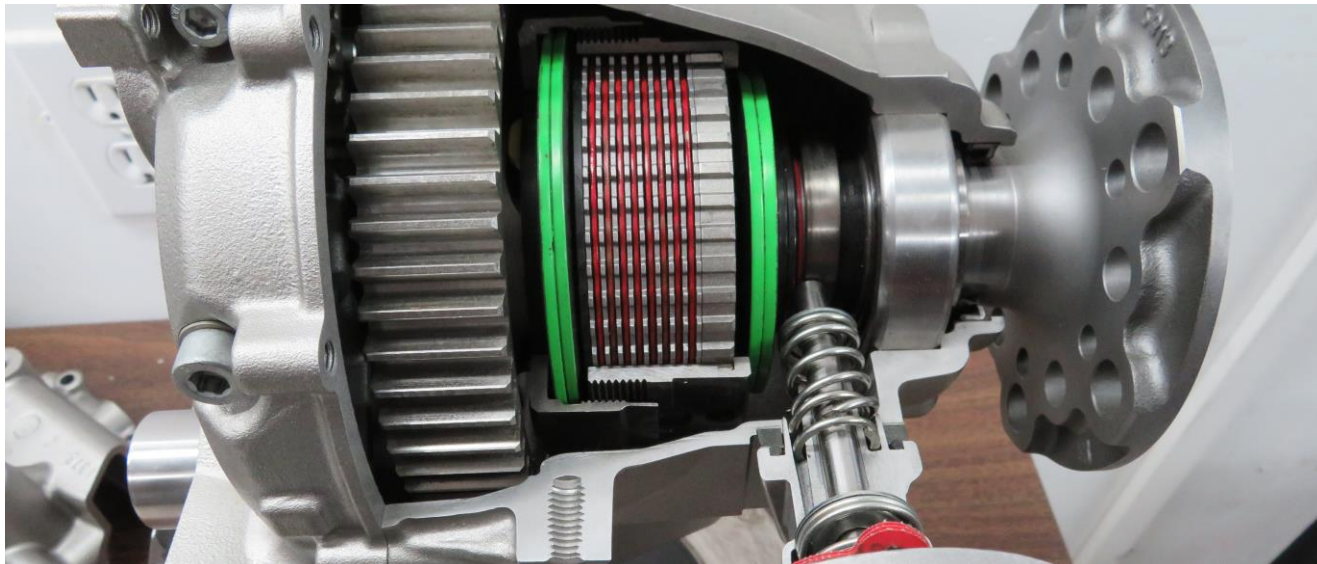


- January 2018 -



Rotech Motor Ltd. in Vernon, BC has a number of cut-away assemblies and engines for their maintenance training courses. The reduction gear, slipper clutch and fuel pump cam assemblies are clearly visible behind the front bearing in this cut-away section of the Rotax 912 PSRU Gearbox.
- Lee Coulman Photo

President's Message

In December, Lee and I had an opportunity to check out the Rotax Distribution Centre in Vernon, BC. It was the first time I had tried skiing Big White during the early ski season period before Christmas and the weather was much nicer than the snow conditions. Several days of bright sunny skies due to inversions meant the mountain was covered in hard-packed snow like the hills here in Ontario, not the fluffy powder normally gracing Big White.

Lee had flown out with Chris and I to join us on the mountain, but the marginal ski conditions provided us with an opportunity to take a day off from skiing and visit the Rotax Distribution Centre in Vernon, BC. A quick call to George Wood and we were all set to go. George was very welcoming and provided us with a tour of their facility. In this issue of the newsletter, I have included a short recounting of our visit and a few photos.

The 'C.A.R. 307 – Aerodromes Consultations' advisory document is now available. This is just a clarification document to augment the actual CAR 307 on responsible aerodrome development, but it helps to understand how the regulation might be interpreted. It's a short read, so please get a look at it.

https://www.tc.gc.ca/media/documents/ca-opssvs/AC_307-001.pdf

After a cool summer and short, albeit warmer than normal autumn, it seems unfair that so far we are now experiencing one of the coldest winters on record. Although my plane is parked snugly away in the Garage Mahal for the winter, the cold temperatures have meant that the annual maintenance and mods I want to do will likely have to wait until spring now! Heating the garage for the winter is just not a cost effective option at these temperatures. Oh well, spring is only 11 weeks away now!

2018 will be another great year for KWRAA!

- Dan

The Leading Edge

Rotech Motor Ltd. Tour – Vernon, BC

Almost half of the KWRAA members' planes are powered by Rotax engines, so it seemed only fitting that given the opportunity, Lee Coulman and I would visit the Rotax facility in Vernon, BC. Rotech Motor Ltd. is the North American distributor for Rotax aircraft engines, including the 912uls engines Lee and I have in our Searey and Highlander.

