

- May 2016 -



Lee Coulman, our Director of Airmanship and Flight Safety gave a great update on ADS-B and GPS at the May meeting. There have been some interesting developments and a lot of new products introduced in the last year.

President's Message

The May meeting was a busy one indeed. It ran a little long, but we covered so much that I hope no one was too put off by the later end time. Besides the great ADS-B update provided by Lee, we had a Show and Tell and an update on a bunch of items that your executive members have been working on for a long time.

In the past week, I added a full page of information and instructions to our website for each of the fly-ins this summer. Thanks to Mac and everyone else who supplied additional information to be included in the more detailed instructions, CFS pages and/or maps.

Be sure to check out the photos and article about our Show and Tell at the May meeting. The ingenuity of our members never ceases to amaze me and I learn something new every time we have one of these events. I could have used Ted's rib squaring jig on the bulkheads when I built my floats!

Thanks again to Clarence for the great meeting minutes and sorry we ran out of time before you had a chance to show us your landing lights at 10,000 lumens each, but a spot is permanently burned into my retinas from the demo afterward in the parking lot. I definitely don't want to be flying too close in front of your plane when you turn those beasts on!

After a long cool spring so far, it's great to see things are warming up finally and we have more opportunities to get out and do some flying and/or get back at building our projects. I'm lucky enough to have finished my floats and I now have them installed on my Highlander. I'm getting in a bit of float time and I'm really looking forward to this summer's RAA fly-ins. I trust you are too!

Don't forget to check out the fly-in information.

2016 is going to be a great year for KWRAA!

- Dan

May Meeting - Show and Tell

As I mentioned previously, the ingenuity of our members never ceases to amaze me!

A number of great ideas were brought forward at the meeting that could be very useful for other builders. Below are just two of the many ideas brought forward at the meeting.

Ted showed us a simple but effective method of insuring that the flange bends in ribs and bulkheads are at 90 degrees between crimped sections. Whether your ribs are handmade or machine made, they are not always truly at 90 degrees. This jig bends the flange at a predetermined angle beyond 90 so that when the material springs back, it returns to 90 degrees to the rib. The undercut angle seems to be about 15 degrees, but it varies with the thickness and type of the aluminum.



Another great idea came from Mike, who used stainless steel accessibility bars made for bathtub handrails to manufacture an exhaust system for his plane. The angled bars are about 45 degrees from straight and weld up quite nicely. The diameter is just about perfect for planes in the 80 to 140 HP range and the price is much better than commercially made exhaust pipes.



These are just two of the ideas from our members. Be sure to make it out to the next meeting in September for more great amateur aircraft building ideas.

Way to go gentlemen!

- Dan

New Fly-In information Available Online!

For a while now, we have been talking about putting together a better resource for anyone wishing to attend one of our summer fly-ins.

For many of us, the location of these events is engrained in our memories from attending them for several years now, but for new members or new pilots, locating these events could be a challenge.

You will now find better maps, instructions and other resources that you can print before attending or upload to your phone or tablet for navigation purposes to get you to the event.

I will put a link with this information next to the fly-in information for each event to make it easy to locate on the website. Go to www.kwraa.net then go to the Fly-Ins and Events page to locate the "More Information" links to the new documents and maps.

These events are potluck for the salads and desserts, so don't forget to bring something to share. Burgers, hotdogs or other main dishes are supplied along with cold drinks by KWRAA through donations at the event. \$5 is the suggested amount but any extra is appreciated to help with our good neighbour program.

C-FDEP is on Floats!

At long last, my Highlander is finally on floats! It's been an interesting and often challenging time getting to this point, but after years of planning and building, I finally have the aircraft and float combination I have been dreaming of for almost a decade now. In the January issue of the Leading Edge newsletter, I explained some of the challenges and provided a few tips for anyone else considering building a set of floats. In this issue, I will talk a bit about the installation of the amphibious floats on my Highlander and my first impressions flying this combination rather than the 27" bush wheels that I flew with for most of 2015.

It quickly became apparent that although my garage/workshop at home was big enough to build the plane in, it would not be big enough to allow me to hang the plane with the wings open while I installed floats. I considered a number of options, but decided to ask Ken Chute if I could use his shop for a day to do the installation. Besides Ken's plane, he has a number of other friends and acquaintances that use his facility to do their float changeovers there. For a donation of \$150 the shop was mine for the whole day, although by the time I got everything over there, we didn't actually get the installation started until noon.

I replaced the standard wing keeper bolts with aircraft grade eyebolts and suspended the plane using Ken's chain hoist. Removal of the large gear legs and tires was relatively easy and the 1/8" brake lines were plugged to retain the fluid temporarily using a pop rivet stem.



C-FDEP just hanging around at Ken Chute's hangar in Puslinch during the Zenair float installation

I knew in advance that I was only going to have one day to do the basic installation, so I prepared as much of the rigging as possible well in advance of the installation. I had used an old fuselage to set up the spreader bars and supports at the correct length and angles to achieve the float to wing angle that I desired, and had one end of every brace wire and rudder cable already connected and secured.



As we slid the floats under the airframe and fastened them, it looked like they really belonged under there

Unfortunately, I was so busy, I forgot to get a photo of the completed plane on floats sitting on the weigh scales, but we managed to roll it up onto the RAA scales and found the all-up weight to be 989 lb. The measured weight includes the hydraulic pump, which I mounted in the passenger side float, hydraulic and brake fluids, and 32 lb of fuel, which was still in the plane from when I flew it the previous week. The excess fuel beyond what was in the header tank (2 gallons US or 12 lb.) was 20 lb., so my actual empty weight with minimum fuel is 969 lb. The aircraft CG moved forward only 0.3 inches from being on the bush tires, so handling and balance hasn't changed much.

