

- August 2015 -



Ted, Gunter and Mike working the aircraft building techniques display inside the Cadet Training Centre at the CYKF Aviation Fun Day on August 22, 2015.

President's Message

After weeks of planning and preparing for the first airport-wide Aviation Fun Day, the weather cooperated to provide us with a great day for the event. WWFC had a few similar events before, but with the cancellation of the airshow this year, the YKF management team was looking for something else to replace it.

A number of vendors, service providers, and aviation groups were invited to participate in the planning and operation of this event. I was asked at the beginning of the process if RAA would like to get on board and jumped in without hesitation knowing that it would be great exposure for our organization.

When the Air Cadets were later asked about participating, I contacted Ron Gowing about setting up a display to show aircraft building techniques. Although it split our resources

between two areas, a number of our members stepped up to the plate and staffed both spots.

Almost 4000 people attended the event and everyone seems to think it was very successful. Thanks to some prior arrangements and a new YKF control tower manager, non-Mode-C aircraft were allowed into the zone to attend the event including Mike Shave's Mini-Cab and my Highlander.

Thank you to all of our members that flew in to display your aircraft and to those members that worked the displays at the Cadet building. It's great to see that even in the face of reduced numbers in our ranks that there are still a few dedicated individuals that take the time to promote RAA and build stronger links between the public and the aviation community. It makes me proud to be part of this group!

- Dan

Aviation Fun Day...

Thanks again to our local RAA members for making the day such a success!

The following article is the media release sent out by the Region of Waterloo in regard to Aviation Fun Day 2015...



Thousands enjoy Aviation Fun Day and help fill shelves at local Food Banks

Waterloo Region, ON –

The Region of Waterloo International Airport along with the organizers of Aviation Fun Day would like thank everyone who helped make the day a great success.

“We are thrilled with the outcome of Aviation Fun Day and the support shown for our local Food Banks,” said Sean Carroll, Acting General Manager of the Region of Waterloo International Airport. “The event brought the entire airport community together to inspire the next generation of aviation enthusiasts and the turnout was fantastic. I’d like to thank everyone who contributed their time along with the estimated 3,900 members of the community that came out to enjoy the event.”

In lieu of an admission fee, donations were accepted for the Cambridge Self Help Food Bank and the Food Bank of Waterloo Region. In total \$751 dollars in cash and 2,012 pounds of food were collected along with an additional \$1,000 donation, proceeds from the day’s sight-seeing flights operated by Great Lakes Helicopter and the Waterloo Wellington Flight Centre.

“Aviation Fun Day was a wonderful opportunity for the Cambridge Self Help Food Bank and Food Bank of Waterloo Region to work together and help fill our shelves,” said Pat Singleton Executive Director for the Cambridge Self Help Food Bank. “Our food supplies become depleted over the summer and this kind of event helps restore the balance to our warehouse. Special thanks to Richard Carothers of Breslau Flyers COPA Flight 26 for his diligent work to ensure the food collection ran smoothly.”

*Airport employees and tenants including Breslau Flyers Canadian Owners and Pilots Association Flight 26, FliteLine Services, Great Lakes Helicopter, **Recreational Aircraft Association of Canada**, Royal Canadian Air Cadet Youth Development Centre and the Waterloo Wellington Flight Centre worked together to create Aviation Fun Day, an event geared toward providing Waterloo Region with a behind-the-scenes look at the aviation industry. The event was held on Saturday August 22 at the Region of Waterloo International Airport.*

“I’d like to thank the organizers, volunteers and the generous aviation enthusiasts for their support,” said Wendi Campbell, Executive Director of The Food Bank of Waterloo Region. “Aviation Fun Day helped our region understand some of the gifts we have right here in this caring community. Including The Food Bank in this wonderful educational event raised awareness of food insecurity as a year-round concern. The food and funds donated by attendees will provide more than 6,800 meals for people struggling in Waterloo Region.”

Note:

We had a lot of positive comments about our displays inside and out. We have at least three good leads on potential new chapter members and got a lot of good PR for our chapter. As well, I think everyone who participated would agree it was an enjoyable experience and plan to participate again next year.

More coverage to follow in September. - Dan

Why don't we all have transponders?

Lee Coulman – KWRAA Director of Flight Safety

This question was in my frontal lobe this last weekend as we participated in the Family Day at the CYKF. We penetrated the Class C, transponder Mode C airspace to display and talk about our airplanes. We were welcomed, whatever we had a transponder or not. The broader question about transponders was asked in a Nav Canada consultative meeting in March of this year. The answer seemed obvious to me for air safety. A similar question was asked at Oshkosh to a seminar group about the Zacon traffic alert system. That system used other transponders to plot their position relative to you. Anyway, the answer was that “Yes, we all have transponders with Mode C altitude alerting” and “yes, we want to know where that other traffic is”. What’s the matter with the rest of us? With ADS-B requirements for travel in the US beginning in 2020, what is the answer for pilots in Canada?