Besides attending the Okanagan RAA and COPA meetings in December, we figured it was an excellent chance to learn more about Rotech Motor Ltd. and gain a little more insight into our own engines. George Wood and Rob Seaton are very welcoming to visitors and offered to show us around their facility with George acting as our personal guide.



Uncertified Parts Inventory



Uncertified Engines Awaiting Delivery

Although the facility is not large, it is very well organized and very clean. The parts and engines are separated into certified and non-certified areas, which is a federal requirement by Transport Canada.



Certified engines and parts inventory are kept in a separate room. Although we were able to look in the room from the doorway we were not allowed to enter without special authorization.

Rotech does a lot of heavy maintenance service work and overhauls on Rotax engines so they have a dedicated service area and full time certified aircraft tech/mechanic on staff.



Rotech has a full-time factory trained technician, who gave us a quick tour of his work area and showed us an engine he was working on, as well as a slipper (overload) clutch that makes the Rotax 912 series such a unique and desirable engine for aircraft use.

The Leading Edge



All of the areas within the facility are kept very clean and well-organized and the maintenance area is no exception, even while working on an engine.



During service, the parts are laid out in an orderly fashion to assist with cleaning, inspection and reassembly.



Rotech has a test bench designed specifically for testing Rotax alternators, and a mobile test facility mounted on the back of a truck for testing complete engines.



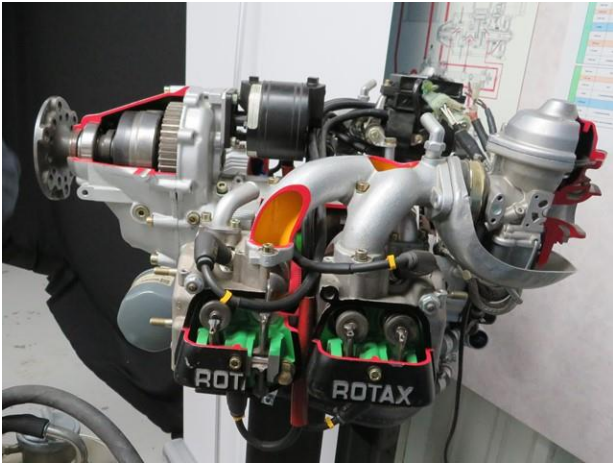
Inside the back of the crew cab truck, there is a rear-facing panel that is used to monitor engine parameters throughout the engine testing process.



Being the North American Distributor, Rotech is responsible for the training of service personnel for repair shops and also for training of owner/operators of Rotax aircraft engines that fall under owner-maintained categories.

A few times a year, Rotech runs courses covering three different levels of maintenance available and make cut-away engines available to course participants so they can more easily understand the internal components and operation of Rotax engines.

The Leading Edge



The classrooms available for maintenance courses are outfitted with all of the required learning aids and tools. Rotech's location at Vernon Airport provides them with easy access to and from the facility for small aircraft and allows Rotech to conduct test flights when required.



The Stemme is a side-by-side motor glider with retractable landing gear, folding wings, and a retractable folding propeller! Folded, the wing span is six feet wider than my Highlander and unfolded the Stemme has an 82 foot wing span that provides an incredible 53:1 glide ratio... WOW!!!



At the time of our visit, the factory Zenair (Rotax 912is powered, of course) was parked outside the hangar. A Stemme motor glider was parked inside while they performed some engine maintenance on it for a customer.



Thanks again to Rob, George and the rest of the Rotech staff for a great tour and loads of useful information about Rotax 912 engines!

Thanks to Lee Coulman for the great photos too!

To learn more about Rotech Motor Ltd., Rotax engines and training available check out these links:
www.rotechmotor.ca
<http://www.rotec.com/rotech-rotax-products>
<http://train.rotech.ca/>

Also of note: Rotax-Owner.com is a separate company that operates out of the same building and offers online Rotax training materials. There is a lot of information for just \$30US/year and some free stuff. <http://www.rotax-owner.com>

To ADS-B or not to ADS-B – is it even a Question?

Over the last couple of years we have heard a few stories about the new AIREON system being developed and expanded upon right here in Canada. It has proven itself to be very effective at tracking commercial aircraft over very remote terrain and even over tracts of ocean that previously had no radar or other form of tracking at all. This satellite-based system when finished will cover the entire globe and is supposed to provide emergency location coverage everywhere and has even

been touted as an eventual replacement for ELT's.

