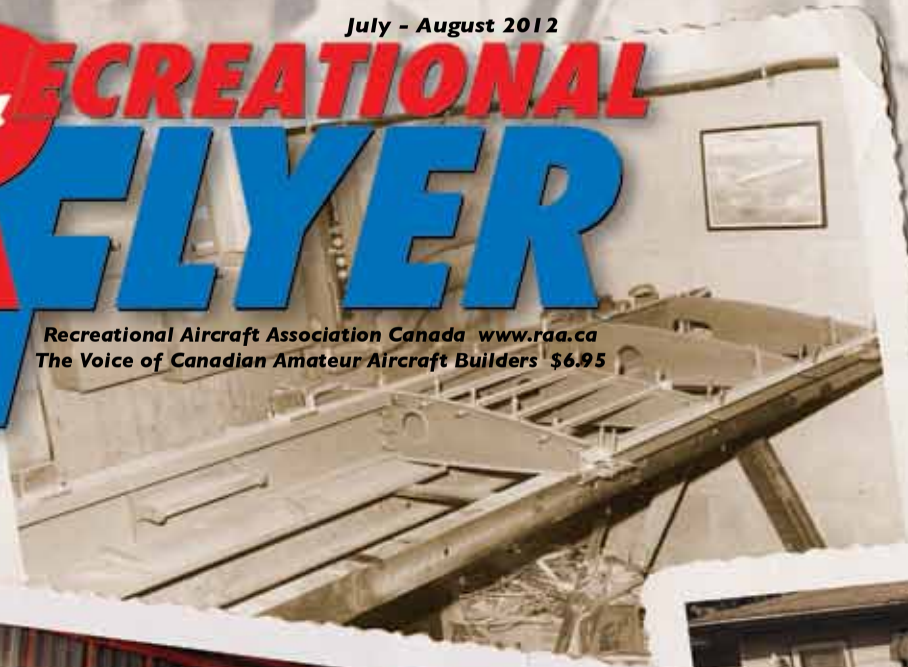
July - August 2012

Recreational Flyer

Recreational Aircraft Association Canada www.raa.ca
The Voice of Canadian Amateur Aircraft Builders $6.95



Father and Son:
Victor Thompson's T-18

RAA
RECREATIONAL AIRCRAFT ASSOCIATION
RÉSEAU AÉRONEFS AMATEUR CANADA

From The President's Desk

Gary Wolf

Jack Greenlaw

This summer we lost Jack Greenlaw, who while he was President of RAA Canada made changes that benefit all of us today. Jack was on the Board when Transport Canada decided to stop inspecting our aircraft, and with Howard Bexon, Jaime Alexandre, Bill Tee, and others they set up the inspection program. This ran counter to the wishes of the EAA, who had lent the use of their name to our organization, so Jack took the steps necessary to make the break and rename us as Recreational Aircraft Association Canada. This took much determination and perseverance both of which Jack had in spades. It is safe to say that without Jack we would not today have amateur aviation in Canada.

Jack began as a toolmaker's apprentice building Lysanders in Hamilton, and he later became a Flight Engineer, delivering B-17's, B-24's, and Lancasters as far away as Karachi India. His amateur building included a Lazair, a Mitchell Wing, and his own Kanuck design, while he flew his own 172 for business. Jack was a strong member of the Barrie-Orillia chapter and he will be greatly missed.

VANS RV-14 ANNOUNCED

Vans showed their new RV-14 two place aircraft at Oshkosh this summer, essentially a 2 seat version of the four place RV-10, for pilots who want more elbow room that a -7 provides. Cabin width is 46 inches and wingspan is 27 ft. The wing uses the airfoil common to the -6, -7, -8, and -10, with slotted flaps.

This plane is designated by Vans as aerobatic and cruises at just over 200 mph on its 210 hp IO-390 Lycoming and claims a range of over 800 nm. The IO-360 may also be used. The -14 kit is prepunched with full sized holes, even the fuselage longerons, and the canopy bubble comes fully trimmed. Vans will offer plug and play wiring harnesses and panels as options.

Wing kits will be shipped in September, with other subkits to follow. The demo plane has tricycle gear but it is rumoured that a taildragger option will be available.

FAA Crackdown on Light Sport / TC and Advanced UL

In Canada it is well known, even to Transport Canada, that many aircraft in our Advanced Ultralight category do not meet its requirements. TC's position is that they register the planes based on the signatures of the manufacturer and the customer, and it is up to the customer to determine if his chosen plane is legal for the category.

The FAA set up Light Sport differently – they step up to the plate to verify that manufacturers are supplying planes that meet the requirements of the category. After rattling their swords for the past few years the FAA began inspecting premises, paperwork, and products, and found that many did not meet the requirements. Rightly or wrongly they went very hard on the Zenith 601 XL and 650. Most recently they disallowed Pipistrel, claiming that these planes were manufactured in Slovenia, a country that does not have an agreement with the US. Pipistrel say that they recognized this awhile ago and set up a factory nearby in Italy, and they further claim that they have many times invited the FAA to inspect. This week the FAA agreed that the planes are being manufactured in an approved country, and Pipistrels can again be sold in the US.

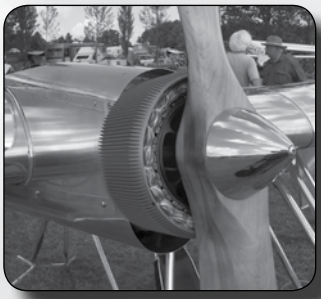
We could do with a bit more inspection of our own Advanced Ultralight category, and perhaps even require that a weight and balance report be a part of the registration process. It would cost Transport Canada nothing to add this requirement. There are currently many hundreds of 2 place

continued on page 33

The Recreational Aircraft Association Canada
Waterloo Airport, Breslau ON
N0B 1M0
Telephone: 519-648-3030
Member's Toll Free line: 1-800-387-1028
email: raa@raa.ca **web:** *www.raa.ca*

The Recreational Flyer is published bi-monthly by the Recreational Aircraft Association Publishing Company, Waterloo Airport, Breslau, ON N0B 1M0. The Recreational Flyer is devoted to the aerospace sciences. The intention of the magazine is to promote education and safety through its members to the general public. Opinions expressed in articles and letters do not necessarily reflect those of the Recreational Aircraft Association Canada. Accuracy of the material presented is solely the responsibility of the author or contributor.

features



columns

George Gregory

One of only 4 airworthy examples of a Ryan SC-W. 2012 Arlington WA Fly-in.
On the cover: Vic Thompson's Thorp T-18. Background by Sanja Gjenero

clare snyder's

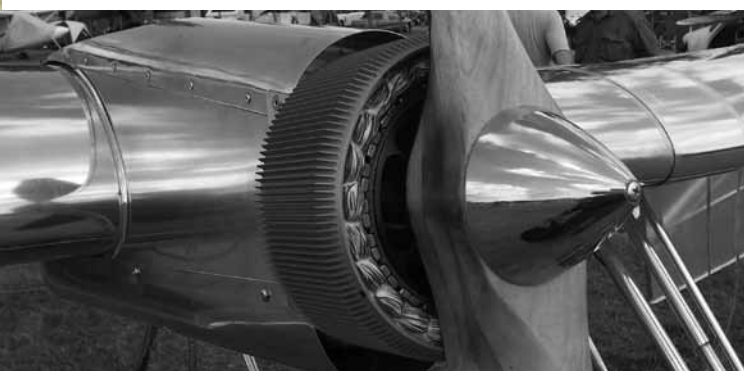
OSHKOSH

Top: Will Fox and his Pegazair
Centre, the new Just Highlander prototype
Above: cutouts in the rear surface of the slats give clearance for the linkage

For many years I have wanted to go to Oshkosh and this year I finally managed to find the time. I have been building a Pegazair in partnership with Clarence Martens, with him handling the airframe and myself responsible for everything ahead of the firewall. One US builder, Will Fox, was attending Oshkosh this year with his O-360-powered Pegazair so this was the year to go. With its moveable leading edge slats, Will's plane has a takeoff roll of only a few plane lengths, and with the flaperons fully down his Pegazair will fly at 35 mph, so at Oshkosh he based it at the ultralight field.

I had a ride in Will's Pegazair and it climbed to the ultralight ceiling of 300 ft like a tennis ball off the racquet and at 35 mph it was very controllable. He lifted the flaperons for descent and the plane glided nicely and landed very short even with flaperons up.

Another STOL aircraft that was very impressive was the Just Highlander LLC prototype with strong bush gear and moveable leading edge slats. These slats are unique in that instead of being mounted on telescoping tubes they are on swing arms, likely because the Highlander wing spar construction prevents telescoping tubes. Cutouts in the rear slat surfaces accommodate the linkage. This plane had a 100 hp Rotax and it too leapt



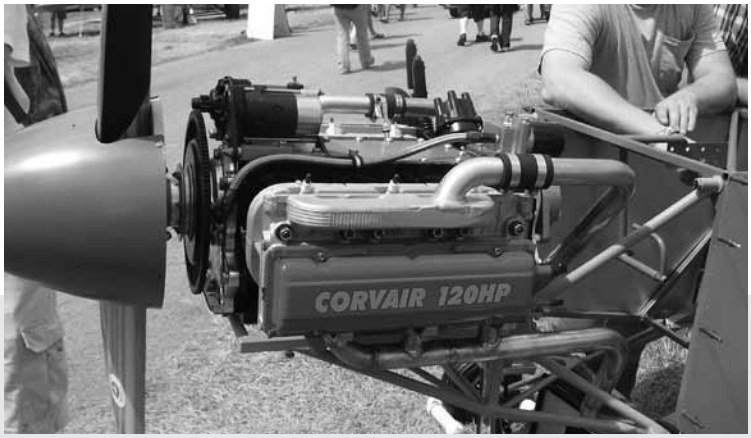
Electric aircraft were all over the place at Oshkosh 2012. Above: Dale Kramer's electric Lazair prototype, an original Canadian design now electrified. Left, a closeup of the Lazair electric motor. The motors fair very nicely into the thick aluminum D-box. The Electraflyer ULS was there, as was Mark Bierle's Electrogull (bottom two pictures) ultralight. Unlike the Lazair, the single motor is mounted facing aft on the trailing edge of the wing.

off the ground.

A Canadian icon, the Lazair was there with its original designer Dale Kramer. Instead of using little 2 strokes Dale has powered his airframe with electric motors and will shortly be selling copies of this plane. His first flight was more than a year ago on a monofloat version from Lake Keuka near Hammondsport NY. He has now thoroughly debugged the electric package and can get one hour duration.

There were a couple other electric planes but little information on them. The Electroflyer looks a bit like an early Sadler Vampire.

Mark Bierle has powered one of his Thundergulls with an electric package and has been flying it for a couple of years. This version is named the Electrogull.



Top: Honda motors continue to be installed as alternative power for various amateur-built aircraft. This Cub's mill is from a Honda Fit. Centre, The Belight part 104-legal ultralight features full controls.
Bottom, FlyCorvair continues to supply affordable power for kit aircraft. A Corvair is found in the author's own Pegazair, and they are particularly common on Zenith designs.

The Electrogull's motor is out in the breeze for good cooling.

Another interesting plane was an Amateur built Cub powered by a Honda Fit engine. Instead of buying a conversion package the builder made his own redrive using several Kevlar V-belts. These are tensioned by a ganged pulley that is inside the belt run because Kevlar belts do not like to be tensioned from the outside. The builder chose the made-in-Alberta SDS engine management system for this installation.

This Fit engine ran smoothly and quietly, and if the belt tensioner is not actuated the prop does not turn, although the engine is running.

One American-legal 254 pound Ultralight is the Belite (left), this one powered by a half VW engine.

My own firewall forward for Clarence's and my Pegazair is a Corvair conversion so of course I was interested in the engines shown by Panther and others. The FlyCorvair tent had Corvairs in several different displacements and horsepowers, and also displayed two alternatives for a crank external main bearing support. One is made to be fitted to an engine that is disassembled, while the other may be retrofitted to an assembled engine.

It was a very hot week this year and I was glad that instead of camping on the field, my wife and I were staying with friends who have a house nearby. The trip was worth it and I saw a lot of interesting stuff that gave me enough ideas to keep me busy for the next few years.

Martin Jetpack expands flight envelope

The Martin Jetpack recently flew to an altitude of 5000 feet, followed by the planned deployment of its ballistic parachute.

The company is focusing on the disciplined work of expanding the flight envelope – flying faster and in stronger winds. Along with the high altitude flight, the Martin Jetpack is now flying regularly (unmanned) at 50 kph in winds of 15 kph with gusts of up to 10 kph.

Their plan is to release the first manned Jetpack in the middle of 2013 – suitable for search & rescue, police, and other Government services.

The personal Jetpack will follow about a year later.

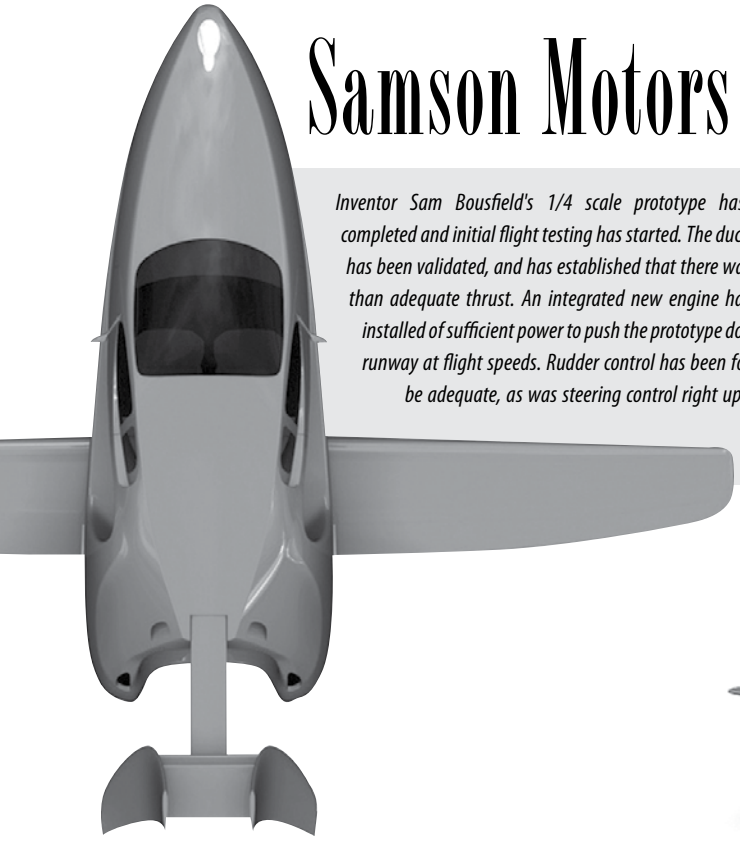
Martin is presently seeking investors willing to deposit about $20,000 CAD to help them move to production of this fascinating vehicle.

For more information, contact:

The Martin Aircraft Company

www.martinjetpack.com

Samson Motors Testing Scale Prototype



Inventor Sam Bousfield's 1/4 scale prototype has been completed and initial flight testing has started. The ducted fan has been validated, and has established that there was more than adequate thrust. An integrated new engine has been installed of sufficient power to push the prototype down the runway at flight speeds. Rudder control has been found to be adequate, as was steering control right up to lift-off. Expect a video on YouTube in the near future as testing continues. Progress Page postings and pictures of protoype construction can be found at http://www.samsonmotorworks.com/newsletter-blog/

Over two thousand people from around the world visited Samson's booth at Oshkosh and Bousfield gave several talks to crowds ranging from 80-100. He was interviewed for two television spots for EAA TV, one of which will be included in a History of Aviation series being produced.

For more information, check out http://www.samsonmotorworks.com.

