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RECREATIONAL RELYER

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RAA
RECREATIONAL AIRCRAFT ASSOCIATION
RÉSEAU AÉRONEFS AMATEUR CANADA

From The President's Desk

Gary Wolf

RAA VOLUNTEERS

I would like to thank the RAA members who make the office run and who do the work to put this magazine into your mailbox. Rob Schieck and Clare Snyder have for many years worked behind the scenes to keep the RAA computers humming, and we now have a new membership program that cuts out a lot of the repetitive manual entries that were formerly necessary.

George Gregory has for ten years been handling layout and artwork for the Recreational Flyer, and has chased, edited, and written thousands of articles. And in the past year he has also produced and managed the new www.raa.ca website.

Ron Seyffer prints every issue of the Recreational Flyer at his company Rose Printing in Barrie Ontario and gives us a very beneficial rate. Barrie-Orillia RAA members Dave Evans, Ron Seyffer, David James, Ed Martin, Eugene and Gloria Bemus, Jim Mantyla, Jim and Eileen O'Loan, and Lawrence Shaw work together to handle mailing of your magazine.

Thank you all for the work that you have done for many years. Without the volunteer work of these RAA members there would be no RAA Canada.

AIRCRAFT and HANGAR INSURANCE

In Springtime a pilot's thoughts turn to aircraft insurance and this year it appears that there are bargains. EAA has entered the Canadian market, and members looking for quotes on full coverage including hull have reported that the EAA quotes have been very competitive. Copa has been reacting positively to the challenge and they appear to have sharpened their pencils. Many independent brokers have also pushed their underwriters into providing lower premiums this year.

Without the volunteer work of... RAA members there would be no RAA Canada.

It is important to compare apples to apples and the wording is what pilots should be reading before making a decision. Get the wordings of the policies and if you have been using a broker get him to read these to see if he can do better or at least match the offer. This is likely a temporary dip in premiums as EAA buys its way into the Canadian market. You might be

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features

Columns

George Gregory

Above: Shona Hirota's Glasair at a Chapter 85 fly-in.
On the cover: Harry Lasachuk's 5/8 Hurricane Replica


M24 ORION
M24


I-8914
Magni Gyro

The Return of the Gyros

Once sidelined by helicopters, could a new generation of machines figure as contenders for the sport flyer's wallet?

ITALIAN MANUFACTURER MAGNI has been building gyroplanes for 20 year, and their machines are known for their stability, reliability and quality. Magni has recently entered the Canadian market. They are represented here exclusively by Nicolas Horn, who has brought his experience from Europe, where he worked as a professional gyroplane instructor with 1500 hours of flight time.

Presently instruction is offered in Quebec and will be available in the Montreal area in the summer of 2011. Dual training will run about $230 per hour including insurance.

Training is provided on the Magni M24 Orion (an attractive two-place, enclosed gyro) and the M16 Trainer, one of Magni's open cockpit tandem designs. Both aircraft are certified in Canada under a limited Special Certificate of Airworthiness which allows factory-built gyroplanes ot operate and requires 100 hour inspections.

The M24 Orion is designed for cross country flight and features an 82 litre fuel tank yielding 4 hours' endurance at cruise speeds between 120 and 150 km/hour - no doubt helped by the streamlined shape and the lightweight carbon-fibre. If we assume that 4 hours is flying at the higher speed, that would mean this aircraft has a range of nearly 375 miles. As the M24 has room for baggage, practi-

IMAGNI GYRO – leader mondial de l'autogire (600 appareils immatriculés dans 28 pays) – vient d'arriver sur le marché canadien.

La marque est représentée par Nicolas HORN, agent exclusif et instructeur autogire.

Fort de son expérience européenne, où il était instructeur professionel autogire (1500 heures de vol), Nicolas Horn est en effet désormais votre référence pour la formation et la vente d'appareils au Canada.

Une unité de formation autogire et actuellement en place à Québec et une autre le sera prochainement dans la région de Montréal (été 2011). Le coût de la formation en double commande est d'environ 230$ l'heure, assurance incluse (responsabilité civile et dommages corporels).

La formation s''effectue sur le MAGNI M24 Orion et le M16 Trainer, tous deux certifiés au Canada (Certificat de Navigabilité Spécial – Limité). Cette certification autorise les opérations sur les autogires sortis d'usine et nécessite une maintenance effectuée par un mécanicien d'aéronef (toutes les 100h).