Because all of the rigging had been prepared in advance, the installation went fairly smoothly and we were able to have the plane out of the shop by supper hour the same day, allowing Ken to regain the use of his shop and to get on with the next float installation soon afterward.

I was able to keep my plane outside that night and work on tightening up the rigging and

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finishing the rudder cable installation the following day before flying it to Brantford.



Once cross-brace wires were installed and tightened, we moved the plane out of the way for the next one

After talking to Lee Coulman about the project and mentioning that it was ready to try on floats, Lee offered to do the initial water flight with me to ensure I had all of my ducks in a row. So a plan was set in motion to meet Lee in Stratford and we would go flying at Wildwood Lake in the Highlander.



Plane and pilot at Stratford airport prior to our water work on Wildwood Lake near St Mary's Ontario

After checking the rigging once again and verifying that I had a plan, the appropriate safety equipment and a checklist ready to go, we set out to do a bit of float flying in C-FDEP.

As it happens, I was also in the process of raising the gross weight of the Highlander from 1320 to 1550 lb. I had obtained a letter from the manufacturer and submitted the appropriate paperwork along with the fees to Transport Canada to get flight approval for a

climb test at 1550 lb. The interim flight authority allowed us to fly two guys with 3/4 fuel and not even come close to the limit.

Since that time I did the climb test and still achieved almost 500 ft./minute on floats at 1550 lb., so I have received flight authority from Transport for 1550 lb. with all of the restrictions removed, except aerobatic, which I can't do with this aircraft, even on wheels.

So there we were, over Wildwood Lake near St. Mary's, just a few minutes after raising the gear as we left CYSA. We scanned the water from 500 feet looking for obstacles and checking out the water conditions. After our downwind checks, we verbally ran through the seaplane specific stuff... "gear up for water landing"... check; "water rudders up... check; then turning final we slowed down, looked ahead at the long runway before us and lowered the flaps to set up the plane for the descent to water level.



Turning final to Wildwood Lake. Thanks to Lee Coulman for this great photo! (...and some coaching)

After a few landings and takeoffs, I was slowly starting to get the feeling that it wasn't a whole lot different than flying the tail dragger; there were just some subtle nuances that would take a little time to get used to.

Thanks to Lee, I was able to clean up my seaplane checklist and simplify it enough to be able to commit it to memory easily. I have been told that all the gear warning gadgets available for seaplanes will not help much if I don't develop good seaplane flying habits and having a simple effective memorized checklist is a critical safety item on any seaplane.

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Thanks also to Lee for getting some photos of my first time out on floats. A person sure can be busy when you are doing something new... so much to learn and so little time to document the event with a few pictures. I'm really going to have to consider getting a 1080p video action camera too.



Sitting on the water at Wildwood Lake after a successful landing and discussing ways to improve the landings and take-offs even more

By now you are likely asking, "How does it perform on the water?" Well, I can honestly say that I am not disappointed. So many aircraft become a one person plane once they are on floats, but the Highlander does really well and now with my gross weight increase to 1550 lb., I can haul more now than I did on wheels.

The plane seems to be off the water in less than 10 seconds when solo and maybe 15 seconds or so when flying dual, but the floats break free of the surface and the Highlander flies off the water at about 30 knots (35 mph) with just a little back pressure on the stick or temporarily applying the second notch of flaps.



Taxiing in displacement mode, the plane sits quite high on the water with these amphibious Zenair floats

Once I have a few dozen more landings and take-offs under my belt, I will try to get some hard numbers on water performance, but for now it's just a fun machine to fly, on or off the water ...or even dry land!

- Dan

This Space Reserved for Your Article or Story!!!

Didn't get a chance to show off something at our May "Show and Tell" that you have been working on... no problem... send me a photo or two and a short description and I will make sure it gets in the Leading Edge newsletter this summer!

Sharing ideas is what makes the KWRAA so great... so please share!

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Upcoming Events in 2016: (Highlighted lines are KWRAA Events*)

June 4	-	London-St. Thomas RAA Fly-in – Mark Matthy's Warren Field – CWF3
June 11	-	KWRAA Fly-In at Cam Wood's in West Montrose (Get Directions)
June 18-19	-	Great Lakes International Airshow in St. Thomas, ON
June 24-25	-	COPA National Convention in Yarmouth, Nova Scotia
July 16	-	KWRAA Fly-In at Mike Shupe's Mount Forest, ON (Get Directions)
July 25-31	-	Air Venture 2016 in Oshkosh Wisconsin
August 6	-	Gathering of the Classics in Edenvale, ON
August 13	-	KWRAA Fly-In at CMZ2 – Metz/MacPat Field in Arthur (Get Directions)
August 19-21	-	UPAC Convention – Lubitz Field, Plattsville ON
August 20	-	Aviation Fun Day at Waterloo Regional Airport
August 27	-	KWRAA Fly-In at CPR3 in Teviotdale (Tentative) (Get Directions)
August 31	-	Rotary Charity Airshow in Brantford, ON
Sept 3-5	-	Canadian International Air Show – CNE Grounds
September 12	-	September Meeting at 7:30 pm in the Cadet building at CYKF
September 17-18	-	Air Power Demonstration at London International Airshow
October 17	-	October Meeting at 7:30 pm in the Cadet building at CYKF
November 14	-	November Meeting at 7:30 pm in the Cadet building at CYKF
November 25 (TBA)	-	KWRAA Christmas Party in lieu of a December meeting

* 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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Check out the KWRAA website regularly for the latest event details, chapter information and classified ads. <http://www.KWRAA.net>