Going IFR

by Tom Martin

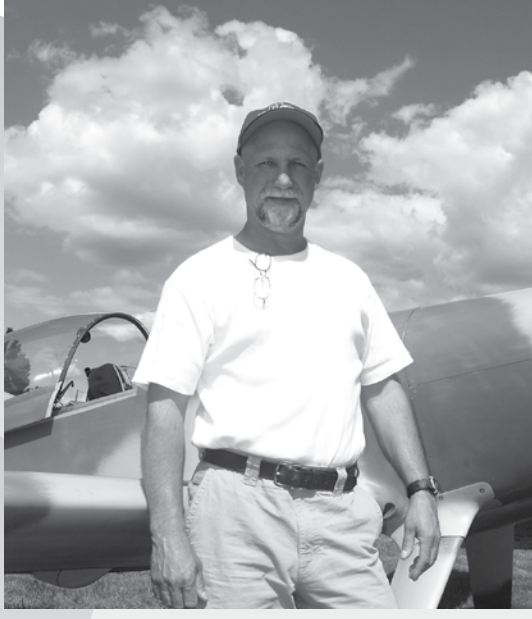
I have been flying

for almost thirty years, 2100 hours, and there have been a few times when it would have been really convenient to climb through a cloud layer up to sunny skies. This scenario is especially true in southern Ontario where the cloud-forming Great Lakes surround us. I was also at a point where I needed another flying challenge to keep me interested. During the last fourteen years of flying Rockets I have been blundering around the skies at higher altitudes and at speeds much similar to light twin aircraft. I am often on flight following and I was hearing the language of IFR but not really knowing what was going on, and this had piqued my interest.

Three years ago I started IFR training, and with about 10 hours of hood time in a 172 I felt confident that I could master the flying part of an IFR ticket but there was no sense spending more money on training unless I could pass the written test. I started studying on my own, got bogged down, and let it rest for another three years. This unfinished business was bugging me so this past fall I dedicated myself full time to studying for the written IFR exam. It took me three months to get ready and I found the process to be very difficult. Many take the week long course in Toronto and that was my fallback if I was unable to succeed on my own. Basically, it had been 35 years since I had written exams of this difficulty and my brain has essentially become that dried up sponge that you find in the back of the sink cabinet; it will work, but only if you beat it up and soak up little bits of moisture at a time.

With the exam passed I continued my flight training at the St.Thomas Flight Centre. My Rocket was not really suitable for training as there are no rear seat instruments, nor does it have dual controls. Although flying the plane itself was not difficult there is a lot going on in an IFR scenario, and again it took quite a while for me to come to grips with the discipline required for IFR flight. Finally with my brand new personal rating it was time to get my EVO rocket legal for IFR flight.

First off I was very fortunate to have Mike Skoczen of Transport Canada to deal with in regards to getting my VFR-only restriction lifted from my aircraft, C-GEVO. It is also worthy of note that he treated this matter very seriously; he sat me down and made sure that I realized the implications of the type of flying that I was about to embark on. As proud as we are of the machines that we build they are not tested as well



as certified aircraft and are indeed, all unique aircraft. We must keep in mind that in the IFR world we are not just putting ourselves and our passengers in a different risk category - we are also placing other aircraft at risk if we or our aircraft do not meet the standards required of IFR flight.

To get the VFR only restrictions lifted from our aircraft the plane has to meet certain criteria. This is covered in the CARS, with specific issues in 605.18 and 605.16. Basically, and this is not all-inclusive, you will need a heated pitot, an alternate static source, all the equipment required for night VFR, alternate flight instruments, and two "certified" navigational sources. Before doing my flight training I was convinced that my GNS 430W with the GPS and VOR would be more than adequate. However if this one box quit I would not be able to do a proper approach. As much as we like to think that a hand held Garmin 496 etc. would fill that niche, these are inadequate. Many times during my training it was helpful to have a second VOR tuned in to help when finding an airway intersection. Thus after attaining my rating I had no reservations in replacing my Com 2 SL40 with a SL30 Nav/Com. A second certified GPS would likely have been a more practical backup Nav, as GPS navigation is rapidly becoming the first choice for both enroute and approach requirements. However my panel space is limited and thus the smaller SL30 made sense.

Backup systems, either electrical or vacuum, need to be considered for IFR flight and will likely be required as part of the process. A pitot static system check will have had to be done by a certified shop within the past two years. This is called a correlation check. All the equipment must be installed properly and specific logbook entries need to be made regarding your equipment and testing process. A letter asking for removal of the VFR restrictions needs to be sent. That letter must include your equipment and the type of approaches and enroute procedures you intend to do. There is some specific wording that relates to GPS radios found in the Canadian Aeronautical Information Circular 16/08. Some older GPS units that are no longer supported by companies may not be accepted as suitable. I would suggest spending time with your specific Transport Canada representative regarding the proper wording for logbook entries before entering them in your logs. As I had changed equipment a new updated weight and balance was required.

we are also placing other aircraft at risk if we or our aircraft do not meet the standards required of IFR flight.

There is a fee that must be paid, and in my case I had to make a trip to the local office with my logbooks and related paperwork. When they had been examnined and approved a new Certificate of Airworthiness was prepared for my airplane. It looked just like the previous one except the wording for "VFR only flight" was removed. It seemed like there was a lot of paperwork involved but going through the exercise also gave me an opportunity to review all of my documentation and to confirm some of the equipment choices that I had made.

I now have the legal right to fly in cloud and in theory I have the skills, but I believe that I am now more cautious about adverse weather than when I started this whole process! At the time of writing this article I have been on five or six IFR flights conducted in beautiful VFR conditions. I really need to get the radio jargon down and to become familiar with the process itself before I actually add the stress of IMC conditions. Now that both the plane and I are legal I am waiting for some IMC conditions in which to file IFR and go flying with my instructor. Single pilot IFR is a real challenge, at least for me, and I would not consider flying in IMC weather if I did not have a two-axis autopilot. The Rocket and RVs are delightful aircraft to fly, but they have very sensitive controls; as such they are not that easy to keep straight and level if you are hand flying and having to set radios, check maps, write down and repeat clearances etc. Turbulent IMC conditions would be a real challenge. Even though my intentions are to use this new skill and equipment to get through cloud layers I have to be prepared for the situation in which the expected thin layer is not as predicated and the flight is done in full IMC conditions. At this point I am not yet ready for that scenario! R

A month or two ago, John Macready, Chapter 85's President, suggested at a Chapter executive meeting that each of us should consider wrting an article for the Chapter's Turn & Bank newsletter, or maybe for the Recreational Flyer, or maybe even both. I agreed to write something but had no idea at the time what topic I might pick.

Then interest picked up in using the Recreational Aircraft Association scales, which I manage for Chapter 85.

By Bruce Prior

Left: Peter Whittaker and his plans-built Zenith. Below, calibrating the RAA scales.

I had heard comments that the scales had seen some heavy usage and might no longer be accurate. The scales wouldn't be used if they were suspected of being inaccurate. Clearly, calibration was necessary, calibration that wasn't mysterious, but easy to understand and trust. The scale instructions explain calibration but there are a few catches in the process, the primary one being that you must have a precise 200-pound weight. They suggest you might weigh yourself at the local drugstore, taking along ball bearings, fishing weights or whatever to bring your weight to exactly 200. Of course you mustn't eat, change your clothes, or do anything else that would change your 200-pound status before you calibrate the RAA scales against your precision 200-pound self.

I thought about this and put the question to my friend, Joe Shewella, a master of odd jobs and practical designs, whether electrical, mechanical or civil. He was intrigued and said he would think about it. A week or so later, I entered the Coffee Shop at Delta Heritage Air Park to find four black boxes and a note suggesting they were for me. They were black and heavy and I didn't at first realize they were the weights I had asked for.

Joe had built four steel boxes, filled them with old fluorescent light ballast transformers and welded them shut forever. Each one was designed to be just under 50 pounds for "easy" carrying. He also provided a bag full of ballast transformer plates from which we could top up the weight of the four boxes to get exactly 200 pounds total.

Now all I had to do was weigh the boxes and work out the amount of weight to add to reach exactly 200 pounds. That was when another Chapter member, Peter Klein, asked about using the scales. Peter has a fabricating business in Langley and as a side project he's building a helicopter in his spare time. I told him I needed some accurate weighing done and he obliged. We weighed the four boxes on a precision electronic scale and took many readings which we averaged for a final figure for each box. That gave us a number for the top-up weight required, which I recall was 5.6 pounds. Rather than use the transformer plates Joe had given me, Peter found some leftover cylindrical stainless steel rods about 1.5 inch diameter and selected pieces that would add up to approximately 5.6 pounds. When he had just a little over 5.6 pounds, he ground one of the rods down until it and the other rods totalled 5.6 pounds. The rods, together with the four boxes weighed exactly 200 pounds. A calibration weight was born.

Since then, two Chapter members have used the scales and the calibration weights, and advised me that the calibration process is easy to do.

About this time, a new member, Peter Whittaker, joined the club and told us that he had just about completed a Zenith 601 project. It needed to be weighed. President John saw an opportunity for a technical visit and he

scheduled a project day at Pitt Meadows Airport in June to weigh Peter's airplane. This was to be an opportunity for Peter to get his airplane weighed and an opportunity for all of the Chapter members to see a demonstration of aircraft weighing. To add to the program, Chapter member Rob Prior agreed to present Aircraft Weight and Balance at the Chapter General Meeting a few days before the weighing at Pitt Meadows.

The RAA scales are stored at our hangar in Langley, and in late May I decided I would test them by weighing our Cessna 150. The scales aren't approved for certified airplanes but this was only a trial weighing. It would be an opportunity to discover all the little things that can go wrong and to list all the auxilliary equipment that might be needed for the Pitt Meadows event. I had never used the scales or seen them used so I was a good test case. It was a quiet Tuesday at Langley and no one was around to help. I thought I would try to do it alone and see how far I would get.

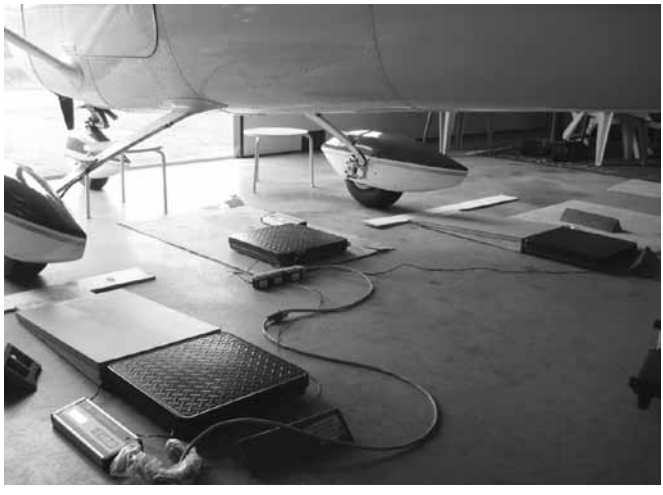
I unpacked the scale units and found that they each consist of a scale platform, an electronic processor/display unit and a dc power supply. So the first thing I discovered I would need is a multiple receptacle or power bar, and an extension cord to plug in the three power supplies.

Each electronic display has a small switch inside the unit. Flipping the switch changes the scale mode from "weigh" to "calibrate." I switched each scale to calibrate and loaded the weights on carefully. Each scale displayed 200 pounds plus or minus a pound or so. I adjusted each scale to exactly 200 pounds and then switched it back to weigh mode.

I laid out the units near each airplane wheel and positioned the ramps for the main wheels

The instructions say the scales must be ON before applying load so I switched them on before pushing the Cessna up the ramps.

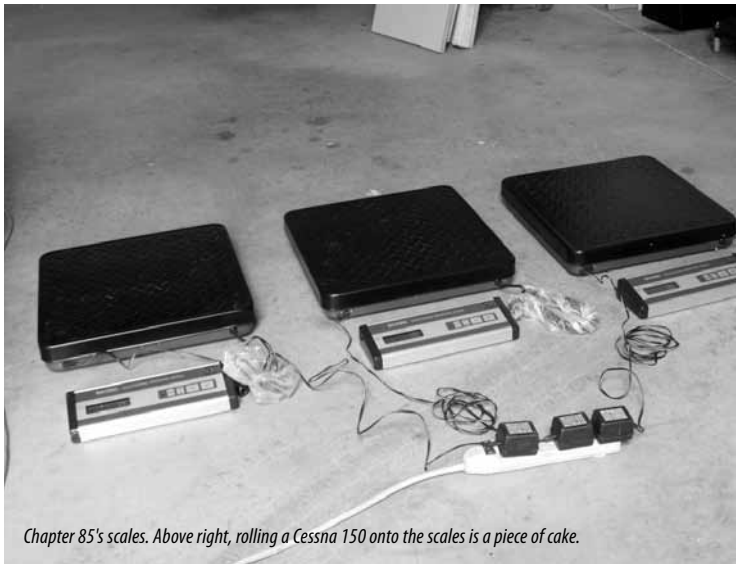
The Cessna 150 was easy to push onto the scales



once I added a few intermediate pieces of wood at the thin edge of the ramps. Before I added them, the Cessna would just bounce back every time I took a run at the ramps. With the additional pieces in place, it went up the ramps easily. I later cut these pieces to length and added them to the scales storage box for future use.

Next I loaded the Cessna's stabilizer with a box of oil to hold the tail down so that I could position the third scale under the nosewheel. With the scale positioned, I lowered the nose and the airplane was ready to weigh.

It was only then that I thought about what was in the airplane and what should be in the airplane for weighing. This should have come first. I decided that everything that would almost always be on board should stay (this was an incorrect decision as will be discussed later). I took out the cargo net and the cargo bag and its contents. I took out the flight bag with the navigation maps, books and aids, tie-down pins, and miscellaneous small tools but left the journey log, POH, first-aid kit, and the regulation-required paperwork. I left the two headsets



Chapter 85's scales. Above right, rolling a Cessna 150 onto the scales is a piece of cake.

plugged in on the basis that they are always in the plane whether two persons or one are on board, and left in place the portable panel-mounted Aera 500 GPS. I removed everything from the glove compartment except the fuel dipstick, the control lock and the fuel drain water tester.

Weight and Balance Report					
Prepared 2012-06-05					
First: Weigh in 3-point Attitude:					
	Component	Weight			
	Nose Wheel	0			
	Left Wheel	511			
	Right Wheel	524			
	Tail Wheel	100			
	Total Weight	1135			
Second: Weigh in Flying Attitude:					
	Component	Weight	Arm	Moment	
	Nose Wheel	0	0	0	
	Right Wheel	526	60	31560	
	Left Wheel	539	60	32340	
	Tail Wheel	70	235.75	16502.5	
	Totals	1135	70.84	80402.5	
Adjustments:					
		Weight	Arm	Moment	
	Fuel R	67.2	70	4704	
	Fuel L	68.8	70	4816	
	Net:	999	70.95	70882.5	
Center of Gravity Limits:					
	Forward	68.7	in		
	Rear	76.8	in		
Example Calculations:					
	Example – Gross				
	Aircraft	999	70.95	70882.5	
	Fuel	228	70	15960	
	Pilot	185	87.4	16169	
	Passenger	170	87.4	14858	
	Baggage	15	117	1755	
		1597	74.91	119624.5	
	Example – Forward CG – Light Pilot, Full Fuel				
	Aircraft	999	70.95	70882.5	
	Fuel	228	70	15960	
	Pilot	100	87.4	8740	
	Passenger	0	87.4	0	
	Baggage	0	117	0	
		1327	72.03	95582.5	
	Example – Aft CG – Heavy Crew, Heavy Baggage, Low Fuel				
	Aircraft	999	70.95	70882.5	
	Fuel	0	70	0	
	Pilot	185	87.4	16169	
	Passenger	170	87.4	14858	
	Baggage	51	117	5967	
		1405	76.78	107876.5	
	Example – Aerobatic Gross				
	Aircraft	999	70.95	70882.5	
	Fuel	190	70	13300	
	Pilot	185	87.4	16169	
	Passenger	0	87.4	0	
	Baggage	0	117	0	
		1374	73.04	100351.5	

One person can weigh an airplane if he or she can level it and roll it onto the scales alone but it's much easier, safer (and more fun) to assemble a crew.