AIREON is basically sky-based ADS-B, but is it all it's being hyped up to be? What will the impact on GA end up being for us? Is there a better solution? If so... what is it?

The following letter was written by Lee Coulman in response to Bernard Gervais' *President's Corner* article in the *From the Top* section of the January issue of COPA Flight and destined for the 'Letters to the Editor'.

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I was greatly upset with the President's Corner response to "Space-Based ADS-B" in the January 2018 issue of COPA Flight. I have three reasons for this opinion.

1. *Who cares if TC or Nav Can are at odds?*

Nav Can is in a consultative process with STAKEHOLDERS like us. In the end, what we all recommend gets embedded in legislation. Further, going down this rabbit hole takes us away from the root problems with spaced-based only operations for ATC.

2. *Get rid of your ELT?*

Aireon will provide, free of charge to registered users, the location and flight track to assist emergency tracking and location of any ADS-B equipped aircraft anywhere in the world. (NC – TRD)

This is the only statement in the NavCan Terms of Reference Document- ADS-B Out Mandate. This doesn't sound like an ELT replacement, even if it worked. Who is going to determine an emergency situation to ask for information? Do you need to be on flight plan? The more important question for me: if you update your existing Transponder to 1090ES, will this work as an ELT replacement?

Most transponder antennae are located under the fuselage all setup up for terrestrial based RADAR. Expecting a bottom mount antenna to work for space based operation is at the very least, an exaggeration. As pointed out in COPA June 2016 article by Alan Hepburn, he anticipated a top mount antenna for TCAS and AIREON. This would bring his equipment cost to \$12,000 from \$5600 for his L-3 Lynx. The final installation cost is considerably more.

Operators will benefit in other ways if they equip with ADS-B. This will ensure they are visible to ACAS/TCAS systems of other aircraft, providing a safety benefit to both. (NC-TRD)

Expecting a bottom mount antenna to work would be based upon satellites that are available near the horizon and how far are these away? We all know the problems of radar coverage near a radar rich zone such as Toronto.

3. Smoke Screen.

*What is this all about? **It's all about service and safety at an affordable price.** The FAA has mandated ADS-B by 2020 and added a few carrots to get the EAA and AOPA on-board. Although it split the mandate to 978 & 1090 MHz it was very smart by offering real services and rebates on compliant installations. It also didn't force users to put in top mounted antennae. Further, the 978 frequency added traffic and weather services that cannot be practically added to 1090ES (especially for space based). My uAvionix UAT-echo in my homebuilt picks up these services very nicely. But there is only data available for the US.*

COPA should be focusing on real safety prospects at an affordable price. I'm not replacing my ELT based upon what has been said or promised so far. We need to ask for 978 type weather & data services based upon NavCan's existing terrestrial network of RADAR & radio comms network. The AIREON option just isn't there as an affordable option for non-TCAS aircraft. Also, consider what happens when a US compliant ADS-B pops into Canadian airspace. The 978 compliant aircraft will not be seen by any Canadian ADS-B; the US 1090ES aircraft may not be seen by the space based AIREON. This is not acceptable. My 970 ADS-B was under \$2K on my homebuilt and runs on less than an amp. Let's keep AIREON for TCAS mandated aircraft and concentrate on real improved services with low equipment costs. The NavCan Terms of Reference has basically NOTHING for GA but it may exclude us from airspace that was formerly transponder only airspace.

I hope that when the local chapter consultations begin this year, COPA members will carefully consider the importance of having cost effective ADS-B solutions in Canada that benefit GA not just commercial operators and relay those concerns to COPA National. AIREON holds great promise, but it probably will not be the 'magic bullet' solution that it's made out to be... at least not for GA!

Lee Coulman
COPA 202358

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Editors Comment:

At KWRAA we are so lucky to have Lee Coulman as our VP and Director of Airmanship and Flight Safety. Lee's background in RADAR and aircraft avionics systems gives him some additional insight into current technology issues that leave most of us scratching our heads in bewilderment.

It certainly makes me wonder what hidden talents our other members have that can benefit the rest of us in the chapter. Please consider sharing any specialized skills you have with the rest of the members whether it is through a workshop at a meeting, an article in this newsletter or even just by sharing a few photos of what you are working on at one of the monthly meeting project reports or annual show and tell sessions. We all learn when someone shares an idea or skill with us.

Please share your special talents... It takes a village to raise great aviators... ;)

The Leading Edge

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 CM22 – 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.)

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Vice President:	Lee Coulman	(519) 664-8217 lee.coulman@gmail.com
Secretary:	Open	(Looking for a Volunteer)
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.