RAA
RECREATIONAL AIRCRAFT ASSOCIATION
RÉSEAU AÉRONEFS AMATEUR CANADA

The Leading Edge

Monthly Newsletter of the Kitchener-Waterloo RAA

- January 2023 -

Back in January 2022, I wrote an article in the Leading Edge where I talked about rebuilding my Zenair floats after the 2019 accident. This is how my newly-repaired floats looked this summer after several months of part-time work on them. I was in a bit of a rush to get them on the Highlander and experience some of the adventure 2022 had to offer. Some of the sealer/adhesive still shows along the sponsons at the front of the floats. I will work at removing the excess sealer this winter to get them ready for 2023. It's slow work but rubbing it with a crepe block works well.

President's Message

Happy New Year everyone!

I hope everyone had a great Christmas and holiday season. This is certainly a different Christmas for my family, having lost so many of our loved ones (all 3 remaining parents) in the last year, but we still have so many things to be thankful for including good health and thriving children and grandchildren.

The latter half of 2022 was a very busy time for me, flying my new Highlander to 4 of our 5 KWRAA fly-ins and at least as many other non-KWRAA fly-ins and events, as well as a few longer flights with friends to Muskoka and Sudbury area lakes for some fishing and relax time. About 50 of the 75 plus hours I managed to accumulate in 2022 were on floats.

Invariably, the changeover from bush wheels to floats in the spring and back to wheels in the fall are bitter-sweet times, as I realize one entire type of flying is over as the next one begins. Luckily, with the Highlander both types of flying are very enjoyable, but it does require a bit of work to accomplish and is impacted significantly by the fact that I store the plane at home for the winter months.

In this issue I will show you how I trailer the plane to the airstrip in the spring and home in the fall. I will also touch on the float-change-over process, but explore that in more detail in another issue of the Leading Edge.

Please remember that it takes a lot of material to generate an interesting newsletter each month and I would appreciate any articles, stories or photos that any of you could contribute to the newsletter. I really appreciate the contribution many of you have made in the past. Without your ongoing support, KWRAA would not be the best RAA chapter in the entire Universe. 😉

2023 is going to be a great year for KWRAA!

- Dan

Trailering a Folding Wing Aircraft

As most of you know, I take my Highlander home for the winter so I can perform the annual inspection there and of course to save a little money on hangar rental fees when I am not flying. When I originally took Aerial One to the airport for its maiden flight back in 2014, I borrowed a boat trailer from Gary Walsh and modified it to accept my airplane. I have since acquired my own trailer and modified it for aircraft transportation purposes.

Transporting any aircraft can be a bit of a challenge, but there are a few key issues that need to be addressed to prevent damage to it.

The first consideration is finding a trailer that will safely transport your plane without damaging it. If the plane is a taildragger like mine, the folding wing design simplifies the process, but hauling the plane backwards presents its own challenges and benefits.

On the plus side, using long ramps and a boat winch simplifies the loading of the plane.

Rather than using a hand crank, I tighten my cordless drill chuck into the high ratio shaft of the boat winch. After latching the steel cable onto the tailwheel, I simply tighten the cable and slowly walk the plane up the ramps onto the trailer using the drill. It is important to have the plane in a position that maintains about 10% of the gross weight of the loaded trailer on the tongue of the trailer. This is critical in order to prevent the trailer from fishtailing, which can occur if the tongue weight is too light.

Once loaded, I screw down wheel chocks made from a pressure treated 4x4 onto the trailer deck in front of and behind each of the mains to prevent longitudinal movement.

The deck for the mains is made from three 2x8's that are seven feet long and secured with bolts through the trailer's steel frame.

The tailwheel ramp is then fastened to the centre U-shaped rail and the ramp for the mains is strapped to the trailer's steel cross beams just ahead of the wooden deck.

Before moving the plane, it's important to understand the best way to tie down your aircraft. Make sure you properly secure not only the plane, but the moving flight surfaces as well. I secure the plane by cross-tightening the aircraft using ratchet straps (red in photo) from the gear fastening points to the opposite side of the trailer. An additional one (yellow) is fastened over the cabane for additional security. The tailwheel is secured over the pivot arm to the wooden track near the winch, allowing the shock of the tailwheel assembly to absorb the vibration and road bumps.