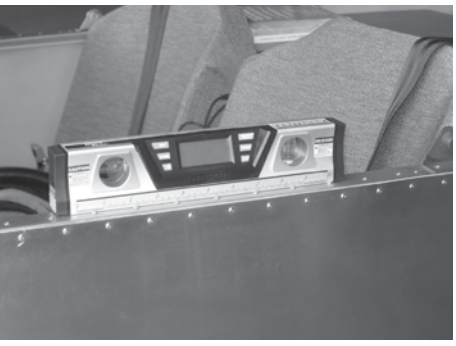
The next issue was fuel and oil on board. The tanks were quite full but not completely full. Since this weighing was an exercise only, I didn't concern myself further with the fuel except to measure the contents of each tank. If this had been a formal weighing, I would have had to empty the tanks of all useable fuel or fill them completely. Filling them completely would probably be the easiest approach. The oil tank was filled to 5 quarts, a level we try to maintain, so I would leave 5 quarts there in a formal weighing.

The first weighing provided the total weight of the airplane. However, the weights required to calculate the centre of gravity must be weights obtained while the airplane is level. The leveling datum for the Cessna 150 is the top of the tail cone between the rear window and the fin. I tipped the tail down again and removed the scale from under the nosewheel, leaving the main gear high on the scales and the nosewheel on the floor. Fortunately this brought the airplane to a level position and I took the main gear weight readings again. Subtracting these weights from the total weight obtained earlier provided the aircraft-level weight of the nosewheel position without using a scale.

The scales are each rated 1000 pounds. The Cessna weighs about 1050 lb empty, so when I tipped the tail to remove the nosegear scale, the two main gear scales each supported a little over 500 lb. If we had lifted a wing to place the second main gear scale, the scale already under the other main gear could have been temporarily overloaded. Care must be taken to avoid overloading during the setup stages. The use of ramps avoids many of these problems.

I rolled the Cessna off the main gear scales and the job was done, except for cleanup and repacking the scales. I now had a good understanding of the scale calibration and operation and had discovered the other tools and equipment needed. Now I could contribute to weighing Peter Whittaker's Zenith.

About a week later, Rob Prior presented the calculations necessary for aircraft weight and balance at the RAA Chapter 85 June general meeting. He had set up



Upper left: making sure the aircraft is absolutely level is key. The Zenith's cockpit sill serves the purpose.
Upper right: rolling the Zenith up onto the scales was easy. Above: setting up the scales for the Big Weigh In.

the calculations on a spreadsheet and went through the steps with us for both taildragger and nosewheel aircraft. He also discussed the equipment list which must be included as part of the weight and balance report.

Rob uses a spreadsheet for all of the weight and balance calculations and adds a separate page/tab to for the equipment list. For his RV-6, "Tweety," he has the empty weight and balance on one tab, the equipment list on another, the limit calculations on another, and the actual weights on the last page. With this arrangement he can easily pop in actual pilot/passenger/baggage weights for any flight on that last page and immediately get a current weight and balance and centre of gravity. And if he swaps an instrument, for example, he can update the equipment list and immediately obtain a new weight and balance complete with calculations and a spreadsheet ready for daily use.

There was some debate about what should be on the equipment list. Should the headsets be considered a standard part of the aircraft? Some thought yes, some no. The CARs say "any item not forming part of the type design shall be entered on the equipment list with its associated weight and moment." For a homebuilt aircraft where the headphone jacks are built in, it could be argued that the jacks and headsets are part of the type design. On that basis they would be in the aircraft when it is weighed and wouldn't be listed in the equipment list. But perhaps not so for, say, a Cessna 150 which didn't originally have headsets and jacks. If they were later added, the equipment list should have been amended to list them with their weights and moments.

On June 9, a bunch of RAA members converged on Pitt Meadows Regional Airport at the Pacific Rim Aviation hangar. Peter was there waiting with his beautiful Zenith 601.

We laid out the equipment for the weighing: the scales and their display units, the stack of calibration weights, two ramps, a roll of painters tape, an extension cord, a power bar, a plumb bob and string, a level, a felt pen and a measuring tape. There was also a box of Tim Horton's donuts and a supply of hot coffee (not shown) to keep the crew energized.

We were going to calibrate the scales again, but Josef suggested we weigh the calibration weights first to see if the scales needed calibration. Great idea! All scales were within a pound of 200 pounds and we agreed they were calibrated.

At this point I realized that what we had just done should become standard procedure when releasing the scales to a member. I will weigh the calibration weights and if the scales read 200 lb, I'll release them to the member fully calibrated. If they don't read 200 lb, I'll adjust them before releasing them.

The Zenith was light, and there were many helpers so moving the Zenith on to the scales was easy. It took only five minutes or so to position the aircraft on the scales and note the weights at each wheel. Also the Zenith sits level on its gear so no further leveling was necessary.

The weighing took surprisingly little time. With three scales and instant electronic readout, the figures were obtained immediately. All that was left to do was calculate the level weights and then do the centre of gravity calculations with various loading conditions. Rob did quick hand calculations to get rough figures for Peter. The C of

The weight and balance crew: L to R John Macready (Chapter President), Bruce Prior (Chapter Custodian), Rob Prior, Peter Whittaker, George Gregory (Recreational Flyer and Turn & Bank Editor), Tim Saxton, Josef Sircezj, and (kneeling) Cyril Henderson.

G was well within limits and the total empty weight was slightly above the designers specified figure.

Peter has a final inspection coming up. We hope it all goes well and that we'll see him in the air soon.

Conclusions

The RAA scales are simple to use. They are accurate, stable, and don't need repeated recalibration. Calibration should be done only by the chapter member assigned to managing the scales.

Setup for weighing, including collecting all needed tools and accessories, can take an hour or more.

One person can weigh an airplane if he or she can level it and roll it onto the scales alone but it's much easier, safer, and more fun to assemble a crew.

The airplane will weigh more than expected. R

References

Aircraft Weight and Balance Handbook
FAA-H-8083-1A (2007)
U.S. Department of Transportation
Federal Aviation Administration
Flight Standards Service
Get it from AOPA (see below).

Back To Basics: Weight and Balance
Jay Wischkaemper
Southwest Aviator Magazine, Nov/Dec 2001
http://www.swaviator.com
AOPA Articles On Weight and Balance
http://tinyurl.com/829wa9o

Center of Gravity of an Aircraft
Wikipedia
http://en.wikipedia.org/wiki/Center_of_gravity_of_an_aircraft

Weight and Balance
http://www.aerotraining.com/.../AC%2061-23C_Chapter_4_Canada.pdf

RAA Scale Instructions
http://raa85.b4.ca/bookings.php (look for the Instructions link under "Tools.")

Rev 3.
14 July 2012

Decide in advance what you will weigh. Fuel and oil should be removed or the quantities and their centres of gravity should be established. Generally, all equipment not part of the type design should be removed from the aircraft. Collect and assemble all equipment at the airplane before mounting airplane on the scales. Wherever possible, use ramps to load aircraft on to scales. This avoids possible scale overloading when only one wheel is loaded and the other is to be lifted on to the scales. Weigh first with all aircraft wheels on scales but aircraft not levelled. Then weigh aircraft with only main gear on scales and nose or tailwheel lifted or dropped to achieve level aircraft. Calculate nose or tailwheel weight. To improve accuracy and eliminate errors, rotate the scale positions and weigh again (three weighings total). Use a combined spreadsheet for the calculations and the equipment list (makes it easy to try many loading situations and easily accommodates occasional equipment changes).

REBE

First, a word of thanks to the various members of the Rebel list who have helped me with this project.

by John Davidson

I won't mention you by name for fear of embarrassing you or unleashing a torrent of shameless bloggers on you. You know who you are and how deeply I am in your debt.

My 12 year old nephew and I set out early from Edenvale ON (CNV8) on June 30 under clear skies and moderate temperatures but into a significant headwind. The headwind was so bad, we had to make an unplanned fuel stop at Gore Bay. The scenery was spectacular, by Ontario standards. Trees and rocks and lakes, little towns, not many airports.

Michael has the makings of a real float-plane pilot. the very first time we went above 2500 feet he got a nosebleed!

Great kid. No fuss, no drama, but no tissue either. Barf bags a-plenty, but no tissue. I didn't even have my dip-stick rag in my pocket. So he just held his nose gently and tipped his head forward a bit and in due course it stopped.

We fueled again at Wawa, right across from the Big Goose. I'll admit right now that I'd rather face an extra fuel stop here and there than endure the anxiety of not knowing if I've got enough. When I did the arithmetic, we would have made Wawa without the stop in Gore Bay, but that last 1/2 hour would have been hellish.

A short hop to Marathon brought us to a lovely self-service fuel kiosk which would have been great had my VISA not choked. Now I knew I'd cleared the balance before setting out, but for some reason that made me look suspicious so they froze the account. After 30 minutes on the phone to VISA all was well.

We then tackled a 3 plus hour leg to a fishing camp north of Ignace. I had exchanged E-Mails with them and scanned the satellite photos of their location and was fairly confident their lake would be tight but do-able. Michael was very impressed with our first water landing, and we taxied in down the river. Docking was a challenge as it was not a particularly float friendly dock but we made it in without bending or denting anything, and neither of us got wet. So it can't have been that bad.

EL RAMBLE

We secured the plane, checked in, and got a couple of hours fishing in before dark and bugs drove us in. I'd love to say we caught our limit and never had to cast more than twice without a strike, but alas, we were skunked. Nada, rien, pas-debugger-all. Oh well, why should it be any different this time.

July first, Canada Day, and my wife's birthday:

The morning was warm and clear and windless, as I had feared. The dilema: wait for a wind to come up, but have hotter air, or try with glassy windless conditions. I figured I had enough gas (just enough) to try again later if my glassy technique was insufficient. First try was a straight run, flap change with left float lift. No go.

Second was a step turn, flap change with left float lift. No go.

Finally, a straight run, flap change with left float lift with a real jerk on the stick to get us unstuck. Once off a longish run in ground effect to get some speed going, while easing back on the flaps. We were fortunate in that the lake had a low weedy area at one end so we didn't have to climb immediately. I'm not sure if it was my technique and timing , or the wake we'd stirred up on the first two tries that made the difference.

So it was a quick flight to Ignace for fuel and by the time we got there there was a nice chop on the water. The folks at the Ignace Waterdrome were great, and while we were there a Beaver and an Otter came in to dock. Awesome.

Maybe it was the distraction that caused me to lose my right gas cap there!

So it was off to Steinbach MB, unknowingly losing gas all the way. More lakes and rocks and trees. I love it.

Since it was a fairly long leg, I started a discussion of weight and balance with Michael. He's pretty bright and catches on quickly and isn't afraid to ask when unsure. I explained how the centre of lift acts at one point along the plane and how the centre of gravity acts at another and how the horizontal stabilizer and elevator compensate for the discrepancy. Of course the compensation comes at the cost of increased drag.

I had told him about flying hands off in my old ultralight, and how once trimmed, in steady air, it would climb, descend or turn all controllable by how I sat. Then I realized, we were in very steady air over Lake of the Woods, with no traffic, so we leaned way forward and started to go down at 300fpm , leaned back and we started to climb at 100fpm, lean to the right...you get the idea.

So we pressed on to Steinbach where they have a very user friendly fuel system. They were also having a Canada Day Festival in the heritage park across from the airport so we got a traditional Mennonite lunch for less than a gallon of gas. and speaking of gas...

Sadly the gas cap store was closed for the holiday so out came the duct tape. (Hint: use fresh duct tape each time because the gas splashes and degrades the adhesive) And VENT IT!!!

We set out for Brandon and had a pretty easy time of it. There was some turbulence and I had some trouble finding a trade-off between RPM, Leanness and oil temp. My oil temps love to run high in cruise, but can do circuits all day. Any suggestions?

When we passed Portage la Prairie there was an amusing message on their comm frequency. Something like "We're taking Canada day off, so if you're brave enough to enter our airspace without us, go for it!" I paraphrase, but that was the essence.

There was a lonely dude selling gas at Brandon and we were too late to visit the British Commonwealth Air Training Program Museum there. That was a disappointment because I had done a lot of research on my Uncle Joe's crew in Bomber Command in WWII and wished to pay a visit

and my respects (see: http://www.geocities.ws/skidaddy20000/). But afternoon convection was building and we were hoping to make it to Swift Current.

Just past Moose Jaw I noticed that the horizon straight ahead was no longer distinct but sort of ragged and moth-eaten. I couldn't find the frequency for FSS (should have had it handy), but I pressed on a bit figuring I'd turn back to Moose Jaw if necessary. Clearly a thunderstorm was developing but it looked like I could swing south of it by Old Wives Lake. I got about half way and saw it wasn't one thunderstorm but two with a clear wide gap between them. With visions of threading the needle and flying up the gap I headed in. The air was steady, there was no rain and it even seemed to be getting brighter. Before I could congratulate myself, BANG BANG, two of the most brilliant bolts of lightning I've ever seen flashed to earth right in the middle of the gap ahead. OK we're going back to Moose Jaw. I reversed out of the so called gap and before long noticed the storm was moving off the north, so again tried to go around to the south, and we might have made it, but I looked at my gas situation and decided we might make it but we might not.

I got about half way and saw it wasn't one thunderstorm but two

The GPS was great. Pushed the Nearest Airport button and presto Gravelbourg Sask 15 mi south, 2500' paved runway, Avgas and reachable. But our problems weren't over yet.

Half way to Gravelbourg a gigantic plume of smoke was rising in the air. Some farmer was burning stubble right in the middle of our track. We deviated just enough to miss the densest of the plume and carried on. In view of the uncertain fuel reserves, I decided to land downwind and without inspecting the strip.

And there, at the threshold of 17, was a sheet of plywood with a giant X painted on it. No matter, no time, no doubt we had to get on the ground now. It was a fine landing considering the stress I had put myself under. "Down and Clear" had never sounded as sweet. I don't think Michael knew how desperate things were getting.

At the Club House was a list of whom to call for after hours fuel... surcharge $10. In twenty minutes a delightful young couple arrived with the key to the pump. After fueling up and doing the math, I found we had had 5 USG left. Enough if flying straight and level, but little enough to let air get entrained into the system with a seious bump or steep approach. Still legal though.

Rene and Dave went back to finish their dinner but insisted we should call them for a ride into town once we'd secured the plane. Michael found a clutch of killdeer eggs sheltered in a frost heave in the apron. And a lovely prairie evening developed with more sky than you can take in and the soft smell of burning stubble. Some times I really envy you folks with colour vision.

Rene and Dave were good to their word and came back, gave us a tour of their town and dropped us off at the motel where they had kept the kitchen open for us, knowing we'd be hungry. Rene and Dave even insisted we call them in the morning (holiday Monday) for a lift back to the airport.

But when the time came, we

continued on page 35

Across Canada

RAA Chapters in Action

RAA Chapter 4975 2012 Annual Fly-In

About 50 pilots in the Chatham area who attended our Gala were treated to an excellent breakfast, a very informative Safety Seminar, and found bargains galore at the Fly Market.

Breakfast was served up by our local Optimist Club. About 80 people enjoyed back bacon on a bun with homefries, juice and coffee. No one went away hungry. The weatherman doublecrossed us. No rain or inclement weather had been forecast, therefore many local pilots flew in, but then it started to cloud over, and before long it was pouring rain. So much for forecasts. The noise of rain hitting the hangar roof made it impossible to carry on a conversation., and next year we hope to have a sound system.

