

- December 2017 -



The 2017 KWRAA Christmas Party was another great success by all accounts. The venue was a little smaller, but the food was great and we received a number of positive comments. Speaking of numbers, this was the 50/50 draw!

President's Message

Thank you to Mac McCulloch and Mike Thorp as well as their spouses, Pat and Hetty for their work in organizing and running the KWRAA Christmas Party. The positive comments we received are a good indication of the appreciation our members have for the work you all do in making it a success each year!

In this issue I have included a number of photos from the party and a brief description of some of what happened there for anyone who was unable to attend this year. We hope to see you out at next year's event.

Congratulations to our Holy Golly and Larry Edwards award winners for 2017. I have included a couple of photos and more info in the Christmas Party story in this newsletter.

Also in this month's Leading Edge newsletter you will find a great story from Lee Coulman that follows his thought and decision process in

moving to an ADSB system for his Searey. It also includes a commentary or two about what needs to change here in Canada in order to make use of data that is available to US pilots and should be made available to pilots in Canada too.

Lee managed to find a cost effective solution that's easy to install, easy to set up, and easy to use. What more could a pilot ask for in an ADSB system. Be sure to read his story this month; it may save you a few bucks.

In the last issue I mentioned that I love having an amateur-built aircraft and being part of RAA! Lee's story reminds us that we are truly blessed to have so many knowledgeable pilots and builders willing to assist us with the knowledge and skills required to make this such a great hobby!

2018 will be another great year for KWRAA!

- Dan

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KWRRA Christmas Party!

November 24, 2017 will go down in the records as the Christmas Party of the year!!! ...well, for KWRRA anyway! We had a number of SOGA and UPAC members join us for the festivities. Thanks go out to Mac and Mike for organizing and running this great annual event!

The new venue seems to have gone over well with those in attendance. The meal was great, the setting was festive, and the staff at the Olde Heidelberg Hotel did a great job of looking after our needs for the Christmas Party!



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Lee and Dan put together a number of interesting photos from their adventures in 2017 along with a number of photos from the four KWRAA sponsored events this past summer flying season. The photo show ran on a screen throughout the night. After the meal, there was an opportunity to visit, a 50/50 draw, door prizes for everyone and an awards presentation.

Congratulations to Gunter Malich, KWRAA Director of Aircraft Construction Technology who received the Holy Golly award for 2017. Gunter was recognized for his body of work over the last few years in advancing KWRAA through friendship and assistance to other members as well as his time served as a director of the KW chapter. Gunter was unable to attend this year, so chapter President Dan Oldridge asked Lee to accept the award on Gunter's behalf.



Imagine Lee's surprise when he was called to the front a second time, this time to receive the Larry Edwards Memorial Award for his commitment to advancing the safety and enjoyment of the rest of the membership through his contributions to meetings, fly-ins, newsletter articles, and presentations on various topics at RAA meetings throughout 2017.



Congratulations to both Gunter and Lee on their awards and thanks from all of us for your contributions toward making RAA the great organization it is today.

Thank you also to the members of KWRAA, SOGA and UPAC that attended this event. Any surplus that may have been generated from this event will be used to advance the activities of the KW chapter including the fly-ins and Christmas party in 2018.

The Executive officers and Directors at KWRAA wish our members and supporters a very **Merry Christmas and Happy New Year.**

ADS on a B Grade Budget

I could resist no longer...resistance was futile. Free weather and free traffic to supplement FltPlan GO on my iPad and Android phone was just too much. My background in ATC RADAR was being destroyed as I selected an upstart ADS-B device for my amateur built Searey. Why couldn't I resist?

The cost and capability of the package I bought overwhelmed my curiosity. For the price of a good dual band ADS-B receiver I could get ADS-B in and out with a few extras. It had started some time ago when my iPad was loaded with FltPlan Go as I now had a moving map display to supplement my Garmin AERA GPS navigator and Dynon EFIS. All that information at my fingertips is just simply addictive. But, since I'm so frugal, my iPad didn't have a GPS, so I bought a good standalone GPS that could pick up the GLONASS and GPS satellites. Then of course I needed to keep the batteries charged. Well, that didn't happen all of the time. When one was charged up, the other wasn't and so on. Given those shortcomings and that sometimes the standalone GPS would fail due to cooking on the panel, I also put in a low noise USB power source to cut down on the battery failures and to reduce VHF radio noise.