This works well for my plane, given the firm springs on the trailer itself, which are likely a little too firm to strap the fuselage to the trailer using a solid support. I have seen photos of a Kitfox that had been strapped over the fuselage solidly to the trailer and it severely bent the fuselage longerons at the strap when subjected to road travel. I like to let the plane float on its own suspension with straps limiting the upward travel while securing it to the trailer.

As mentioned previously, the rudder, elevator, flaps and ailerons must all be secured to prevent them from fluttering and damaging themselves as the plane is hauled backwards down the road. Securing the flaps and ailerons is pretty much taken care of with a folding wing design as part of the wing securing process for travel, but the rudder and elevator present a bit of a challenge.

I use a couple of sets of thick wooden hardwood straps (approx. 1"x2") wrapped with thin foam and use rachet bar clamps (front and back) to secure them on both the rudder and the elevator. For personal safety, I add a small piece of bright cloth to the end of the bars to prevent me from walking into one of them… again. Shorter bars pointing up would help!

To off-load the plane, simply reverse the steps. Remove the straps, clamps and rear chocks, install the ramps, use the drill to loosen the winch cable and slowly walk the plane down the ramps using the winch and drill as a brake.

Once I unload the plane, I remove my travel struts and unfold the wings. With a little fuel and pre-flight inspection, I'm ready to fly!

When I fly out of Ken's place on bush wheels for a few weeks until the hangar is available in Guelph, the trailer also serves as an anchor point to tie down the plane. Since the spot is fairly well protected from the wind, this seems to work very well.

Once the weather warms up a bit, I use Ken's shop for a few hours to remove the bush wheels and switch over to my amphibious floats. I expect to do a more thorough article on the change-over procedure in the spring, but here is a basic description of the process.

I suspend the plane using a chain hoist and spreader bar. The bar moves the lift point from the single suspension point to two points directly over the eye bolts used to secure the wings to the fuselage at the leading edge. Note the black tubing that I use to protect the windshield and paint from the chain is actually the two inch diameter hose from my shop vac.

I use an empty 45 gallon drum to support the tail at the correct angle for the floats.

Removing the wheels requires adjusting the height of the fuselage to take just enough weight off the wheels to be able to remove the mounting bolts. Details on the wiring, brake lines and other connections will be covered in the next float article in the spring, but I have attempted to make this process as simple as possible while keeping full functionality of my floats and technical add-ons I have installed. The gear position indicators I described in last month's issue only require one connection between the floats and aircraft and the gear hydraulic pump only requires two wires. I will soon be installing a vertical height warning device like the one in Aerial one, requiring two small connectors with two wires each. Other than that, there are just two brake lines to connect and the steel aircraft cables to the rudder horn and float rudder lifting cable.

- Dan

Guest Presenter Appreciation Award

The Appreciation Awards are completed for the guest presenters at our monthly meetings. I had the pleasure of presenting the first one to Pat Hannah, who did a great slideshow at the November 2022 meeting for our group. Pat has been involved in aviation for decades and is an accomplished aircraft photographer too. Pat's presentation covered many of the annual aviation events in our area, including the fly-in at Roger Deming's airstrip at Damascus Ontario, CDF6.

Pat is a member of the Harvard Association and many of his photos were air-to-air shots of the Harvards and Waterloo Warbirds too.

Upcoming Events in 2023: (Highlighted lines are KWRAA Events*)

January 12	-	January Meeting at 7:30 in the Cadet building at CYKF
February 9	-	February Meeting at 7:30 in the Cadet building at CYKF
March 9	-	March Meeting at 7:30 in the Cadet building at CYKF
Mar 28–Apr 2	-	Sun-n-Fun 2023
April 13	-	April Meeting at 7:30 in the Cadet building at CYKF
May 11	-	May Meeting at 7:30 in the Cadet building at CYKF
June	-	KWRAA Fly-Ins - TBD
July	-	KWRAA Fly-Ins - TBD
July 24-July 30	-	Oshkosh Air Venture 2023
August	-	KWRAA Fly-Ins - TBD
August 18-20	-	UPAC Convention 2023
September 14	-	September Meeting at 7:30 in the Cadet building at CYKF
October 12	-	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 24	-	KWRAA Christmas Party – Details to follow later in 2023

* KWRAA events are fly-in and/or drive-in.

KWRAA Executive Contact Information:
Due to an increase in spam emails, please reach out to me directly for the latest contact information for the KWRAA Executive members. Thank you, Dan Oldridge (519) 651-0651.