Our Guest Speaker, Duncan Williams from Transport Canada, had to wait until the worst of the storm was over. He then made an excellent presentation about being prepared for your flight, covering the many details from aircraft airworthiness, pilot airworthiness, charts, maps, and even money. The overall emphasis was on staying ahead of the airplane at all times. His presentation was enjoyed by all. It was also very apropos as he had to plan around the weather. All attending pilots received their biannual logbook certificates. A lunch barbeque was served and goodbyes said all around. The rain left as quickly as it came, resulting in a nice sunny spring afternoon for pilots to fly home. Please spread the word that the place for a recreational pilot to be on the last Saturday in May is at The Chatham Breakfast, Safety Seminar, and Fly Market. See you next year.

Gerrit van Vrouwerff

Top: Alex Routh showing Chapter 85's aircraft to children at the Boundary Bay Airshow. Above: Arnold LeCunff and his newly washed 152 at the Chatham fly-in. The event was successful despite the unforecast rain.

RAA Chapter 85

Boundary Bay Airport held a large airshow (free!) in late July featuring a number of local homebuilts, aerobatic demonstrations and displays. Chapter 85's Turbi was on hand with member Alex Routh showing the club airplane to the public and distributing copies of the Recreational Flyer to people want-

ing to know about the organization.

RAA Toronto Rotorcraft

A group from the RAA -Toronto Rotocraft Club got together on August 12, 2012 at the Wingham Airport to see, hear, review and discuss a fellow Member's gyro. It is a single-seat derivative of the basic Bensen B8-M design with a "tall tail" and a sprung suspension system. It is powered by a Rotax 503 A/C engine with dual ignition and carbs.

The rotor blades are the Dragon Wing brand from Rotor Flight Dynamics and are the secret to success in this machine (http://www.rotorflightdynamicsinc.com/dragonwings.html). With most other rotors the 50 hp engine would probably not have a good enough climb rate. Our thanks to Don Hundt for providing his machine and the setting at Wingham Airport for a great gyro-day!
Jerry Forest

RAA Ottawa-Rideau

Ivan Wood advised that the Kars Fly In was on the Ottawa MG car club calendar. Ivan stated he was not able to attend the fly in, he did not know how many members would be attending but had encouraged their membership to participate. Financial Report: Anne gave the financial report and after paying airport fees/rent and RAA membership costs and with the $ 75.00 building rent from the Kars Gliding Club our Chapter had a little over $ 400.00 in the bank to purchase fly in food supplies. Dave gave a quick update on the fly in. He talked about the need for volunteers for the July 12 fly in. Vintage Wings had offered to supply ground crew to taxi and park the visiting aircraft. This was approved by the President as it would free up other club members to do other tasks. Vic suggested that the July meeting we would focus on tasks/ volunteers to be staffed to help Dave with the fly in. Volunteers committed to help: Harvey has volunteered to do the radio work; Dave - BBQ will need servers and additional help; Vintage Wings - aircraft parking/ movement; All other positions open. Grant Este's son Brent gave a well-received informal picture and small videos presentation on flying to the North and South poles. Brent flies de Havilland Twin Otters and has been employed by Boric for 5 years. His presentation depicted life at the poles by scientists and climbing thrill seekers. He also showed off field landings and how they get aircraft unstuck in unprepared ice fields. Brent answered all questions and provided updates on Dew Line air strips and these remote postings. Since Jack Steele spent some time at various Dew Line installations this was particularly interesting to be updated on these locations. Brent discussed some of the upgrades to the Twin Otters including the P&W PT6-37 engine upgrades from -27 engines. He showed some of the typical metal repairs to the aircraft that they occasionally have to make. Many thanks for Brent Este's informative presentation. Closing: Brent finished his presentation and the meeting was closed at about 2140 hrs.

The July meeting was held at the Kars RAA club house. Present were: Victor Thompson, Bob Morehead, Bill Reed, Tom Bennett, Mike O'leary, Ron Johnstone, Martin Poettcker, Cary Beazley, Larry Rowan, Harvey Rule, Dave Stroud, Grant Este, Cliff Watson and Kit Watson Our President, Victor Thompson, brought the meeting to order at 8:pm sharp. Kit Watson gave a presentation about a new to Canadian program called PILOTS AND PAWS. With this program, pilots use their aircraft to transport animals to different locations. This sounds like a interesting way to have an to fly to new locations. Dave Stroud is getting all the plans made for the July 15 fly in BBQ. Marshalling is to be handed over to Vintage Wings Marshalling group. RAA Wings and Kars Fly-In is scheduled for Sunday, July 15th. Everyone enjoyed the coffee and donuts.

RAA London-St. Thomas

The first RV-1 aircraft completed by Vans, and recently restored, was hangared at the airfield of Tom Martin for a couple of days. Dave Hertner indicated that he had been there to see it. Dave noted that it seemed somewhat smaller than the current RV aircraft. Charlie Murray flew along in his RV-9A in formation with the restored RV-1 accompanying Tom Martin for the flight to the RV gathering in Windsor recently. Charlie noted that the older RV had a very impressive rate of climb. Charlie was very proud, and felt honoured to be asked to escort Tom and the original RV-1 to the Windsor RV gathering,

Join the RAA Forum

RAA's new forum is online! We hope to add many features over the next while to enhance the value of your membership. The URL is the same at raa.ca - once you're on the home page, simply click on the "forum" tab to get there. You'll find it a useful place to exchange ideas and ask questions - but it's only as good as the people who contribute to it. Help make this a useful resource for builders and pilots.

Any suggestions and ideas for improvements are welcome and can be sent to George Gregory at gregdesign@telus.net. Stay tuned for further developments!

noting it as an unforgettable experience. Hugh Shields donated a book about Chipmunk aircraft to the Chapter. This book will be the subject of a raffle to be held at the annual picnic meeting in July. Don Hatch volunteered to bring tickets suitable for the draw. Project Reports: Phil Hicks reported completion (after 4 months) of the Sonex wing spars, and has moved onto the wing ribs. Dave Hertner reported that Paul Briggs, his designated test pilot, recently flew Dave's RV-10 off runway 27 at St.Thomas. At around 600 ft a cooling issue began causing engine issues and the aircraft was landed for further cooling system tweaking. Daryl King has recently done taxi testing on the Texas Parasol, and has only wing tip and cowling surround completion to carry out. Chris Staines has his new engine running, and it is fine so far. He noted that the turbo-charger bearing failure may have been due to his use of a semi-synthetic oil. His temperature readings of the oil coming out of the turbo-charger are way over 300 deg. For such temperatures a fully synthetic oil, such as Mobil 1 is a must to prevent oil breakdown by excessive temperatures. Stan McClure brought a film clip of the Corby Starlet flight. He has added a nose wheel and a bit of lead to the tail-dragger for temporary weight and balance relief. At 7:50PM the business portion of the meeting ended and John Goris took the reins of the meeting so to speak! John Goris is of course well known to all in attendance as the proprietor of Purple Hill Air. On June 29th it will be one year since John purchased the St.Thomas Flight Centre and expanded his business onto St.Thomas Airport. John noted that since Sky Harbor at Centralia closed, the aircraft painting facility at the Purple Hill Air field, (near Welburn Ont.) has been very busy indeed. The flight training is currently somewhat slow, but the aircraft maintenance part of the business is pretty steady. John then took us on a walk-around inspection of a Cherokee 140, in for annual inspection, and a Cessna 150 currently being worked on. He stressed that cabin heaters must be checked by home builders, because they are often overlooked as uninteresting subjects for inspection. John noted that CARS 625, Appendix E is something each home builder/ home inspector should have a look at before next inspection. An inspection check for your aircraft should be available from your aircraft or kit manufacturer. (Editors note: See page for the CARS 625 list of inspections supplied by Chris Staines) All in all it was an enlightening presentation in many areas, and was well done.

Keep in Touch With
Your Board of Directors!

Gary Wolf ..... President
.....519-648-3030 garywolf@rogers.com
Wayne Hadath ..... Treasurer
..... whadath@rogers.com
Dave King ..... kingdws@shaw.ca

RAA Regional Directors

Mainland BC:
BC Coast .....John Macready
..... jmacready@shaw.ca

Interior BC/Technical Director: .....David King
contact best between noon-10pm 7days work
ph. 250-868-9108 homep ph. 250-868-9118.....
.....emailKingDWS@Gmail.Com

Alberta North:
Pending

Alberta South:
Gerry Theroux .....403-271-2410 grtheroux@shaw.ca

Saskatchewan:
Laura Drinkwater..... 306. 955-1361
lauraprd@shaw.ca

Manitoba:
Jill Oakes.....204-261-1007 jill_oakes@umanitoba ca

Ontario SW:
Jim Tyler..... tyler@orc.ca

Quebec:.....Pending

Appointed Positions:
Translation:.....Pending
Magazine Mailing: .....Dave Evans
Ultralights:.....Wanted
Web Page .....George Gregory
Magazine .....George Gregory
Insurance Committee ..... Gary Wolf
AirWear.....Dave King

background by sanja gjenero

Thorp T-18

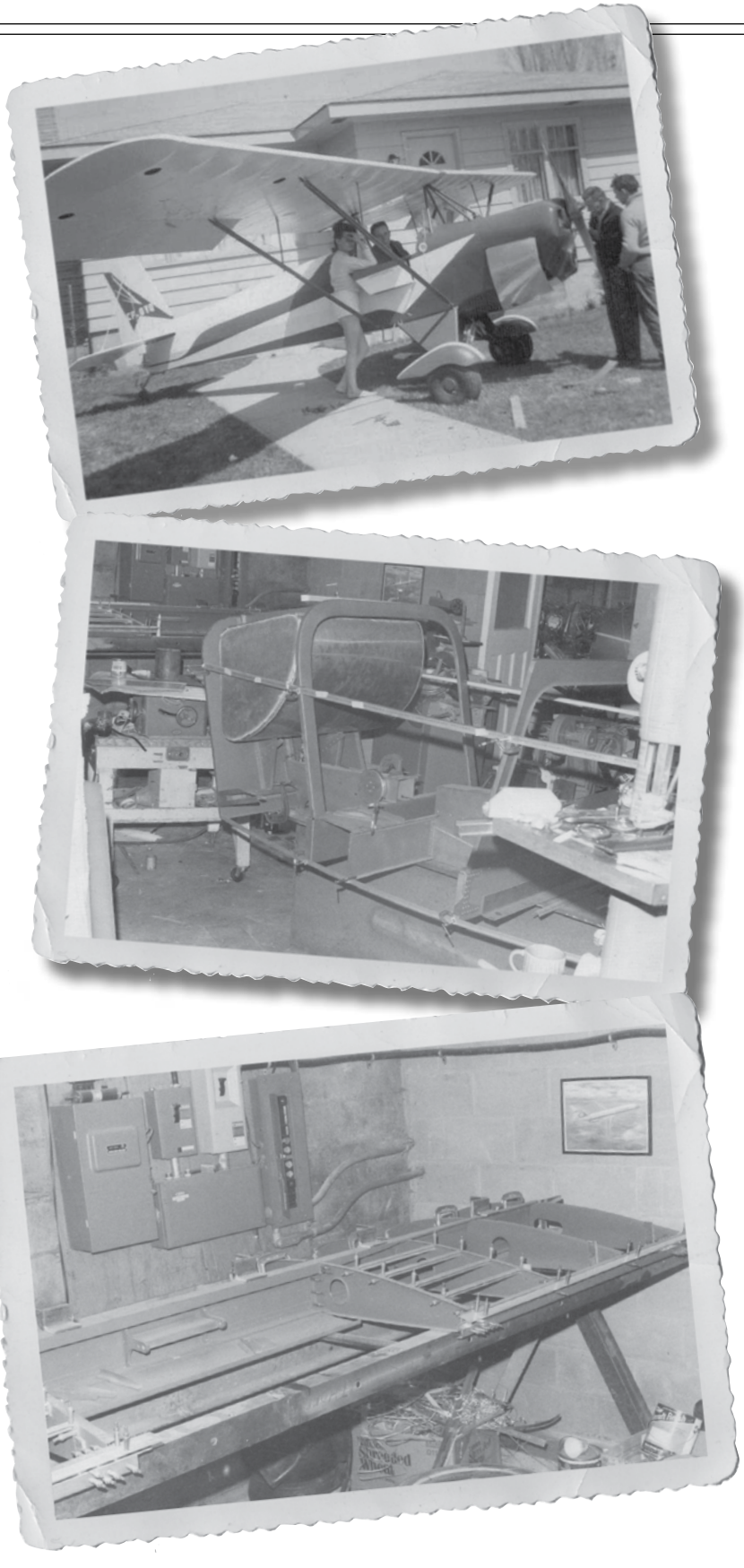
Victor Thompson's T-18 carries on his father's legacy

THIS THORP T-18 aircraft started to take shape in my father mind in the summer of 1964 following a trip to the EAA Convention at Rockford, Illinois. To re-tell this story, I have to back track a few of years...

My parents, John and Anne Thompson completed their pilot's licences in the early 1960's flying Piper Cubs and Tri Pacers out of the Kingston Flying Club. Like many, they dreamed of buying a "store bought" aircraft. They rented club aircraft and flew with friends out of the newly formed Brockville Flying Club; however, they still had a strong desire to own an aircraft. Cost kept their goal of aircraft ownership grounded, but only for a short time.

Like so many others, they were instantly inspired to build a homebuilt aircraft when they viewed the Mechanics Illustrated magazine featuring articles on the Corbin Baby Ace. These articles included aircraft specifications, see through illustrations and construction information. Here was an affordable aircraft that they could build for under $800. My parents embarked on a 3 ½ year adventure to build the Corben Baby Ace Model D aircraft.

Initially the project was started in the family home, specifically the workshop (present day living room) as the cement basement floor was not yet poured. Mom was very active with the construction, especially stitching the Irish linen that covers nearly 26 feet of wing. I remember the day that Dad and a few friends removed the living room window and lifted the fuselage out into the sun for the first time. The final assembly was completed in the family front yard where the Department of Transport inspection was completed. CF-OYQ was completed in June of 1964. Dad was already dreaming of a two place aluminum airplane to enjoy flight with his wife.



Left, top: CF-OYQ sitting pretty in the sun. Centre left, the Tiger's fuselage under construction, and at bottom, the wing under construction. The Tiger was the first homebuilt to use matched hole construction. Besides the T-18, Thorp was responsible for a number of notable designs, including the Piper Cherokee and Thorp T-211.

Fast forward to August 1964 at the Rockford Illinois EAA Convention. Rockford was the second home for the ever growing aircraft home builder's community fly in. Dad was drawn to the Thorp T-18 when he saw Bill Warwick's Thorp T-18 Tiger. Warwick's T-18 was sleek little metal speedster designed by John Thorp with a wide red stripe down the fuselage. Dad simply described the Thorp T-18 as a rocket. Warwick's aircraft was the first Thorp T-18 built, flown and it was powered by a 180 HP Lycoming engine. This engine was 3 times larger than the A-65 Continental that hung on CF-OYQ. Later in life, Dad admitted he did not see much of this convention due to this T-18. Dad was one of many who helped trample the grass around this 'Rocket' for most of the 1964 convention. Dad was hooked; he had to have one and left the convention with an order form for plans serial number 423 tucked under his arm.

In discussion with my father about building the Thorp, he revealed that initially the precision of the plans drawn to 4 decimal points was daunting to say the least. He praised the T-18 Mutual Aid Society, the T-18 newsletters which provided much guidance from other builders and the designer John Thorp.

Construction of C-GIRQ was delayed until 1979 for a variety of reasons. Most builders get busy with life, family, etc., but not Dad. The house not being finished was the primary issue delaying construction. My mother identified that the house plans stated that the living room was to be on the first floor and the 2nd aircraft was being built down stairs with the newly cemented basement floor.

In the summer of 1979 Dad started building the Thorp T-18 in earnest. Like most builders his days were stretched to 28 + hours. He went to work, returned and would work on the aircraft until told to go to bed. This is how I remember my Dad. Where's Dad? Try the basement…. he was always building something.