On the other hand, if I had an ADS-B receiver I could find my buddy Dan Oldridge with his Highlander with ADS-B out capability. We had flown to the COPA AGM in Yarmouth last year and had seen our conflicting traffic from ADS-B on his Foreflight display along with tidbits of FAA weather along the US border. It was enticing.

The tipping point happened when uAvionix came up with simple and cost effective solutions. This was an opportunity to get traffic and weather in a nice tight set of packages with no daggling wires and no batteries. The only downside is that it only had ADS-B OUT using the US UAT format, not the international 1090 extended squitter (ES). It was all for under \$2000 Canadian! Try buying a transponder for that price.

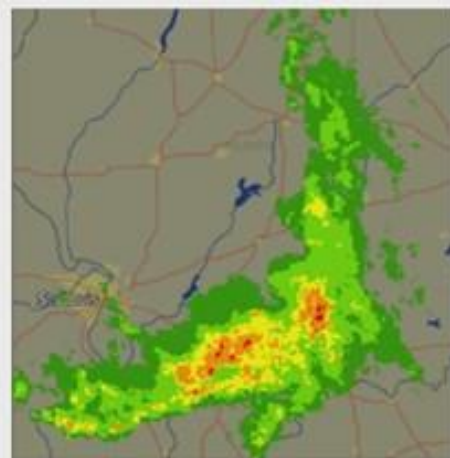
Free traffic and weather to your favorite app



Traffic

EchoUAT receives dual-band ADS-B traffic information. 1090ES and 978(UAT) traffic broadcasts are displayed on supported EFB moving maps relative to your aircraft position and altitude.

- ✗ Receives 978MHz (UAT)
- ✗ Receives 1090MHz (1090ES)
- ✗ TIS-B Traffic reports of non-ADS-B equipped aircraft from FAA ground stations
- ✗ ADS-R rebroadcasts of ADS-B traffic from FAA ground stations



Weather

EchoUAT receives subscription-free in-flight weather (FIS-B) directly from FAA ground stations. FIS-B includes the following weather information:

- ☀ NEXRAD radar
- ☀ METARs
- ☀ TAFs
- ☀ AIRMETs
- ☀ SIGMETs
- ☀ Winds and temps aloft
- ☀ PSREPs
- ☀ NOTAMs
- ☀ TFRs

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With an amateur built aircraft I could do this simply because I can. I believe this is one of the major reasons why we are in the growing sector of GA in Canada.

New life for your existing panel



While other companies are looking to cash in on the ADS-B mandate by selling you a new transponder and WAAS GPS, uAvionix is taking a different approach. echoUAT works with your existing avionics, allowing you to put your savings in the fuel tank and fly more.

- ✓ Keep your Mode C transponder
- ✓ Use your existing WAAS GPS
- ✗ Traffic and Weather to your existing supported EFIS
- ✗ Support for popular iPad and Android Apps

All that was needed in order to install it was to add power and find places for some very small boxes and an antenna. My airplane doesn't have a high quality GPS like a Garmin 430 WAAS GPS so I selected the uAvionix GPS SkyFYX. This GPS is no slouch, as it has all the special features to meet the stringent FAA compliant features including RAIM. You don't get this feature in even a good handheld aviation GPS. Also, I don't have to pay to update the database with this GPS. It is so smart for being dumb.

I also don't have a very sophisticated EFIS. My Dynon D10A EFIS talks to my Garmin GPS but not much else. A more sophisticated Garmin G3x, GRT or Dynon Skyview would open a lot more possibilities, but add to the complexity and cost.

The simpler configuration cuts down on the cost and complexity. Just add power and an antenna and there it is.



The small boxes are much more amenable to placing in convenient locations, closer to their antennae or other connections. You don't need panel space, which I don't really have.

The Echo UAT box is only 80g and the SkyFYX WAAS GPS only 100g. The power consumption is very low and needs a single breaker to power everything. The overall weight penalty for my airplane was 1.3 lbs. The iPad or Android runs the "Echo" app which sets up the echoUAT names and codes. You can set it and forget it. My old Microair transponder transmits my squawk code and barometric altitude. These are auto'magic'ally picked up and retransmitted along with the GPS altitude and position on the UAT frequency. Ah yes, and then there is the Wi-Fi connection of control and data to the iPad which was pretty much seamless.

