS-B and to prove that there is a demand here in Canada to get the same in-flight 'services' offered south of the border. In spite of Nav Canada's insistence that the FIS-B information can be obtained by calling their Flight Services personnel, it's certainly not the same as getting a graphic display of weather in the cockpit. Additionally, we believe that pilots don't need the distraction of phone calls while flying... we can't legally do it while driving, so how does it make sense while flying?

In an attempt to get better in-flight information, the proposed ADS-B trial will continue to require a lot of 'ground work' (excuse the pun). Lee has done much of the background work already to get this trial approved at CYSA (Stratford Municipal Airport), but there are still a number of hurdles to overcome before the project can start.

The objective of this trial is to improve flight safety around small and regional airports by encouraging the use of inexpensive ADS-B conspicuity technologies, in particular those services available primarily on 978MHz UAT.

Ideally, the ADS-B service would provide weather and NOTAM information to aircraft within a limited distance from the airport, say 30 miles or so and ADS-B aircraft targets for the UNICOM operator from both 1090ES and 978UAT OUT equipped aircraft.

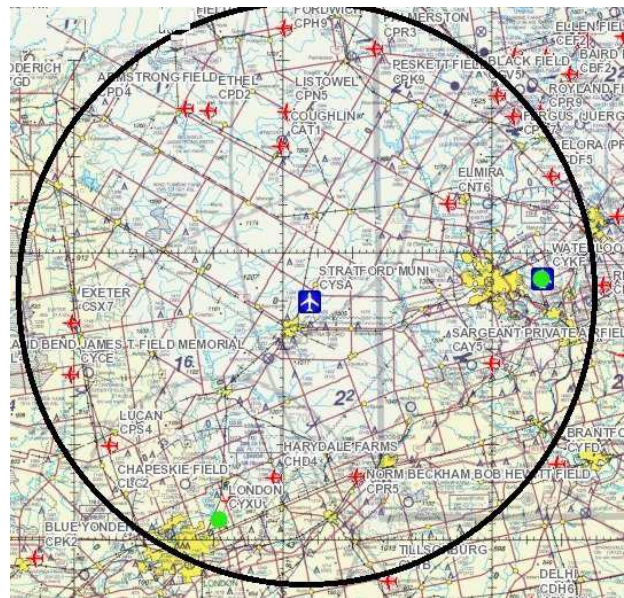
This would allow pilots and ground crew to:

- track training aircraft on the ground, in the circuit, near the airport and in the training area
- track airport vehicles such as snowplows, maintenance trucks and lawn mowers
- track any ADS-B equipped aircraft entering the zone and the circuit, as well as aircraft transiting the aerodrome traffic area

Ultimately, the goal is to reduce conflicts and incursions at the airport thereby reducing the chance of an accident or even just a near miss.

To understand how the equipment at CYSA will achieve this we must remember that ADS-B OUT broadcasts the aircraft position and ADS-B IN receives position info from other aircraft. The proposed equipment will receive both UAT and 1090ES targets for display and transmit FIS-B on UAT (978 MHz) to aircraft within range. Weather information will be extracted from the Internet and reformatted as FIS-B messages.

The transmitted ADS-B signal from CYSA is being planned to cover a 30 nm radius from the airport but will depend upon the approved transmit power, aircraft receiver altitude and any line-of-sight limitations like obstacles.



You may be asking yourself why use Stratford airport? Why not Waterloo Region Airport? Like CYKF, Stratford has a mix of training and

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business aircraft with various levels of communications skills, but there are also non-standard patterns (RH) on runways 17 and 23. Additionally, the main runway 23 does not have a taxiway but has a limited holding area. There can also be a mixture of turbojets, light aircraft and ultralights in the area.

Very few aircraft in the Stratford area have ADS-B OUT capability due to the high cost and complex installations for 1090ES (Mode S), but a number of aircraft do have ADS-B IN, which can receive on UAT (978 MHz) and 1090 MHz using STRATUX, Stratus, etc. Additionally, the Airport Manager / CFI, Andy Woodham is very accommodating and receptive to the idea.

The expected outcome of the UAT ADS-B trial at CYSA is that more owners and pilots will install full ADS-B solutions that include either 1090ES or 978MHz UAT ADS-B OUT in their aircraft making them visible to other aircraft receiving ADS-B signals. As a bonus, this also would make them legal to fly in the USA under the 2020 mandate (if conditions are met).

Owners who cannot justify the high cost of a full 1090ES will be more likely to consider a full UAT solution, since a typical UAT solution often costs one third or less than a full 1090ES solution, but can still provide full functionality outside of mandatory 1090ES ADS-B zones.*

There are still a number of approvals required before this project can move ahead, although Lee is working diligently and relentlessly to have them addressed as soon as possible.

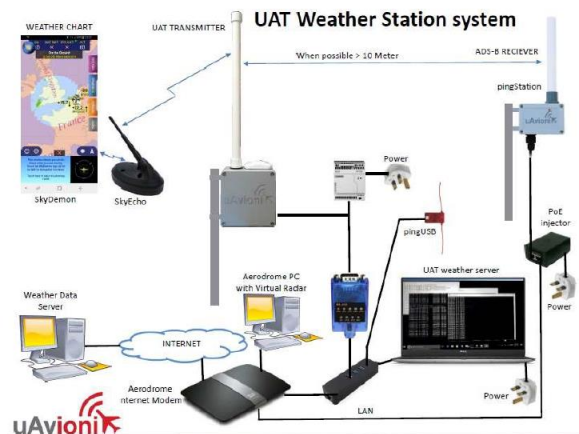
A radio licence or approval for use of a UAT transmitter as described at this location is a major hurdle since Nav Canada controls aviation frequencies, but Industry Canada issues the licence. Working to our advantage is the fact that there are a number of Canadian and US aircraft already transmitting on this frequency within Canada with transmitter powers up to 40 watts per RTCA DO-282. This general approval is a necessity for current spectrum management.