Bill Warwick's Thorp provided serious inspiration to Vic's dad to start construction of C-GIRQ

At the time, I was in the Canadian Air Force undergoing basic Air Frame Technician trade training in CFB Borden, Ontario where I spent all my available cash renting Cessna 152s. I recall our telephone conversations always revolved around how he was doing on "the plane".

Dad began work on the Thorp T-18 building the fuselage first. To make the fuselage straight he purchased a 12 foot steel I beam which he ground down to match the lower slope of the fuselage bottom. This served as the foundation for the fuselage, where he could build from. He made rows and rows of fuselage bulkheads. Each bulkhead that was built was just a bit smaller than the last. One by one, they were attached to the stringers.

Then came the highly anticipated day, the day he drilled the first hole in the fuselage skin for the first cleco to attach the first bulkhead. The holes lined up. He had some doubt about using aircraft metal shipping straps as hole drilling templates but the sheets of aluminum skin started to disappear and soon a sleek fuselage was at the foot of the basement stairs of my parent's home. I should add mom got very good at riveting, holding the assorted bucking bars helping Dad build the wings and fuselage. Dare I call Mom Riveter Annie, or is it Annie the riveter... well I just did (sorry, Mom, but it's *my* story).

Dad looked at the newly completed dash panel one day and noted that it was 3 ½ times the size of the Baby Ace's dash and thinking to himself, "how will I ever fill this dash up?". Dad made a shopping list, checked it twice, then planned another trip. This time it was to the 1980 EAA Convention now at Oshkosh Wisconsin taking me and another flying buddy. I was overwhelmed just with the volume of homebuilt aircraft on display. Four days later, we had several multi-functional engine gauges, flight and navigation instruments, a radio, a pitot system, an anti-collision light, even a clock that would make the Baby Ace green with envy. Still no engine, however. Several Oshkosh aircraft sported something new: a Lycoming engine with a constant speed metal propeller… well, no money left. On the final day of the convention, we ended up taking pictures of instrument panel layouts. Dad was still thinking about the constant speed prop when we left for home…

In no time all the instruments disappeared into the now mounted dash panel. Instruments were plumbed, the radio installed, all wiring strung, a nice row of switches and fuses dotted the dash. But still no constant speed prop…

Then came the highly anticipated day: the day he drilled the first hole in the fuselage skin for the first cleco to attach the first bulkhead

Dad tackled the wings next and so comes ribs construction. A Millwright at DuPont Maitland Works, Dad was not content to hammer ribs into shape over wooden forms. He built solid aluminum dies allowing rib aluminum material to be pressed into shape. Making these wing rib dies was no small feat: conservatively I estimate this added nearly 6 additional months to get the wing rib dies just right. Dad didn't have a hydraulic press to manufacture the wing ribs, so he built a 20 ton press in a week. Then he went into full scale rib production that would make de Havilland Aircraft of Canada look like up-starts. Dad initially built the rib dies to aid in building a replacement wing set if he ever had a mishap and pondered the idea of being a wing parts supplier. He never pursued either goal, but did produce a very high quality set of wing ribs.

Dad was ever conscious of the weight of C-GIRQ. He investigated putting fuel tanks, electric boost pumps, and toyed with the idea of ejector

Thorp T-18

Crew	one
Capacity	one passenger
Empty weight	1000 lbs (454 kg)
Loaded weight	1600 lbs (725 kg)
Useful load	600 lbs (271 kg)
Powerplant:	Lycoming O-360, 180 hp (135 kW) each
Propellers	constant speed propeller, 1 per engine
Propeller diameter	72 in (1.83 m)
Performance	
Maximum speed	200 mph (320 km/h)
Cruise speed	180 mph (292 km/h)
Range	540 sm (875 km)
	900 sm (1458 km) with optional wing tanks
Rate of climb	1500 fpm (7.6 m/s)
Wing loading	18.6 lb/ft² (90 kg/m²)
Power/mass	8.9 lb/hp (0.19 kW/kg)

pump (idea from Bell Textron). Aircraft, automotive and even marine fuel pump applications where considered. He built an aluminum mock up wing tank, ran some plumbing and in the end he decided to keep C-GIRQ light and fast with dry wings.

While building the center wings he noticed no access to lubricate the flight control rod end bearings. Dad designed in a lower hinge panel, secured with anchor nuts allowing access to lubricate bearings, inspection of electrical connections and center wing structure. The wings were assembled and skin left off for final Ministry of Transportation inspection. Upon satisfactory inspection by the inspector, my parents started final close out of the wings.

A trademark I learned from my father was his dedication to following a design to a "T". When designers fail to account for maintenance you simply engineer it into the project or design. Dad's attention to on time proper maintenance was instilled in me when I was quite young, which has followed and successfully guided me through my military maintenance career. Do the job the best you can, the 1st time, to the highest standard - as if you had to go flying in the aircraft. I have tried to instil this maintenance philosophy to all my apprentices and co-workers. Thanks, Dad!

Spring 1985. Now residing in Trenton, Ontario, I get a phone call from my Dad: "Hey, can you sign out an engine bore scope and can you get tomorrow off, I got a chance to purchase a 180 HP Lycoming from a 1980 Mooney 201" so the call started. Well, I'm on days off anyway… a couple calls later I was off to the Air Force Base to sign out an engine bore scope. I got home and Dad's telling the wife that I am off to the Hamilton area tomorrow to bring an aircraft engine home. Well, you know this is news to the wife… Wednesday at 0730 we are on the road, with my utility trailer in search of a power plant that has been newly overhauled by a large aircraft engine shop in southern Ontario.

The company that owned the 1980 Mooney 201went bankrupt. The Lycoming 0-360-A1A had been overhauled and was being sold separately. Enter Dad and part of his dream was coming to pass. Following a cylinder removal by the one of the shop's mechanic and me poking around with the bore scope confirmed no engine corrosion. After cylinder re-installation, 8 spare Champion spark plugs, a case of Phillips 66 20W50 mineral engine oil, the cleanest engine manuals I ever had seen, a nice yellow airworthiness tag, watching a check changing hands, and a very firm hand shake, we were on our way. One aircraft power plant richer, I think I was more excited than my Dad. We prepared the engine for a 5 hour road trip. I used a few extra ropes and tie downs as the 4 x 4 x4 box was worth more than my 1981 Toyota Corolla SR5 and high mileage utility trailer. I was reminded of this fact many, many, many times… driving back from Hamilton with my Dad and this

expensive power plant in tow.

Time for lunch, right Dad? I am expecting to pay as 4x4x4 wooden boxes are a bit expensive. No was the answer. I was advised the trip was not over. We were on the trail of a new constant speed propeller. This story unfortunately wasn't fully successful. The constant speed prop had been sold a couple days earlier. The owner however, did have 2 wooden Sensenich props. The 1st prop was brand new W68LY80 with all airworthiness paper work, spinner, backplate and all associated aircraft hardware. The 2nd prop had just 350 flight hours on it with the applicable documentation, but no spinner or backplate. Both propellers were being sold together for $500. We went to a coffee shop with the propeller owner. While at the coffee shop he offered to lower the price by $50 to help Dad see his way to buying the wooden props. I could see disappointment in Dad's eyes. The Lycoming 0-360-A1A will support a constant speed prop but when I saw Dad looking at the brand new Sensenich prop again, I knew what was going to happen. Dad offered him $400 cash and again, a hand shake. Dad and C-GIRQ were the newest owners of 2 Sensenich props which took up temporary residence in my car's back seat.

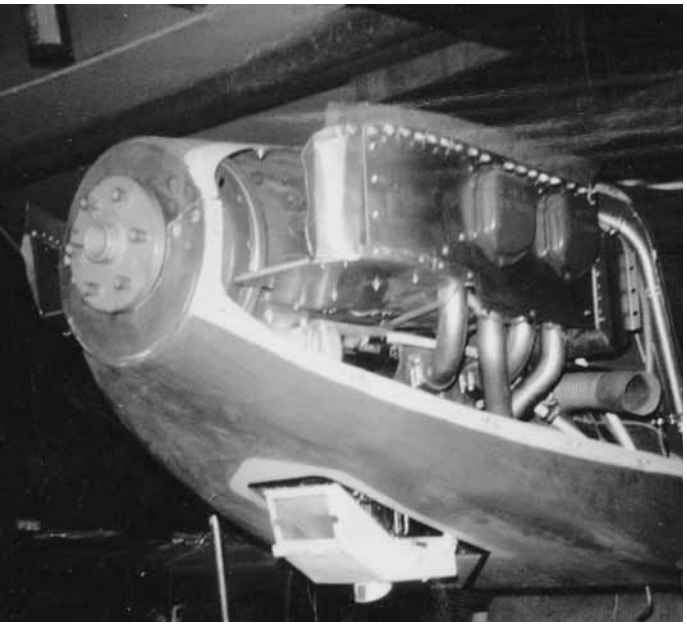
To this day, I cannot recall where we ate lunch or what we had for lunch or even who paid for lunch. Rest assured the restaurant had a window where we could view the wooden 4x4x4 box containing Dad's new Lycoming engine while we ate. He would not let his new baby out of sight till safety at home.

Talk on the way home was about building a new motor mount. Dad had been very sure that he wanted a Lycoming 150 HP engine to power the Thorp T-18 that he made an engine mount for this engine. Dad eventually traded the used propeller for a new set of Cleveland brakes, wheels, tires and tubes.

A couple weeks later we were hoisting up the Lycoming 0-360-A1A engine and accessories on to the newly made engine mount. It was hard not to notice the 68 inch Sensenich wooden propeller and spinner mounted on the business end of this new mill and hard not to notice the pride in accomplishment in my father face as C-GIRQ was looking more and more like Bill Warwick's Thorp T-18 sleek little metal speedster. "The Rocket" was taking shape.

Dad tackled construction the tail feathers last. This was at a very hard time for Dad, having built virtually all the airframe parts for the Baby Ace. Dad agonized over building a few parts for C-GIRQ. He wanted to manufacture as much of the Thorp T-18 as he could. Dad rationalized the building verse buying: the engine fiberglass cowling, engine exhaust cross over system and a couple parts from Ken Brock for the tail group he had to conclude buying was more cost and time effective.

Working on the tail he was overly precise re-skinning the rudder twice and looking to do it again. One week-



After cylinder re-installation, we were on our way. One aircraft power plant richer, I think I was more excited than my Dad.

C-GIRQ at the Brockville Municipal Airport

end, I ask him to accompany me to the Brockville Municipal Airport to take a look at a couple store bought aircraft. When we arrived the first aircraft we looked at we saw no less than 3-4 rivets on the wings, a couple on the fuselage and couple more on the tail that we both agreed should be replaced. This trip did not persuade Dad but we did drill out the rivet of concern on the rudder and found success on installation.

A warm day in May 1987 was the day C-GIRQ was to have its final assembly inspection by the MOT inspector. The previous evening Dad and I spent carrying out a mini inspection. We fixed a few minor things, repositioned a couple clamps, tightened a few screws, and most deficiencies were corrected. Saturday the inspector showed up. 3 hours later, 2 cups of coffee, and C-GIRQ still had a blank page of recorded maintenance deficiencies. Mom called down that it was lunch time, so we ate. After lunch I commented that a Canadian Air Force Hercules with its 4 turbo props takes less time following a periodic inspection to be airborne for its post maintenance test flight. What's up?

The MOT inspector commented that he always finds a couple things wrong with homebuilt aircraft and he couldn't find anything wrong with C-GIRQ. With that, I pointed out a couple instruments with no range markings, entries one and two. The range markings hadn't been established yet so why put them on the gauge was Dad's thought. We also had one AN bolt too short need to jump up a couple dash numbers. Dad had one on order (and showed the inspector the receipt) but the new bolt had not come in: entry three.

While writing, I was out of line of sight of the inspector and with one quick strategically placed punch by my Dad, my arm went numb and silenced any further MOT deficiencies observations. My arm was still sore after the inspector from Ottawa (home of all aircraft regulations in Canada) had left.

A registered letter was sent into MOT stating 3 deficiencies had been rectified. MOT issued a flight permit and C-GIRQ was "good to go", another completed homebuilt aircraft registered in Canada, another Canadian Thorp T-18 in the air.

C-GIRQ was disassembled and taken to the Brockville Municipal Airport where it was to be operated from. Following reassembly, C-GIRQ was ready to begin the post construction phase. My Dad, like a lot of builders had small snags to solve prior to his 1st test flight. C-GIRQ suffered re-occurring loss of right brake pressure and an aircraft battery that would not hold a charge.

Convinced his brake problem was due to residual air not fully purged from the system Dad manufactured a small brake pressure tool. The tool had a removable threaded top allowing about 250 millilitres of brake fluid to be added and a Schrader valve to pressurize the brake system forcing air bubbles to the reservoir tank. Still, he had spongy right brakes, so he fully disassembled the right brake callipers where he discovered the problem was an O-ring that was pinched from the factory, not making a complete seal.

After much investigation on the charging system, robbing a serviceable charging alternator from a fellow builder solved the battery discharge issue. Another part straight from the manufacturer not correctly assembled.

Dad started high speed taxi tests in the fall of 1987 and initiated the mandatory Transport Canada's test flight requirements. However, medical issues prevented my Dad from completing all the test flight requirements. The medical concerns may have

kept him on the ground; however he continued to refine C-GIRQ.

C-GIRQ was moved back to my parent's home prior to the passing of my Dad in early 2003. The engine was preserved and the wings / tail assemblies were suspended from the basement ceilings awaiting future use.

I was posted from 417 Combat Support Sqn (Bell 412 Griffon SAR Sqn) Cold Lake Alberta to Ottawa in August 2007 to provide technical support for the CH146 Griffon helicopter fleet. This posting provided me with my 1st real opportunity to actively resurrect C-GIRQ.

Since my return the entire airframe, wings and tail sections have been inspected for corrosion, condition and damage. Engine and flight controls are in flight ready condition. There are minor fiberglass / paint touch ups required but all in all no structural issues and C-GIRQ is ready to be fully re-assembled.

Approaching summer retirement from the Royal Canadian Air Force after 33 years of service, I plan to build a hanger to maintain and restore both CF-OYQ and C-GIRQ. 2012 Lakeland Florida Sun and Fun Fly Inn showed me a lot has changed in the homebuilt industry. I will be upgrading C-GIRQ's Avionic / Navigation/ Electrical systems; include a GPS system, transponder, a 406 ELT, radio and a new light weight aircraft battery.

Future plans call to lower cockpit noise levels and to spruce up the interior. The cabin fuselage and floor will be treated to sound deading material and covered with light weight fabric. Fabric treating will be done to the dash panel to soften its look and feel. A few popular airframe modifications will be embodied following completion of the test flight phase including: rudder and aileron trim systems, removable cabin forward floor, flush mounted fuel tank cap installation and close out the baggage compartment behind crew seats.

I joined the RAA Ottawa / Kars Chapter 4928 in 2007 and have received much help, support and encouragement from my parents' friends and fellow RAA members. I am looking forward to reassembly and completing the test flight phase for C-GIRQ and to provide aircraft updates.

My parents and I shared the thrill of flight. They inspired me to pursue a military aviation career - which in fact I always viewed as hobby more than a job. My father had a dream to have this Thorp T-18 fly and the task has fallen to me to complete my father's dream, in memory of Dad.

Victor Thompson is the President of Ottawa-Kars RAA Chapter 4928

Pilots N Paws Launches in Canada

Animal Rescue Non-Profit Matches Pilots, Rescue Organizations Nationwide

Modeled after the incredibly successful US rescue initiative www.pilotsnpaws.org, a newly formed rescue organization has opened a standalone Canadian version: (www.pilotsnpawscanada.com . "We are very excited to launch the Canadian version of Pilots N Paws, " said Gini Green, Founder. "As a non-profit we are gearing up for donations of two kinds; funds to promote, maintain and expand our operation. And, to connect with private pilots who would be willing to join the cause and volunteer some time and their expertise to help these fabulous animals fly to their forever homes, virtually anywhere in Canada. The US group has 1200 pilots, 12,000 registered users and more than 30,000 Facebook 'Likes! We have a ways to go but you can see the potential when you look at them."