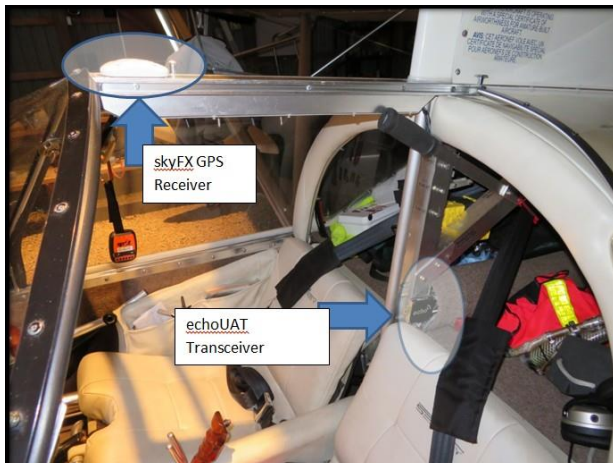
So how did this installation work out?

The layout in the aircraft is shown in the following pictures. The installation happened very easily as the wiring is so simple. The only difficulty is finding an antenna location that is 2 metres away from the transponder and at least a metre from the VHF antenna, and is mostly in the clear from any obstructions or blockages. The placement is critical for getting superior results compared to the portables in most airplanes. The antenna is vertically polarized so was placed pointing up on my

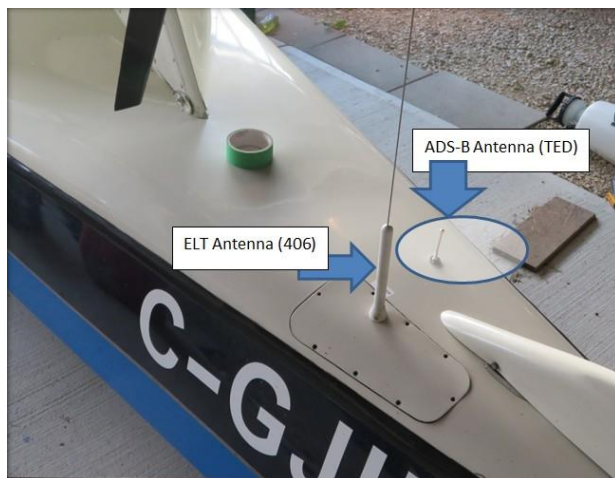
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amphibian for obvious reasons. The coax (RG400) length is important, so you can't place it more than about 9 ft. from the transmitter, to achieve a loss of less than 1.5 dB. There is a structural tube that allowed coax routing to the antenna on the rear turtle deck. I cut up an aluminum serving tray and placed it within the Fiberglas skin to serve as a 170 cm ground plane, which is important for superior results. The echoUAT transceiver was placed behind the pilot's seats, under the engine pylon so I had some chance of seeing the mini-LEDs on the unit. The GPS was placed upon the canopy rail and only power and data had to be run to the echoUAT. Then I just needed to set up the Wi-Fi and program the echoUAT with my specifics including my registration and 24 bit ICAO code on the iPad or Android.

I did both ... just because I could.



Installation in my Searey was relatively easy. There is surprisingly little wiring to get the system operating.



The small (TED) antenna was installed on the turtle deck providing easy access to the wiring.

So, what did I receive?

I was surprised to see aircraft targets almost immediately. One was directly overhead at 25,000 ft. and there were others over Detroit and Buffalo at much lower altitudes. I didn't get much above 2500 AGL just north of Kitchener Waterloo but I did pick up 2 UAT towers in the USA and received METARS and TAFs as a result. This was neat and it continued to lower altitudes. I can barely hear the CYKF ATIS on VHF from my field but to receive US UAT down to these altitudes was fantastic.

The only problem... where is the Canadian weather data? Ask Nav Canada; no seriously ...talk to Nav Canada. They seem to have a notion that they are fulfilling their mandate by providing us with future satellite service through AIREON. This starts in 2018, and only includes us if we purchase and install expensive additional equipment, so let's have that talk with Nav Canada to get useful and affordable ADS-B service for GA. AIREON may work well for commercial operators flying in the Arctic, but it will be out of reach for most GA pilots and owners. It took several years for the current in-plane ADS-B technology and systems to be developed by avionics manufacturers and the prices eventually came down as sales volume increased. The FAA got it right in the USA by including weather and data useful to pilots as part of their ADS-B roll-out as an early incentive. Without Canadian weather, there will be little desire for Canadian pilots to move to the AIREON system. Most pilots will continue to migrate toward, and use, the less expensive option available from our southern neighbours.

What are other jurisdictions doing?

Surprisingly, the UK CAA (TC in UK) has taken the lead by testing a uAvionix product similar to mine but with 1090ES ADS-B out and 978 UAT weather in.