I’m biased. My background is RADAR and I want to know where that traffic is. Everyday I’m flying in busy airspace I marvel at, “I never saw that traffic”, even when advised by ATC where to look. This weekend at CYKF, I on was on left base while there was a small homebuilt on right base, with a weak radio. “Advise traffic in sight, you’re #2” ...”Looking for traffic” ...”Negative traffic”. We need every aid we can get. At least the tower ATC has RADAR, with position and range, along with altitude from Mode C; and a “mark-one eyeball”. Some of us have trouble with our older model “mark-1”, especially when the traffic is obscured by the background.

In the enroute environment, with no direct ATC involvement, should we be transponding? Kurtis Arnold of Nav Canada suggested in the meeting that we should. A pivotal incident was sited about that place south of CYKF with

those airplanes without engines that can apparently climb as high as 7000 feet. A 747 had a close encounter with an airplane looking thing. Now we know why “Transponder Required above 6500 ft.” appears on the VNC maps in the Toronto Class B airspace. With mode C transponders, not only will we be seen by ATC radar but the airliner’s TCAS will also

see us in height and position.



So why aren't we all equipped with Mode C transponders? Is it the complexity, the initial cost, maintenance or confusion over the requirements and standards?

A transponder installation can be complicated. At the very least it needs to be connected to the static port to obtain the pressure altitude. A separate encoder may be required but some of us have Electronic Flight Instruments (EFIS) that have encoder outputs. Some transponders require a parallel (14 wire) and others have serial. The EFIS solution usually gives some options to help for one or the other. A transponder antenna is also needed which has to be properly located for best performance. The antenna coaxial cable needs to be of high quality and as short of a length. Often half of the transmitter power is lost in the cable! Further complexity is created if you need to be ADS-B compliant and fly in the States. Adding a transponder has been considered as a major modification. More to come on this topic.



The Leading Edge



The initial cost can be staggering if we don't think we need it for air safety.

The cost will

vary with how far you want to go with trying to be compliant with emerging ADS-B standards. It is wise to balance air safety with reliability and future standards. That old King KT76 may look like a bargain today but it has a limited life power tube that is expensive, and consumes more power than newer equipment. It may not be easily updated may end up costing you more when you trash it and rewire your panel. There are other options, with a little planning.

The maintenance cost is a real killer from my perspective. A two year inspection of the static system integrity, altimeter, encoder and transponder is required. The cost for this can be as low as \$400, but don't hold your breath. Is this really necessary? I've had these tests done on my Piper Warrior when we were flying IFR. What usually happened was that there was always a "problem" and the cost would escalate quickly. One time we had to replace the pitot mast, only to find out later that there was nothing wrong with it. This test is not



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cheap because the test equipment is worth over \$7000 and the time for the test is 2 to 4 hours. It also results in the static system being disconnected to test the altimeter independently. This usually induces some extra "leaks". By the way, it doesn't matter whether you're flying

IFR or VFR, you still need the test. But, don't forget to clean your transponder antenna, especially the cheap, TED type, at regular intervals. A little contamination can create significant RF losses.

Geoff Lee of Tailwind Aviation suspects that there are a lot of airplanes out there that have not been tested for many years. He's seen a few of them as he moves his portable service around Southern Ontario. One he tested was out by 4000 feet. Imagine what that would do to an airliner on TCAS !

<http://www.tailwindaviation.ca/calibrations>

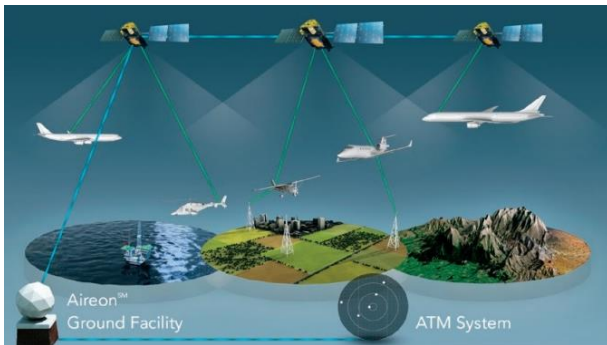
Regulation is the key behind implementation of transponders for the rest of us. The US is a prime example for that. The FAA NextGen program drove the experimental avionics into frenzy for **free weather and traffic if you implement ADS-B out by 2020**. We're not even near 2020 and look at the products that have become available. In contrast, what has happened in Canada?