Whenever rescue organizations can expand their geographic pool of potential homes for either shelter, abandoned, abused or neglected animals, the greater the chance of finding a perfect home. By utilizing a nationwide network of pilots and rescue professionals, more of these displaced animals no longer face more neglect or in some cases convenient killing. The death or mistreatment of any animal is unacceptable.

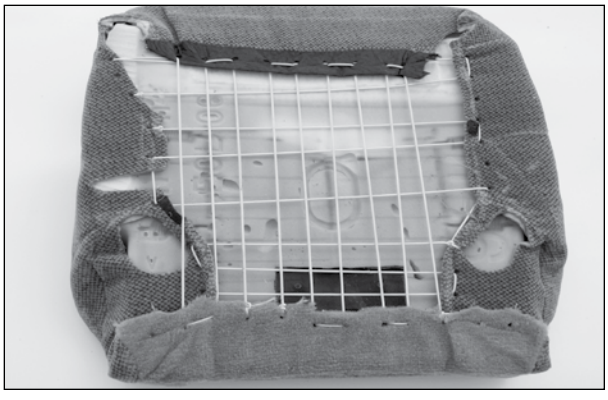
Once a pilot has volunteered, he or she always has the final say as to whether they can help or not. Working in tandem with rescue organizations, pilots are responsible, at their complete discretion and schedule, to deliver an animal from airport to airport. All other transport details, including a detailed briefing with the pilot regarding his special passenger is handled by the rescue organization.

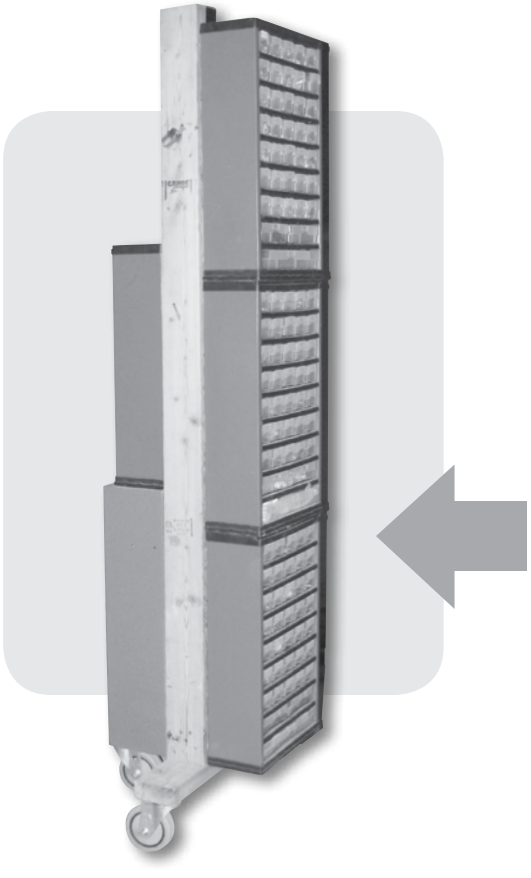
The true benefit for the pilots is the satisfaction that they are truly saving precious lives and are making an exceptional contribution to their community. Very simply, pilots get to take their love of flying and help their local animal rescues. By writing off many of their costs for flying rescue missions, logging in the hours needed to maintain their licenses, pilots will become an integral part of the rescue groups across Canada. For more information, visit www.pilotsnpawscanada.com

Left: They look great in an airplane. Below left, glue and string hold the upholsery in place Right, Not much work or money, and the result is comfortable and light.

Cheap Upholstry

Would you like to upholster your plane's seats without breaking the bank? Mike Shave found that many minivans have centre row bucket seats just the right size for an aircraft. He removed all the metal and filled the voids in the foam with pieces of styrofoam, then glued and laced the covers in place. The result was a set of lightweight seats that have side bolsters and cushions that accommodate the human form, without having to do any shaping of foam or subcontracting of upholstery





Keeping Track of the Little bits

From Terry Jantzi comes another handy workshop item, this time a compact and portable way to store aircraft hardware. Four casters, a square of plywood, and a couple of 2 x 4's make up the framework. The 2 x 4's are separated by a distance that allows the rear flanges of the Canadian Tire cabinets to be screwed to the uprights.

Problem Solved

Keeping track of fuel mixes / John Davidson

IT WASN'T A BIG PROBLEM by global standards. It wasn't even an exclusively aviation problem. But it bothered me until I finally solved it.

In my life there are many internal combustion engines with many different fuel requirements. The ultralight, the chainsaw, the weed-whacker, and the small outboard all want 50:1 pre-mix. The lawn-mower, the big outboard, and the car all want straight gas. The snowblower wants 32:1 pre-mix. And of course the plane wants 100LL. All except avgas and car gas should probably have stabilizer added because I rarely use the chainsaw or lawn-mower enough at one go to use up the whole batch in a reasonable time.

In my life there are also many jerry-cans and sometimes I have trouble remembering which fuel variant I put in which jerry can. I have tried magic markers and various labels, but the labels get smudged and I would often find myself at the pumps with no marker to change the label. Yes there are colour differences, but in some lights they are subtle, and I don't want to trust my engines' welfare to something so vague.
The solution is rat tails. To every jerry-can I have tied a 20 inch length of 1/8 inch nylon cord... a ''rat tail''. On the free end of the cord I tie a knot or series of knots to indicate the current contents of the can.

The knots I use are as follows:

-One simple overhand knot [looks like an ''O'' for Oil] indicates 50:1 while two simple overhand knots indicate extra oil, i.e. 32:1.

-One figure-of-eight knot [looks like an ''8'' for oct-ane, indicates stabilizer [octane preserver].

-Two figure-of-eight knots (lower right) indicate 100LL, the highest octane I use. I'm not suggesting this system will work for everyone, but it has helped to reduce the jerry-can chaos in my internal combustion life.


A plain piece of cord.

This arrangement suggests gas with stabilizer and oil added.


Here's a jerrycan of 100LL.

Brrr. Hawaii's looking pretty good right now.

Winter's Coming

Taking care of business as the temperature drops / by Frank Gue

HERE ARE A COUPLE of hints that are good any time but especially in cold weather.

Priming

Expecting cold fuel hitting a cold engine to vaporize in cold air in a few milliseconds is asking a lot, winter or summer. Solution: Prime first. Then do your walk-around checking oil, tires, all that good stuff. Takes about 3-4 minutes. Then crank the engine. It will start in a couple of revolutions. Guaranteed.

Priming vigorously while cranking, as one CFI urged me to do, is dangerous. You can get a backfire and a fire. I know; I've had one.

Batteries

Heavy, black, and with no moving parts, batteries don't get the respect and TLC they deserve.

It isn't starting engines or flying airplanes that destroys batteries; it's neglect. The lead-acid batteries most of us will be stuck with for a few years yet, left idle, will self-discharge in about 100 days, or 2400 hours. Our smallish batteries are mostly 10-20 ampere-hours (AH) capacity. They can be trickle-charged at a rate that will replace the self-discharge loss. What rate? Well, assume a 20-AH battery, then -

20AH/2400H = 0.0083 ampere = 8.3 milliamps.

This tiny current, plus a bit for losses, say 10 milliamps, will keep your 20AH battery topped up indefinitely.

Intelligent chargers are on the market that will do this. Before buying, check the specs carefully for such assurance; overcharging is deadly for several reasons such as boiling-off electrolyte or even a fire from free hydrogen. A few milliamps will do neither.

An inexpensive alternative if you have an ordinary charger, is to insert a resistor between the battery and the

President's Message / cont'd from page 2

Advanced Ultralights flying without their owners knowing the empty weight or the CG location.

Sparsely Settled Area Equipment

Travel back to when you took ground school, and there was reference to the equipment a pilot had to carry when flying in the "sparsely settled areas". If you are based near a city it is likely that you believe that it does not refer to the type of flying that you do. However at a TC recurrency seminar this summer, Inspector Martina Wassmer enlightened the members at Collingwood about the definition. CAR 602.61 puts the responsibility onto the PIC to determine whether he/she would be flying into an area where survival equipment must be carried.

Unless you are flying an Ultralight, a gyroplane, a glider, or balloon, any plane flying over land must have equipment to start a fire, provide shelter, provide or purify water, and visually signal distress. The season will dictate what is required for shelter. If you fly only within hiking distance of Calgary or other city a credit card will suffice to handle these requirements. Other areas will require more, depending on how sparsely settled they are. In my own experience, flying a straight line from Ottawa to Collingwood definitely puts the plane over sparsely settled areas, while heading a bit south to fly along Highway 7 does not. Twenty miles from the road can make all the difference. Check your routes.

For more info see attached link - 2.14 in the Air section of the Aeronautical Information Manual (AIM) : http://www.tc.gc.ca/eng/civilaviation/publications/tp14371-air-2-0-5382.htm#2-14

Glasses Required

At another seminar TC's Audra Oakes clarified what it means when your license says that glasses must be worn or available. The definition is a bit narrower than many of us believe. The standards can be found in AIM subpart 424:

http://www.tc.gc.ca/eng/civilaviation/regserv/cars/part4-standards-424-172.htm#424_05

At the bottom of the subpart 424 is a hyperlink to "Physical and Mental Requirement":

http://www.tc.gc.ca/eng/civilaviation/regserv/cars/part4-standards-t42402-1412.htm

If you scroll down to section "Visual Requirement", if your medical states:

- "glasses must be available" you must have appropriate prescription glasses available to you in flight

- "glasses must be worn" you must wear appropriate prescription glasses and you must have an additional appropriate prescription pair available to you in flight. (2 pairs) You may not substitute contact lenses.

- "glasses or contacts must be worn" (note the use of "or") You must wear appropriate prescription corrective lenses and you must have an additional appropriate prescription spare available to you in flight. (2 pairs) You may use glasses and contacts interchangeably.

---

charger. 1/4 watt is big enough. The value is unpredictable, as all batteries are slightly different. You probably have to drop around 2-3 volts at 10 milliamps, so start with -

R = 3/0.01 = 300 ohms. Measure the result. You'll doubtless have to try a couple of different resistors. The precise current you get is not critical.

Whatever you use must be demountable, to avoid risk of de-certifying the airplane. A self-discharged battery cannot be restored to full capacity by recharging. Lead-acid batteries sulfate under this abuse: the voltage and specific gravity come back up and seem OK, but some or most of the AH capacity has been lost. A difficult start will flatten such a battery, winter or summer.

RAA Director NOMINATION FORM 2012

Photo Copy This Page

To Nominate, fill in name

Nomination for _____Director

I,_____	_____	_____
Nominee's Signature	Printed	RAA #

Being an RAA member in good standing, accept nomination
Note - Nominee's signature constitues acceptance of nomination

I,_____	_____	_____
Nominator's Signature	Printed	RAA #
I,_____	_____	_____
Nominator's Signature	Printed	RAA #
I,_____	_____	_____
Nominator's Signature	Printed	RAA #
I,_____	_____	_____
Nominator's Signature	Printed	RAA #
I,_____	_____	_____
Nominator's Signature	Printed	RAA #

Note - Five Nominators are required; it is good practice to obtain several additional nominators in case of an inadvertent lapsed membership by a nominator. Please have nominations in by October 31, 2012.

Complete the above, and forward to -
Bill Rice, Box 22 - 4881 Fountain St. North, Breslau ON N0B 1M0.

Rebels / continued from page 18

walked. It was early, it was only twenty minutes, and even a Torontonian can only impose so much.

July 2nd was another bright, clear, and as yet windless day so I was eager to get going. The runway at G'bourg could use some work but we managed to get off without excitement. People talk about the prairies being boring, but I found them always changing with different crops, contours, coulees, draws, sloughs, reservoirs and little pothole ponds. We saw a couple of flocks of large white birds from above, maybe cranes, with a slow leisurely wing flapping speed. There were even a few reservoirs where you could land a floatplane if you wanted. Since we had fueled up in G'bourg, we could bypass Swift Current and head straight for Medicine Hat.

The Hat was weird. There was a totally friendly and helpful gas girl at the FBO but when we went to the terminal, the security guard was apoplectic that we arrived from the field side without prior clearance. The restaurant was closed, he watched us buy 2 litres of water from the vending machine, then thought he should take it away from us as we went back out to the apron. "no liquids policy". He knew we'd just bought it . He knew we were not going on a commercial flight, but still he balked. Good teaching point for Michael... some folks are so afraid of losing their jobs, they are afraid to use their brains. Fortunately he relented and let us through, but often I think this whole war on terror is just an excuse to make jobs for otherwise unemployable people.

Power bars and baby carrots did for brunch that day. The ham sandwiches from home were a bit questionable after a couple of days in the cooler with no fresh ice. I have friends who can tell you about food poisoning on a long cross country.

The flight from Medicine Hat to High River was unremarkable except we hit that sweet spot where the engine was happy and cool enough. Suddenly we could see the Rockies way off in the distance, very exciting but a bit chilling. No wind, by prairie standards, at High River so the landing was uneventful. Within an hour or so, Michael's hosts had arrived. I was very sad to lose his company and cheerful inquisitive companionship, not to mention his flying, map reading and radio skills. But with the Rockies ahead, I was glad to carry a little less weight and responsibility.

With the plane securely tied down, I spent a delightful day and a half on the ground waiting for suitable conditions to fly through "The Rocks", as those more familiar with them say. Fear and trepidation keep me on a more formal basis. Locals offered insights on the pros and cons of the various routes and a certain amount of hangar flying was involved. Finally on July 4th, about 4pm the winds dropped and it was time to go.

I could not have had better advice and better weather for this leg. So many points were repeated. Wait for favourable conditions, being the most important. If you can, take enough fuel to avoid refueling in Golden, since its a killer climb to get back up to 8500' for Rogers Pass, especially if you are fuel heavy. Stick to the right unless downdrafts are a problem, keep a sharp watch for opposing traffic. The scenery is indescribably beautiful, but the terrain is profoundly hostile and even if you made a successful forced landing on the highway, you'd probably get creamed by an 18 wheeler with no shoulder to pull off onto. So mind your temps and pressures and enjoy the ride.

I redid the fuel and distance calculations three times before deciding to bypass Golden. I can't say enough about the beauty and majesty of our country. Breathtaking. I made it into Revelstoke and refueled with enough time to spare to get to Kamloops before dark. I circled for altitude before heading up the pass and again all was well. A gorgeous evening was descending as I flew past Schuswap Lake and Salmon Arm then down the Thompson to Kamloops. Lovely flying with no turbulence, no head wind, no traffic, till I got to Kamloops. What a busy place.

I was established on downwind when the tower asked if I'd like to try to sneak in ahead of the 737 on 12 mile final or extend my downwind. Easy decision. I've got lots of fuel and its a lovely evening for flying and I certainly didn't want a 737 crowding me. Of course landing behind him meant the possibility of wake turbulence, but I dealt with that by flying even further downwind. So before you knew it, I was on a 12 mile final myself. One of the joys of being fuel rich. Landed, tied down, found a motel, and slept.

The Hat was weird. There was a totally friendly and helpful gas girl at the FBO but when we went to the terminal, the security guard was apoplectic that we arrived from the field side without prior clearance.

RAA Chapters and Meetings Across Canada

The following is a list of active RAA Chapters. New members and other interested people are encouraged to contact chapter presidents to confirm meetings as places and times may vary.

ATLANTIC REGION

HAVELOCK NB: Weekly Sunday morning get together year round, all aviation enthusiasts welcome. Havelock Flying Club - 25 mi west of Moncton. Contact Sterling Goddard 506-856-2211 sterling_goddard@hotmail.com

QUEBEC REGION

COTE NORD (BAIE COMEAU): Meeting times to be advised. Contact Pres.Gabriel Chouinard, 418-296-6180.