Colin Chesterton, CAA future systems coordinator, said:

"We are very keen to put electronic conspicuity systems into GA aircraft cockpits as soon as possible. But it's important we also include the users' requirements in our decision-making. We have a real opportunity to put in place an

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affordable system which will increase the safety of GA pilots and give them some really useful features, such as live weather data, and also provide controllers with the data they need to do their jobs.

There will be much more to come during the year with the various tests taking place. All will be undertaken in close cooperation with the GA community and equipment manufacturers to make sure that we can implement the findings as quickly as possible."

For now, I'm quite pleased with the installation and operation of my new ADS-B system, but I hope that our friends at Nav Canada eventually

realize that the cost and complexity of their satellite-based system may preclude most GA aircraft in Canada from moving to AIREON ADS-B, especially without the added incentives of weather and airspace information that they have in the USA.

- Lee Coulman
Vice President &
Director of Airmanship and Flight Safety
Kitchener Waterloo Recreational Aircraft Assoc.

Update on Gunter Malich's health...

Gunter has been making fairly steady improvements in his health the last month or so. There have been a couple of temporary setbacks, but you will be happy to know that he managed to get out to his hangar this week and with Lee's help got his RV-8 winterized

and oil changed ready for 2018. Gunter was quite pleased to see his engine start on the first attempt even after it sat for the 3 months since he fell ill.

Go Gunter! We all wish you continued recovery from your illness. We all miss seeing you.



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Upcoming Events in 2018: (Highlighted lines are KWRAA Events*)

January 8	-	January Meeting at 7:30 in the Cadet building at CYKF
February 12	-	February Meeting at 7:30 in the Cadet building at CYKF
March 12	-	March Meeting at 7:30 in the Cadet building at CYKF
April 10-15	-	Sun-n-Fun in Lakeland Florida
April 9	-	April Meeting at 7:30 in the Cadet building at CYKF
May 14	-	May Meeting at 7:30 in the Cadet building at CYKF
June 16	-	KWRAA Largo Woods Fly-in near Winterbourne (Tentative Date)
June 21-24	-	COPA National Convention in St. John, NB
July 14	-	KWRAA Fly-In at Tom Shupe's in Mount Forest (Tentative Date)
July 23-29	-	Air Venture Oshkosh in Wisconsin
July 28	-	KWRAA Fly-In at CPR3 near Teviotdale/Palmerston (Tentative Date)
August 11-12	-	Gathering of the Classics in Edenvale, ON
August 12	-	KWRAA Fly-In at CMZ2 – Metz/MacPat Field in Arthur (Tentative Date)
August 17-19	-	UPAC Convention – Lubitz Field, Plattsville ON
August 25	-	Aviation Fun Day at CYKF

* KWRAA events are fly-in and/or drive-in (Please advise the host in advance if you plan to attend whenever possible.)

Executive Contact Information:

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Vice President:	Lee Coulman	(519) 664-8217 lee.coulman@gmail.com
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Treasurer:	Mike Thorp	(519) 338-2768 mhthorp@hotmail.com
Director:	Gunter Malich	(519) 747-5066 gunter.malich@gmail.com
Director:	Open	(Looking for a Volunteer)
Director:	Mac McCulloch	(519) 831-0967 macpat@live.ca
RAA Canada:	Gary Wolf	(519) 648-3030 garywolf@rogers.com

FOR SALE

David Clarke Headset (H10-13.4) – Over \$400 new!

Lightly used, works very well, looks brand new... **\$200.** Contact: Dan Oldridge at oldridge@golden.net

Fuel Tank Caps and Parts

2 - RIEKE, 3" composite tank filler neck and cap (asking \$10.00 each)

2 - SHAW AERO, Aerobatic fuel stopper, non-vented adjustable type (asking \$25 each; current list price \$66.75 at ACS) Contact: Clarence Martens at cemartens@rogers.com

Rotax Heat Monitor Strips

Mac has a number of Rotax Heat Monitor Strips that can be applied to sensitive areas to monitor for extreme heat readings. They are presently being recommended by Rotax to monitor the ignition modules. He is offering them individually for \$15 each incl. HST. or two for \$28 incl. HST.

Contact: Mac McCulloch at macpat@live.ca

WANTED

Stringer Material

5/16" x 1" rectangular tubing with 0.50 wall thickness in 12' lengths. Contact Ted Welfred if you have some for sale or know of any available.