Well we've had a mandatory ELT 406 implementation. What has that done for us, other than to drive costs by keeping the old inspection intervals, most expensive inspections and higher initial cost? Even though the new high tech batteries have a 5 year inspection interval; we're required to have our ELTs checked every year. Consequently, we are sending hazardous LiOn batteries in the mail. And who turned off the 406 MHz test confirmation email from the RCO? This was very useful in determining full system function. Anyway, it looks like this implementation is moving back onto the front burner, probably without our input or any benefits for us.



The other non-event is Nav Canada's implementation of ADS-B. Were you expecting weather and traffic information in the cockpit? The ADS-B that NavCan is pushing is basically for the big boys to cover the vast northern and transoceanic airspaces. They have added equipment in the north to track but

not to provide any other services. This is the way they make money, it's not to make friends. The Aireon Satellite Network, announced for 2018, provides a means of extending the monitoring network through low earth orbit satellites. To participate, you will need a Mode S Extended Squitter transponder. This is pretty much what the FAA is requiring for ADS-B out compliance in 2020. A Mode S transponder transmits Mode C as well but needs a qualified GPS and encoder.



<http://www.aireon.com/AboutAireon/GlobalLeadership>

So what's "THE PLAN" in Canada?

What is needed is a plan by Nav Canada and Transport Canada to encourage transponders in all of our airplanes and to make that solution compatible with our friends to the south. The FAA had enough vision and worked with the EAA and AOPA to work out a practical implementation. To stimulate a solution, the RAA, and COPA need to step forward to reduce ridiculous requirements and encourage safe and economical transponder implementation. We are all stake holders in the safety of the skies, whether it is Canada or the United States.

So what do we do in the meantime? If we are planning to have a "long term" installation that we can fly into the US, then a Mode S transponder with extended squitter is for you.

This is the "international solution" that works everywhere. Plan carefully. Make sure your EFIS will support the decision and that TC will sign you off. You'll need an ADS-B in solution to get the US target and weather information.

If you are just considering VFR within Canada, then a Mode C transponder is good enough. It is unlikely that NavCanada /TC will require Mode S ADS-B into our regular airspace, even Class C airspace. There are some good solutions with integrated encoders. These kinds of configurations may help when it comes to maintenance inspections.

So, COPA and the RAA should be pushing Nav Canada and TC to clarify their plans with respect to transponders, ADS-B and air safety in Canada. The following points and issues come to mind for further discussion:

- Is Mode S(ES) encouraged for Canadian Airspace? Will it be in the future? When?
- Basic transponders with integrated GPS & encoders for simplified testing?
- Reduced cost of transponder and encoder maintenance and testing for VFR operations ie: interval, and scope?
- Clarify use of non-certified encoders and EFIS in VFR and IFR amateur built aircraft?
- Incentives for implementation of transponders and Mode C or S for all Canada aircraft?

The sooner Nav Canada and TC clarify their plans and address our concerns, the sooner we can ensure we have the right equipment in our aircraft to make the airspace above Canada safer for every pilot and passenger flying here. Without those answers, a lot of owners will continue to sit on the fence.

- Lee Coulman

IMPORTANT NOTICE:

There are still 4 t-shirts for Aviation Fun Day that need to be returned so we can use them again next year. If you have one of them please return it to me so I can wash them all together to make sure they stay the same colour. There will not likely be an opportunity to order more next year so we need to keep the existing ones in good shape and available to whomever is helping at next year's event.

Thanks,
Dan

Coming Soon...

I am compiling a couple of pages of photos from Aviation Fun Day and a couple more of the Roth Field fly-in for the September issue of the Leading Edge newsletter... watch for it very soon!
Thanks to Lee Coulman for supplying me with more photos again! I always seem to be too busy to take enough pictures of the events, so if you have any you wish to share, please forward them.

The next meeting is coming up soon! See you on September 14th!

Upcoming Events in 2015: (Highlighted lines are KWRAA Events*)

August 21 to Sept 7	-	Canadian International Air Show, CNE Grounds
September 14	-	September Meeting at 7:30 in the Cadet building at CYKF
September 19	-	Tiger Boys Fly-in, Guelph
October 19	-	October Meeting at 7:30 in the Cadet building at CYKF
November 9	-	November Meeting at 7:30 in the Cadet building at CYKF
November 29th	-	KWRAA Christmas Party in lieu of a December meeting

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