LES AILES FERMONTOISES (FERMONT): First Sunday 7:30 pm at 24 Iberville, Fermont. Contact Pres. Serge Mihelic, 418-287-3340.

MONTREAL (LONGUEUIL): Chapter 415, Meeting in French second Wednesday at 8 pm, at CEGEP Edouard Montpetit 5555 Place de la Savane, St. Hubert, PQ. Contact president Normand Rioux at NRIOUX@lapresse.ca

OUATOUAIS/GATINEAU: Every Saturday 9:00 am to noon at the restaurant l9Aileron in the airport terminal. Contact Ms N.C. Kroft, Gatineau Airport, 819-669-0164.

ASSOC DES CONSTRUCTUERS D'AVIONS EXPERIMENTAUX DE QUEBEC (QUEBEC): Third Monday 7:30 pm at Les Ailes Quebecoises, Quebec City Airport.

ASSOC AEROSPORTIVE DE RIMOUSKI: First Saturday at 9:00 am, La Cage aux Sports, Rimouski. Contact Pres. Bruno Albert, 418-735-5324.

ASSOC DES PILOTES ET CONSTRUCTEURS DU SAGUENAY-LAC ST JEAN: Third Wednesday 7:00 pm at Exact Air, St Honore Airport, CYRC. Contact Marc Tremblay, 418-548-3660

SHERBROOKE LES FAUCHEURS de MARGUERITES. Contact Real Paquette 819-878-3998 lesfaucheurs@hotmail.com

ONTARIO

BARRIE/ORILLIA CHAPTER Fourth Saturday (and second Sat. as well) each month 9:00 PM Lake Simcoe Regional Airport Contact Secretary Dave Evans 705 728 8742E-mail david.evans2@sympatico.ca

COBDEN: Third Thursday 8:30 pm at Club House, Cobden Airport. Contact Pres. Clare Strutt, 819-647-5651.

COLLINGWOOD AND DISTRICT; The Collingwood and District RAA, Chapter 4904, meets every first Thursday of every. month, at 7:30 PM except July and August, at the Collingwood Airport or at off-site locations as projects dictate. The January meeting is a club banquet held at a local establishment. For more information contact Pres. George Elliott gaelliott@sympatico.ca 705-445-7054

EXETER: Second Monday 7:30 pm at Summers-Sexsmith Airfield, Winters-Exeter Legion. Contact Pres. Ron Helm, ron.helm@sympatico.ca 519 235-2644

FLAMBOROUGH: Second Thursday 8:00 pm at Flamborough Airpark. Contact Pres. Karl Wettlaufer 905 876-2551 or lazykfarm@sympatico.ca

KENT FLYING MACHINES: First Tuesday 7:30 pm at various locations. Contact President , Jim Easter 519-676-4019 jim.easter@teksavvy.com.

KITCHENER-WATERLOO: Meets the third Monday of each month in the upstairs meeting room of the cadet building at CYKF, except during the summer months when we have fly-ins instead. Please contact Clare Snyder clare@snyder.on.ca

LONDON/ST. THOMAS: First Tuesday 7:30 p.m. At the Air Force Association building at the London Airport. Contact President Phil Hicks p.hicks@tvdsb.on.ca 519-452-0986

MIDLAND/HURONIA

Meeting: First Tuesday, 7:30 pm at Midland/Huronia airport (CYEE) terminal building. Contacts: President Ian Reed – 705-549-0572, Secretary Ray McNally – 705-533-4998, E-mail – raa.midland@gmail.com .

NIAGARA REGION: Second Monday 7:30 pm at Niagara District Airport, CARES Building. Contact Pres. Elizabeth Murphy at murphage@cogeco.ca, www.raa-niagara.ca

OSHAWA DISTRICT: Last Monday at 7:30 PM at the Oshawa Airport, South side, 420 Wing RCAF Assoc. Contact President: Jim Morrison ,905 434 5638 jamesmorrison190@msn.com

OWEN SOUND Contact President Roger Foster 519-923-5183 rpfoster@bmts.com

OTTAWA/RIDEAU: Kars, Ont. 1st Tuesday. Contact: Secretary, Bill Reed 613-831-8762 bill@ncf.ca

SAUGEEN: SAUGEEN: Third Saturday for breakfast at Hanover Airport. President: Barry Tschirhart P.O. Box 1238 27 Ridout Street Walkerton, Ontario. Home: 519-881-0305 Cell: 519-881-6020. Meetings are held every second Tuesday evening, at 7:30pm. Location(s) Saugeen Municipal Airport, Kincardine or Port Elgin. All interested pilots are welcome. Email: barry.tschirhart@bell.net

YQG AMATEUR AVIATION GROUP (WINDSOR): Forth Monday, 7:30 pm Windsor Flying Club, Airport Road, Contact: Kris Browne e_kris_browne@hotmail.com

SCARBOROUGH/MARKHAM: Third Thursday 7:30 pm Buttonville Airport, Buttonville Flying Clubhouse. Contact Bob Stobie 416-497-2808 bstobie@pathcom.com

TORONTO: First Monday 7:30 pm at Hangar 41 on north end of Brampton Airport. Contact: President Fred Grootarz -

Tel: (905) 212-9333, Cell: (647) 290-9170; e-mail: fred@acronav.com

TORONTO ROTORCRAFT CLUB: Meets 3rd. Friday except July, August, December and holiday weekends at 7:30 pm Etobicoke Civic Centre, 399 The West Mall (at Burnhamthorpe), Toronto. Contact Jerry Forest, Pres. 416 244-4122 or gyro_jerry@hotmail.com.

WIARTON: Bruce Peninsula Chapter #51 breakfast meetings start at 8:30am on the second Saturday of each month in the Gallery of Early CanadianFlight/Roof Top Cafe at Wiarton-Keppel Airport. As there are sometime changes, contact Brian Reis at 519-534-4090 or earlycanflight@symptico.ca

MANITOBA

BRANDON: Brandon Chapter RAA meets on the second Monday of each month at the Commonwealth Air Training Plan Museum at 7:30 PM except in the months of July and August. Contact Pres. John Robinson 204-728-1240.

WINNIPEG: Winnipeg Area Chapter: Third Thursday, 7:30 pm RAA Hangar, Lyncrest Airport or other location as arranged. Contact President Ben Toenders at 204-895-8779 or email raa@mts.net. No meetings June, July & Aug. RAA Winnipeg info also available at Springfield Flying Center website at http://www.lyncrest.org/sfcraac.html.

SASKATCHEWAN

Chapter 4901 North Saskatchewan. Meetings: Second Tuesday of the month 7:30pm Prairie Partners Aero Club Martensville, Sk. info at www.raa4901.com. Brian Caithcart is the chapter president. Contact email: president@raa4901.com.

ALBERTA

CALGARY chapter meets every 4th Monday each month with exception of holiday Mondays and July & August. Meetings from 19:00-22:00 are held at the Southern Alberta Institute of Technologies (SAIT) Training Hangar at the Calgary Airport. Join us for builder discussions, site visits, tech. tips, fly out weekends and more. Contact president Don Rennie drennie@hemisphere-eng.com 403-874-0876

EDMONTON HOMEBUILT AIRCRAFT ASSOC: First Tuesday 7:30 pm EAHS boardroom. Contact President Bill Boyes 780-485-7088

GRANDE PRAIRIE: Third Tuesday, Chandelle Aviation Hangar, contact Jordie Carlson at 780-538-3800 work. or 780-538-3979 evenings. Email: jcarlson@telusplanet.net

BRITISH COLUMBIA

ABBOTSFORD: Third Wednesday 7:30 pm Abbotsford Flying Club, Abbotsford Airport. Contact President, John Vlake 604-820-9088 email javlakeca@yahoo.ca

DUNCAN: Second Tuesday 7 pm members homes (rotating basis). Contact Pres. Howard Rolston, 250-246-3756.

OKANAGAN VALLEY: First Thursday of every month except July and August (no meetings) at the Mekong Restaurant.1030 Harvey Ave. Dinner at 6:00pm, meeting at 7:30pm Contact President, Cameron Bottrill 250-558-5551 moneypit@uniserve.net

QUESNEL: First Monday/Month 7:00 p.m. at Old Terminal Building, CYQZ Airport. Contact President Jerry Van Halderen 250-249-5151 email: jjwvanhalderen@shaw.ca

SUNCOAST RAA CHAPTER 580: Second Sunday 13:30 pm Sechelt Airport Clubhouse, sometimes members homes. Contact Pres. Gene Hogan, 604-886-7645

CHAPTER 85 RAA (DELTA): First Tuesday 7:30pm, Delta Heritage Airpark RAA Clubhouse. 4103-104th Street, Delta. Contact President President: John Macready jmacready@shaw.ca. Website http://raa85.b4.ca.

VANCOUVER ISLAND AVIATION SOCIETY (VICTORIA): Third Monday 7:30 pm Victoria Flying Club Lounge. Contact Pres. Roger Damico, 250-744-7472.

THOMPSON VALLEY SPORT AIRCRAFT CLUB: Second Thursday of the month 7:30 pm Knutsford Club, contact President - Wally Walcer 250-578-7343

ALASKA HIGHWAY: meetings held every third Thursday of every month (except July & August) at the Taylor Fire Hall at 7:30 p.m. For more information call Gerry at 250-782-4707 or Heath at 250-785-4758.

Chapter executives, please advise of changes as they occur. For further information regarding chapter activities contact RAA Canada, Waterloo Airport, Breslau ON N0B 1M0 Telephone: 519-648-3030 *Member's Toll Free line: 1-800-387-1028*
email: raa@raa.ca web: www.raa.ca

Classified Ads

To submit or delete a classified ad, please send to raa@raa.ca and place "RAA ad" in the subject line.

The Recreational Flyer is pleased to offer you colour advertising within the magazine. Previously limited to the back cover, we have added 4 new colour pages which will be available with limited space for your advertising needs. Our rates for both black and white and colour ads remain very competitive and you reach a captive and qualified audience. Ads can be emailed to : classified@raa.ca

Deadline for submissions *is the first of the month preceding date of issue.*
Artwork: Rates apply to camera ready artwork. Digital files are preferred and should be sent as email and in .txt format, PDF, JPEG, MS WORD, Photoshop or other common file types. Advertising is payable prior to printing of magazine unless other arrangements have been made. Payment is in Canadian funds. 10% Discount applies to one year (6 issues) insertion paid in advance. Commercial Classified ad rates 1/8 page minimum.
Advertising Policy: *The Recreational Flyer Publisher reserves the right to refuse any or all advertising for any reason stated or unstated.*
The Recreational Aircraft Association Canada does not assume responsibility for advertisements, but does exercise care to restrict advertising to responsible, reliable individuals.
Please note: Ads running more than 3 issues must be renewed to guarantee continued display in the magazine.

Recreational Aircraft Association Canada
President: Gary Wolf / Treasurer: Wayne Hadath

Recreational Flyer Magazine

Registration Mail Publication No. 09869

Contributing Editors:
Gary Wolf, Don Dutton, George Gregory, Wayne Hadath, Tom Martin
Art Director and Layout: George Gregory. Printed by Rose Printing Orillia, ON

The Recreational Flyer is published bi-monthly by the Recreational Aircraft Association Publishing Company, Waterloo Airport, Breslau ON N0B 1M0. Toll Free line: 1-800-387 1028 email: raa@zing-net.ca. Purchased separately, membership in RAA Canada is $35.00 per year, subscription to Rec Flyer is $35.00 per year; subscribers are elegible for reduced membership fees of $15.00 per year. Rec Flyer to have a single issue price is $6.95.

The Recreational Flyer is devoted to the aerospace sciences. The intention of the magazine is to promote education and safety through its members to the general public. Material in the Flyer is contributed by aerospace engineers, designers, builders and restorers of aviation devices and vehicles, used in an amateur capacity, as well as by other interested persons, publications and organizations. Contributions to the Recreational Flyer are voluntary and without remuneration. Opinions expressed in articles and letters do not necessarily reflect those of the Recreational Aircraft Association Canada. Accuracy of the material presented is solely the responsibility of the author or contributor. The Recreational Aircraft Association Canada does not guarantee or endorse any product offered through articles or advertising. The Flyer and its publisher welcomes constructive criticism and reports of inferior merchandise or services offered through advertising in the publication.

For Sale

FOR SALE KR-2 FUSELAGE in boat stage and metal kit for retractable landing gear castings $300.00 call Ian 604-856-1159 or email tri-pyramid@telus.net Dec11

PROPELLERS, wood, new, never mounted, tractor cwise (view from cockpit), priced OBO plus shipping: One 42x23, weight 2 lb., Lepper, conventional outline, 4 bolts on 70 mm b.c., $195. One 43x34, 4 lb., squared tips, 6 bolts on 75 mm b.c., $295 Call Frank, 905 634 9538

2002 CP 301-A Emeraude. First flew June 2003. TTAF 50 hrs. 0 290G Lycoming 396 hrs. since major. Sensenich metal prop inspected and refurbished by Hope Aero June 15/09. Dual controls (pedals, sticks throttle) custom interior. Annual due May 2012. Always kept in a hanger. Contact Jim Demerling 519-348-9655 (Ont.) $ 21,500.00

AVID AMPHIBIAN KIT FOR SALE $5,000 Complete kit; tube fuselage and tail, all wing parts, wheels, tires, hardware. Left wing started. No engine, no mount, no instruments, no fabric. Contact Don, located near Owen Sound, ON Telephone: 519 372-1383 . email: we3kingers@yahoo.ca

Whelen lights $650 OBO Whelen A650-PR-14 and PG-14 wingtip pos/strobe. A500AVD1 Tail pos/strobe, A490TCF power pack. NEW! Chris 1-866-733-8432

0320 E2C currently mounted on my Osprey which could be included in sale. Osprey has 175 hrs since new engine has 1850 but was dissassembled for a propstrike inspection 200 hrs ago Compression 125 lbs cyl on all four jugs oil pressure good complete with accessories. $6000 for engine $9000 for all aircraft needs refinishing and recover Larry Taylor 250-492-0488 days ltaylor@pacificcoast.net

STITS SKYCOUPE with O-290 125 hp, 240 hrs TT. Garmon 195, Escort 110, ICOM A5, intercom, wing tanks. Located at Burlington Ont CZBA. Must sell due to financial constraints. $12,500 OBO. 905-332-7331

SKYBOLT FUSELAGE with Marquart Charger cantilever U/C., tail feathers, rudder/brake pedals, metal fittings, axles, wheels. Offers. Bill Phipson #3954. Phone 416-431-2009 Dec11

VW ENGINE and many parts. Engine was disassembled after 10 hours for inspection and is still open and appears to be in good condition. Engine has prop flange and one mag. Ten boxes of parts include enough to assemble another complete long block engine. Includes spare oil coolers, spare sidedraft carbs, and there will still be parts left over. Located near Hamilton ON w.brubacher@sympatico.ca Dec11

FOR SALE: Zenith CH601XL , airframe 80% complete, controls installed. Canopy mold. No landing gear. Subaru 2.2L no re-drive. $3000 or best offer. Call 705 279 4399 or 519 351 6251

EUROPA XS monowheel with Rotax 914 turbo engine and Airmaster constant speed prop, 87 hrs total time. VFR panel with Mode C transponder, KMG GPS, Becker 720 com with intercom and headsets. This is a fast and efficient cross country aircraft with low fuel consumption. Asking $65K, no reasonable offer refused. Contact Hazel Peregrym at 250-672-5587 snowgoose@telus.net

Woodward Governor, Guaranteed serviceable, was overhauled and used 25 hours before removal for engine upgrade. $350. Chris 1-866-733-8432

ZENITH TRI-Z CH300-1983. Lyc. O-320 Sensenich prop,ICOM 2000/intercom. Nose wheel mod. Toe Brakes. Nav/Strobes/Bcn. TT 273 $19,500. albanus@rogers.com 905-686-7546

ZENITH CH300 for sale First flight 1990 265 hours TT airframe and engine. Lycoming O320 E2D 150 HP engine professionally "zeroed" by Leavens aviation with all documentation. New McCauley cruise prop installed 3 years ago (cruise all day at 135-140 mph on 8gph). Professionally painted by flying colours in peterborough..$10,000. New sliding tinted canopy installed 5 years ago. New interior Full IFR steam gauges. Blue mountain EFIS light. 3 axis auto pilot. True Trak pictorial pilot AP coupled to Garmin 396 Truk Trak Altrav VS altitude hold with verticle rate. Flo scan fuel management system computer with opitical transducerKing digital 720 radio. Narco mode C transponder with encoder. Ammeter and Volt meter. 4 place intercom for front and back seat headsets. Full lights inside and out for night flying. New tires 2010.12 volt recepticals front seat and back seat for PAX. Reiff full pre-heat system for winter operations..(oil pan heat and cylinder bands for each jug.). Air Wolfe remote oil filter system installed for 50 hour intervals and added engine protection.