Pour obtenir un Permis d'élève-pilote et voler en solo (sans passager), les exigences de Transports Canada sont les suivantes :
titulaire d'un ppl / CPL:

cal cross-country flight becomes an enticing possibility.

The cabin is about as wide as a Robinson R22, but the seating is slightly staggered, so the cockpit is a more comfortable fit than the Robinson.

Power is courtesy of Rotax, in either the 912S or 914 varieties. Despite their initially high cost, these engines allow a 2000 hour TBO, are easy to maintain and are cheap to operate.

Magni has always worked to make their aircraft stable and easy to fly. The horizontal stabilizer provides the required dynamic stability while the heavy composite rotor provides higher inertia, and the CG is properly positioned.

What about training?

Nicolas believes he's the only gyroplane instructore in Quebec and has no knowledge of instruction going on anywhere else. This can be a real problem for prospective pilots; the situation has changed considerably in Europe, however, and Nicolas has plans to address that. Over the last 10 years over 100 instructors have surfaced in France and the UK market is really booming. With this new generation of aircraft, Nicolas thinks the same will happen here, and he is working to make that happen. As more instructors are licensed, the aircraft become increasingly viable as a form of flight for everyday pilots.

To obtain a student pilot permit and fly solo, Transport Canada requires private fixed wing pilots to take 12 hours of dual instruction and 20 hours of ground school; 30 hours combined dual and solo time are required for the full licence, a flight test, and a passing score (60 percent) on Transport Canada's GYROP exam.

Ab Initio students require 12 hours of dual, 40 hours of ground school, the PSTAR exam and the restricted Radiotelephone operator certificate, both available at the training unit.

Availability

I asked if there were kits available, and the short answer is no. I was sorry to hear this because I remember being stuck by how reasonable RAF's kits were priced, with short build times to boot.

Nicolas is selling ready to fly aircraft, coming complete with a certificate of registration, TC approved mamintenance schedule and a special C of A.

Prices run from $32,000 for the M18 single seat to $91,500 for the M24 Orion. This puts them well in line with other ready to fly LSA's.

I have to admit I'm intrigued, and I'd love to experience rotory flight someday. The unique characteristics make for an interesting aircraft with unique utility and safety. I wish Nicolas success and hope he succeeds in his quest to bring gyro flight into the mainstream.

For more information about pricing, training and MAGNI gyroplanes, please contact:
Nicolas HORN
Magni Gyro Canada Tel: 581 998 1460
info@magnigyro-canada.com. Web: www.magnigyro-canada.com

- 12 heures de double commande
- 20 heures de cours théoriques

PilotE sans licence:

- 12 heures de double commande
- 40 heures de cours théoriques
- Obtenir l'examen PSTAR (au sein de l'unité de formation)
- Obtenir le Certificat Restreint de Radiotelephoniste (au sein de l'unité de formation)

Pour obtenir un Permis de pilote Autogire, les exigences de Transports Canada sont les suivantes :

titulaire d'un ppl:

- Atteindre 30 heures de vol (incluant le temps en double)
- Réussir un test en vol avec l'instructeur (N.Horn)
- Réussir l'examen GYROP de TC (50 question – note: 60 %)

PilotE sans licence:

- Atteindre 45 heures de vol (incluant le temps en double)
- Réussir un test en vol avec l'instructeur (N.Horn)
- Réussir l'examen GYROP de TC (50 question – note: 60 %)

Pour plus d'informations sur les prix, la formation et les autogires MAGNI, veuillez contacter:
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Above: the Magni line of gyros.

Propeller Safety

Words Just Aren't Enough

AIRPLANE OWNERS are sometimes accompanied by someone or a group of people, (family & friends), usually for the promise of a "joy ride". If this is their first exposure to aviation they will be excited and may be blind to the risks inherent with aviation, particularly the risk of injury (or worse) associated with coming in contact with a turning propeller! I experienced this firsthand recently, and it was a hair-raising experience, to say the least. Humans never win when struck by a turning propeller. I would like to relate the "lesson learned" to reduce the risk of someone else getting hurt.