The next two hurdles will be obtaining approvals for the use of Nav Canada weather data and Environment Canada weather data that can be reformatted for transmission on the transmitters of the UAT trail system at CYSA.

Since approvals have already been obtained from the parties involved in the trial, the last major hurdle will be in obtaining FAA approval of FIS-B transmit time slot for CYSA. Because there are a number of UAT ground stations in the USA that can be received this side of the border, coordination is required to prevent interference with existing stations there.

None of these approvals are impossible to obtain, but approvals may not be quick by any stretch of the imagination. Bureaucracy will likely make this a painfully slow but necessary process to endure in order to ensure the success of the UAT trial.

We are fortunate to have uAvionix, a supplier of UAT equipment, on board as a partner. They will be supplying the hardware required to operate this trial and assisting in ensuring its proper operation at CYSA.



In spite of the challenges still ahead, we are hopeful that they can be resolved soon and begin the Stratford ADS-B ground station trial in time for the 2019 summer flying season.

- Lee and Dan

* Nav Canada has proposed legislation that will make it mandatory to use 1090ES OUT in Class A, B and high E airspace by 2022. (Their report is being reviewed by Transport Canada now. Legislation is expected in 2019.)

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Weekly Luncheon at CYKF

The weekly \$5 luncheon held at Hangar 18 on Wednesdays at KW airport is a charity event supported by Graham Luckhurst, Don Sinclair, and Gary Wolf. Please be respectful of the generosity of these individuals in hosting this charity lunch.

Occasionally, you will see others bringing in a salad or dessert to assist with the meal, but it should be noted that this is not a KWRAA event in spite of the fact that a number of KWRAA members attend each week.

Hundreds of dollars are raised each year for the local food bank through this event. We ask that you bring your \$5 each week to support these fundraising efforts, and continue to share this time with your fellow pilots, builders, and friends to learn, laugh, and eat a great lunch together, while supporting a worthy cause.

Gary and the others involved, spend a lot of their own personal time preparing for this each week, so a “debt of thanks” is owed to them from each of us that attends this weekly event. Where else can you get a meal for \$5 and contribute to charity at the same time?



The Christmas break allowed a number of non-retired members of KWRAA and a few spouses to join us at the Wednesday luncheon at Gary Wolf's hangar. On the flip side, it also meant that a number of regulars could not join us since they were out-of-town visiting with relatives during the break. The numbers were about the same as a typical week and included several of the workers from the airport who join us on occasion. It's obviously successful when it's standing room only for the stragglers.

It's definitely the best way for a bunch of pilots and airplane enthusiasts to be 'out to lunch'.



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

January 14	-	January Meeting at 7:30 in the Cadet building at CYKF
February 11	-	February Meeting at 7:30 in the Cadet building at CYKF
March 11	-	March Meeting at 7:30 in the Cadet building at CYKF
April 2-7	-	Sun-n-Fun in Lakeland Florida, USA
April 8	-	April Meeting at 7:30 in the Cadet building at CYKF
May 13	-	May Meeting at 7:30 in the Cadet building at CYKF
June 6-8	-	COPA National (Western) Convention in Innisfail, Alberta (CEM4)
June 15	-	KWRAA Largo Woods Fly-in near Winterbourne (Tentative Date)
July 6	-	KWRAA Fly-In – Location to be determined (Tentative Date)
July 13	-	Zenair Open House – Midland at CYEE - Huronia Airport
July 22-28	-	Air Venture Oshkosh in Wisconsin, USA
July 27	-	KWRAA Fly-In at Roger Deming's – Kenilworth (Tentative Date)
August 10-11	-	Gathering of the Classics in Edenvale
August 16-18	-	UPAC Convention – Lubitz Field, Plattsville
August 17	-	Aviation Fun Day at CYKF – Waterloo Region International Airport
August 22-24	-	COPA National (Eastern) Convention Cornwall Regional Airport (CYCC)
August 31	-	KWRAA Fly-In at Tom Shupe's in Mount Forest (Tentative Date)
September 9	-	September Meeting at 7:30 in the Cadet building at CYKF
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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Important Notes:

* **2019 Membership Dues** should be paid to Mike Thorp at the January meeting if you have not already paid. Be sure to bring your RAA Canada membership card with you. (You must be an RAA national member too!)

January's guest speaker is **Joanne Hy** from Sound Aviation Insurance in Toronto.

February is our Annual Recurrent Training session with **Fred Grootarz**. Stay current and get a sticker for your logbook to prove it.

March is tentatively a "**Show and Tell**" meeting. Bring something interesting from your hangar or shop to show the other members of KWRAA! Also, **Harish Jadeja** has volunteered to do a presentation on **Drone Operation and Training** available. With the new TC legislation on drones and UAV's this could be a valuable session for all pilots and especially anyone considering buying a drone.