New Marvel carb installed 2007. All logs and plans..All owners manuals and professionally produced POH Always maintained to highest standards…$ 35,000….(certified and e-tested!!). I would have no qualms selling this aircraft to anyone…..a joy to fly. Warren 289-259-6460

CAVALIER 102.5, "Aero Sport Power" O-320-B2B; 152 TTSN. Sensenich metal prop. Airframe was totally rebuilt in 1997; 1750# GW, 622 lb useful load; VFR instruments + Garman GTX 327 TXP Mode C & Val Radio; Trutrak Turn & Bank; Kept in heated hangar; 8/10 inside and out. $28,000 or would consider trading for a 912 Kitfox, Merlin, Zenith 701, or similar. cavalier102@uniserve.com or 250-558-5551. Ask for Cameron.

TEAM AIR BIKE; 2 Seater Tandem, unfinished; fuselage complete. HKS Engine (New) 55 Horse. 3 Blade Prop Adjustible. All Instruments; Sitka Spruce Wing Material, wings not built yet. Best offer over $!0,000.00 Contact Dave Gladman; to view dgladman@cogeco.ca

LONGEZE PROJECT with all major fibreglass work completed. Main wings and canard have been matched with the fuselage. Baggage /fuel strakesare complete. There is also a Lycoming O-235 engine available. Work remaining includes elgnine mount, instrumentation, prep and paint. j.f.doyle@shaw.ca

TWO NEW 600-6 CLEVELAND WHEELs complete with brake discs and hydraulic pucks. 1.5" bearings included. New tubes and Mallory Airhawk tires 600-6 type 3, 6 ply. Selling for $240 per side. Complete front landing leg and engine mount including oleo and nosewheel with tire from 65 Cessna 150, not damaged. This has been sandblasted and undercoated. $400. O-200 Continental starter, cable type with 60 hrs since major. $100. Carb airbox for O-200, $40. 403-545-2609 in Bow Island, west of Medicine Hat.

Bowers Fly Baby, Continental 85, 350 TT on engine and airframe. Always Hangared, flown regularly, owner built. Fun, affordable flying, $12,000. Phone 403-614-3855 or email, jw.gray@shaw.ca

MINI-MAX. TTSN 220. 31 hrs since ROTAX 440 and GSC prop overhaul. Always hangared VG condition. ICOM Nav/Com. Medical forces sale. $9,900.00 OBO.
780-460-6841 or cell 780-945-0411

Lost medical Selling plane and hangar. Wittman Tailwind aircraft W8 model, with a Continental C90-14F engine. TTAF 892 Hours, Time on engine 892 hours since overhaul. Rebuilt cylinders installed at 469

hours. Ivo propeller ground adjustable. NO generator. Fuselage recovered last year. Beside the standard instruments is an electronic tachometer, manifold presure guage, 1 radio, 1 transponder. Also a 406 ELT.
Plane has always been hangred except for camping flyins. Price $12,000.00 as is . Jack Steele Brockville ON 613 865 8107 jsteele7@cogeco.ca

ENGINE - LYCOMING 0-320 A3A, 968 SMOH, with starter, generator, mags,
to remove from flying a/c, $9000 + shipping. 905.878.4017, mohne40@yahoo.ca

Glasair 1 kit. as supplied by Glasair but with both conventional and tricycle gear and extended wing tips. Wing in jig , close to closing. Good short field airplane capable of 200 MPH. $13,500 no tax, or crating fees ect. Richard 705-652-6307

King Avionics as removed wrkg from a 182. KMA24, KMD150, KT76, KY197. All guaranteed working. Offers? Chris 1-866-733-8432

Pazmany PL-2 $39,000, 150 hp O320 E2A, McCauley FP metal prop. 1090 hours TT, NDH, always hangared. Full Panel, Good Condition
Hamilton Ontario retaborek@gmail.com for specs and photos

CORBY STARLET CJ-1 90% PROJECT • $2,700 • OBO • Fuselage, 2-pc wing, empennage, wheels/brakes on temp gear, f/g canopy &, cowl, wing tips, reg'd U/L in Canada • Contact Mike Shave, Fergus, ON Canada • Telephone: 519 843 4214 gy20minicab@gmail.com

Heated Pitot, off C150. $350 Chris 1-866-733-8432

Bendix/King KY 97A vhf com radio with shelf and wiring harness. ($1500). Collins transponder (mode 'C') with antenna, shelf and wiring harness ($1100). I-com 4 place intercom (with music option) ,with shelf, wiring harness and head phones jacks. ($100). 2, 4 point hooker harness. ($ 100 ea. set) Contact Norm at graham110@rogers.com for details.

VAL 760 TRANSCEIVER, SN. 04275. Worked when removed for panel upgrade. Asking $600 obo. Comes with mounting tray and connector. Estimated mailing cost $35. Direct inquiries to blehmann@pris.ca

CESSNA RT-459A TRANSPONDER, PART No. 41470-1028, SN 6993, 14V Unit, (for use in 28V aircraft use dropping resistor on mounting) Authorized release dated 11-Jul-13. Worked when removed for panel upgrade. Asking $600 obo. Comes with tray and connector. Estimated mailing cost $35. Direct inquiries to blehmann@pris.ca

Tail wheel assembly complete, New, off Rebel, also main wheels. $350 for all. Chris 1-866-733-8432

Avid 2-place taildragger, high wing, advanced ultralight, excellent flyer, always hangered, less than 200 hrs. on Rotax 582 engine, wheels and skiis, tundra tires - great on grass or paved runway, 2 fuel tanks for extended range, tow bar - wings fold for towing, can be hangered in single car garage. Must sell for medical reasons, asking $14,500 OBO. Come see this one at Oshawa RAA's Barnyard Flyin Sept. 9 at HawkeField (Orono,ON). For more information contact Don 905-436-3665

Cessna 150 Seats and Rails $400, Nice set of seats and rails. Covered in red vinyl. Chris 1-866-733-8432

2005 CESSNA/CYCLONE 180 FOR SALE
Due to re-injury of a lumbar disk, I have to seriously consider selling C-GLEH: Engine Cont. 0470R, McCauley Prop, both 310 hrs SMOH. Float kit, with heavy duty engine mount. King package: com, VOR w. glideslope, ADF & Garmin 295. Classic six pack flight panel. Leather articulating seats, extra light front seats & rear folding bush seats available. Fuel 74 US gallons, 6hr range. C185 landing gear held by full P.Ponk STC kit. 850x10 Cleveland wheels & double puck brakes. Airwolf oil filter & Airwolf oil-air separator. Bubble side windows, large extended baggage compartment for light but bulky items. A/C empty 1700lb, MTOW 2950. Price $96k OBO, or trade your home-built PA12(or equivalent) towards purchase. For serious inquiries email: blehmann@pris.ca Aircraft based at CDC3, near Dawson Creek, BC

Partial kit for CH 701 STOL Wing Spars (finished), ribs, doors, struts, fire wall, dash board, rudder pedals, fiberglass wing tips, spring type main landing gear, bulkheads, some tubing for cabin frame …..and much more….. Asking $2,500 Located near Hamilton Ont. For more details please call: Rob (905) 484-0804

DAVIS DA-5A for sale. All metal Single seat "V" tail with A75 Continental engine balanced with two advanced magnetos: 68h SCMOH; airframe 142h TTAF since new. See RAA magazine article of Sep/Oct 2011 issue: http://www.raa.ca/magazine_pdf/Sept-Oct2011_ProofREV2.pdf
A joy to fly and priced only $ 16,000 (…which is less than price of bare kit: less engine, propeller and instruments! Rob (905) 484-0804 or Charlie (905) 928-7766

1964 Corben Baby Ace . 600 TTAF. Recovered and TOH in 2000. A65. Metal Prop. Great flyer. Can be flown with ultra-light permit. $15000 Gary Wallace 519-223-0368 Hangared in Roseville, Ontario.

1960 Bellanca Cruisemaster 2555 TT 260 HP IO-470F A fast aircraft with good short field performance and triple tail style.Full size nosewheel suitable for grass fields.1000 mile range. Gami injectors, engine analyser,white polyurethane paint . Otherwise stock. Have paperwork to turn it into an amateur built. $65,000.00 Richard 705-652-6307

C150 Engine Mount $450 Overhauled & painted by certified aircraft welder, O-200 to M model C150. Packaged and ready to ship. Chris 1-866-733-8432

VW 1600 aero engine, fresh, with Ellison EFS-2 injection. Dual ignition with one magneto and one electronic, full electrics including starter and alternator, wood prop included. $4000 OBO 519-461-1849

New In Canadian Skies

Send us photos of your completed projects !

Share your accomplishment with others - you've earned it! Please include a brief description of your aircraft and any other details you want to include, and send us a colour print or digital copy (preferred) with it.

Mail your material to the Recreational Aircraft Association of Canada Waterloo Airport, Breslau ON N0B 1M0 ...or **email us** the information and a high resolution digital picture (jpeg format please, and the bigger the better!) to ***raa@zing-net.ca*** or to art director George Gregory at ***gregdesign@telus.net.***

Bob McDonald's Amphibious Zenith 750

A picture of the only Zenith CH750 kit plane flying on Zenair kit 1450 amphibian floats in North America.There is one other flying in the world, and it is in Italy. I built the floats last winter, learned how to paint them, and got an AME to assist my installation. First time install took 16 hrs to complete.

Lycoming 0-290 engine. Comes with 6 bolt pattern prop extension, newly rebuilt carb, new gasgolator, starter, 680 amp battery, light weight alternator, cooling shroud, engine log and mechanics repair manual. ($10,000) Contact Norm at graham110@rogers.com for details.

King Avionics as removed wrkg from a 182. KMA24, KMD150, KT76, KY197. All guaranteed working. Offers? Chris 1-866-733-8432

"Texas Parasol" Silver Bird single seat Basic UL with aluminum fuselage and all metal wings. HAPI VW 1600 with dual ignition and Ellison carb / injection. Day VFR panel. First $5000 takes it Bill Rice 519-461-1849

CARA-TWO (Karatoo) s seat Basic UL with overhauled Continental 75 hp engine and Zenith wood prop. Steel tube and fabric tail-dragger fuselage and all metal wing. Day v fr panel, no electrics. 600-6 wheels with disc brakes. $9,000 OBO Bill Rice 519-461-1849

ACEY DEUCY 2 seat open cockpit project. Fabric covering completed and painted. Engine Continental 0200A rebuilt with logs. New Warp Drive 3 blade ground adjustable prop. B and C Light weight starter and alternator. Full instruments and guages in rear cockpit basic flight instruments in front cockpit. Full electrics. Aluminum fuel tank. Radio included. ELT included. Gross weight 1230lbs. Estimated 50hours to final inspection. Asking $18000. Will sell only as a package. Many extras. 905-786-2482.

Chelton Flight Systems: 2 complete Chelton dual screen EFIS systems. 1 with crossbow AHRS one with GADAHRS. Serious offers? Chris 1-866-733-8432

CHINOOK Factory built in Edmonton 1983. Out of long term storage. Good sails in original color scheme. All oiled and inhibited for storage. Very low hours suspect < 20. VG 54" prop. $4990.00 OBO
780-460-6841 or cell 780-945-0411

Advanced Flight Systems Engine information system. Some probes, fuel flow. $750 OBO. Chris 1-866-733-8432
Autopilot - 2 axis. Servos, control head. Etc from a 182 Serviceable. Maybe adaptable to a homebuilt? $500. Chris 1-866-733-8432

CLOUD CHASER single seat Basic UL (registered C-IFWE) that began life as a Schweitzer 126B sailplane. 40 ft span all metal wing, steel tube and fabric fuselage and tailfeathers. Tricycle with fibreglass main gear. Powered by electric start Kawasaki 4400 with IVO and belt redrive. Day vfr panel. plexiglass canopy. $6000. Bill Rice 519-461-1849 London Ont.

Teenie Two project, 1600cc VW engine test run, nearly complete, 2" wider cockpit, 6" longer fuselage, tubing motor mount, instrumentation complete, canopy with turnover protection, $7,500 invested, good buy at $5,000 306-764-2549 E-mail: williamfr@hotmail.com

1964 Corben Baby Ace . 600 TTAF. Recovered and TOH in 2000. A65. Metal Prop. Great flyer. Can be flown with ultra-light permit. $15000 Gary Wallace 519-223-0368 Hangared in Roseville, Ontario.

For Rent; 1,800 sqft, fully serviced shop with paint bay. Water (well), Oil heat/furnace, built in Air Compressor, 200amp services, spray insulated 12+ foot bay door, 15 foot ceilings, 2 work benches and some shelving. $750.00 plus utilities p/m and only minutes from the Waterloo Regional Airport. Jason (519) 897 8575 or jason@techhi.com

Ads run for a maximum three issues depending on space available and then must be renewed for continued display. Please direct all classified inquiries and ad cancellations to: raa@raa.ca and place "RAA ad" in the subject line.

Classifieds On The Internet:

http://www.ocis.net/tvsac/buyandsell.html -more ads from our Kamloops chapter

http://www.lyncrest.org/sfcclassifieds.html -more ads from our Winnipeg chapter

SAVE +$1,200

STOL CH 750
Light Sport Ultility

ZENAIR LTD

www.zenair.com

MANUFACTURER AND SALES OF "CH" DESIGNS FOR CANADIAN CUSTOMERS

ZODIAC CH 650

FLOAT KITS

STOL AIRCRAFT KITS

Quality Aircraft Since 1974

Since 1974, Zenair Ltd has been designing and manufacturing aircraft kits in Canada. You can buy the popular Chris Heintz (CH) designed kits direct from Zenair and save +$1,200 in crating and shipping costs when you pick-up at the factory in Midland ON.

www.zenithair.com
www.zenair.com

Zenair Ltd. Huronia Airport, Midland ON Canada. Tel: 705-526-2871

Everything for Airplanes!

FREE

2010-2011 800+ pg. Parts Catalog, also on CD, and full color Pilot Shop Catalog!

Aircraft Spruce & Specialty Co. SINCE 1965

1-877-4SPRUCE
7 7 7 8 2 3

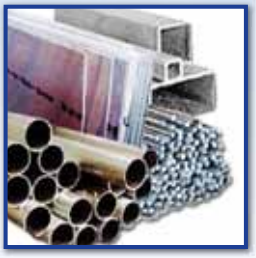
info@aircraftspruce.com

Store Hours:
Monday - Friday
8:00am to 5:00pm
Saturday
8:00am to 3:00pm

AIRCRAFT SPRUCE CANADA (CYFD)
150 Aviation Avenue
Brantford Municipal Airport
Brantford, ON N3T 5L7
Ph: (905) 795-2278
(877) 795-2278

Composite Materials


Wood Products


Metal


Hardware


Airframe Parts


Landing Gear


Engine Parts


Polyfiber / PTI Paints


Instruments


Batteries / Chargers


Electrical


Avionics / GPS


Headsets / Intercoms


Tools


Books / DVDs

www.aircraftspruce.ca