It is common for people and passengers to be in the vicinity of an airplane of which the engine is running (well, maybe not common, but it happens). A benign & fun situation can quickly turn into disaster. Consider the following examples of potential incidents and how they could unexpectedly lead someone into a turning propeller:

A Good Samaritan wants to help a taxiing airplane move because one of its wheels rolled up against a crack in the pavement. While pulling on the strut (and before the pilot can warn him about pulling vs pushing) he loses his grip and falls rearward… into the prop;

A family is gathered in front of an airplane at a "safe" distance while they watch their pilot son take his younger sister for a ride. The girl's excited dog gets loose and runs towards the airplane. Mom chases after it…

Bent on paying for his share of the avgas a man pulls out his wallet and extends a $20 bill to the airplane owner while his pilot daughter is warming up the engine. The wind blows it away, towards the turning propeller. The man's goes after it.

An experienced passenger (older gentleman) approaches a high-wing airplane from behind to board it but trips on the wheel and falls headfirst into the turning prop.

A passenger is seated in an airplane but suddenly decides to exit before the flight for physiological reasons (out of nervousness). He takes the shortest route to the clubhouse – through the propeller.

These are just fictitious examples of what could happen, but they aren't far-fetched, and just imagining them should give you goose bumps. You can probably come up with other similar scenarios and may even know of an actual propeller accident. What they all have in common is: what were these people doing so close to a turning propeller?

If you're relatively new to the human race, you can easily (and quickly) conclude that this sort of situation would NEVER happen to you.

You are the cautious type; you simply wouldn't allow something like this to happen. Conversely, if you've been "around the block", you understand that accidents DO happen. Humans are a funny breed - they do things unexpectedly. It's hard to predict how they'll react or what they'll do in any given situation, and no two will react the same way.

As most of you know reciprocating engines on airplanes need to be warmed up before take-off. On a car, you can start the engine and drive off immediately. The engine can be warmed up gradually by driving slowly for the first few minutes. On an airplane, full power is required for take-off – so you simply can't just start the engine and take-off right away. To warm it up in advance also gives time to confirm its working condition. The take-off is the most critical time to experience engine trouble – the pilot needs to know his engine is running properly. But while it is warming up, the propeller is turning and creating a hazard to anyone near it. Besides, a turning propeller is hard to see, almost invisible - one can see right through it. The tips of the blades on some airplane propellers are painted white, on both front and back. This helps to improve their visibility when they are turning at high RPM, but it's not like a safety fence, especially if approaching it from either side.

Some pilots have, on occasion, left their airplane unattended while its engine(s) are being warmed up. Typically these airplanes are tied down or, in the case of float planes, are sitting on their dolly while being positioned for launch. The pilots who do this are taking "calculated risks" to save time in warming up their engines while doing other pre-flight tasks, but even with precautions it only takes a moment of inattention for an accident to happen. And, there is nobody at the controls to turn off the engine quickly should something happen.

One would think that the noise generated by a running engine or a turning propeller is enough to create a "warning" or "safety net". Not so. There are many sources of noise at airports: airplanes taxing by, taking-off or conducting ground runs, other vehicles moving about (e.g., fuel trucks), etc… These can muffle the sound of the nearby running engine. To boot, loud noise has the effect of "dulling the senses", causing people to unconsciously drop their guard.

even with precautions it only takes a moment of inattention for an accident to happen

Thoroughly briefing any / all bystanders of the risks involved should be enough, right? Wrong again. People who are excited about anything tend to lose their focus. All the verbal caution in the world can't prevent someone from walking into a turning propeller.

Words are not enough. The greater the threat, the greater the defenses have to be. A turning propeller is extremely dangerous. The following are some considerations for pilots & operators:

Identify the "danger zone" for your airplane. For airplanes with front-mounted engines the pilot should consider the half-circle in front of his aircraft (wingtip to wingtip) as the "danger zone" (an area within the pilots' view). The engine should not be running if anyone is in or enters that zone. That zone must be bigger if the aircraft is moving or if anyone or anything enters it at faster than a walking pace. Anticipate engine shutdown to account for the propeller continuing to turn as the RPM winds down.

There is no reason to have a passenger (even an experienced one) outside of an aircraft while its engine is running. They

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Two Essential Steps

Doing independent inspections the right way / by Michael Adam

The integrity of aircraft control systems is vital to the safety of the aircraft and its occupants. In an effort to reduce accidents and improve the safety of aircraft, regulatory requirements have a special inspection process often referred to as a "Dual Inspection" or an "Independent Inspection".

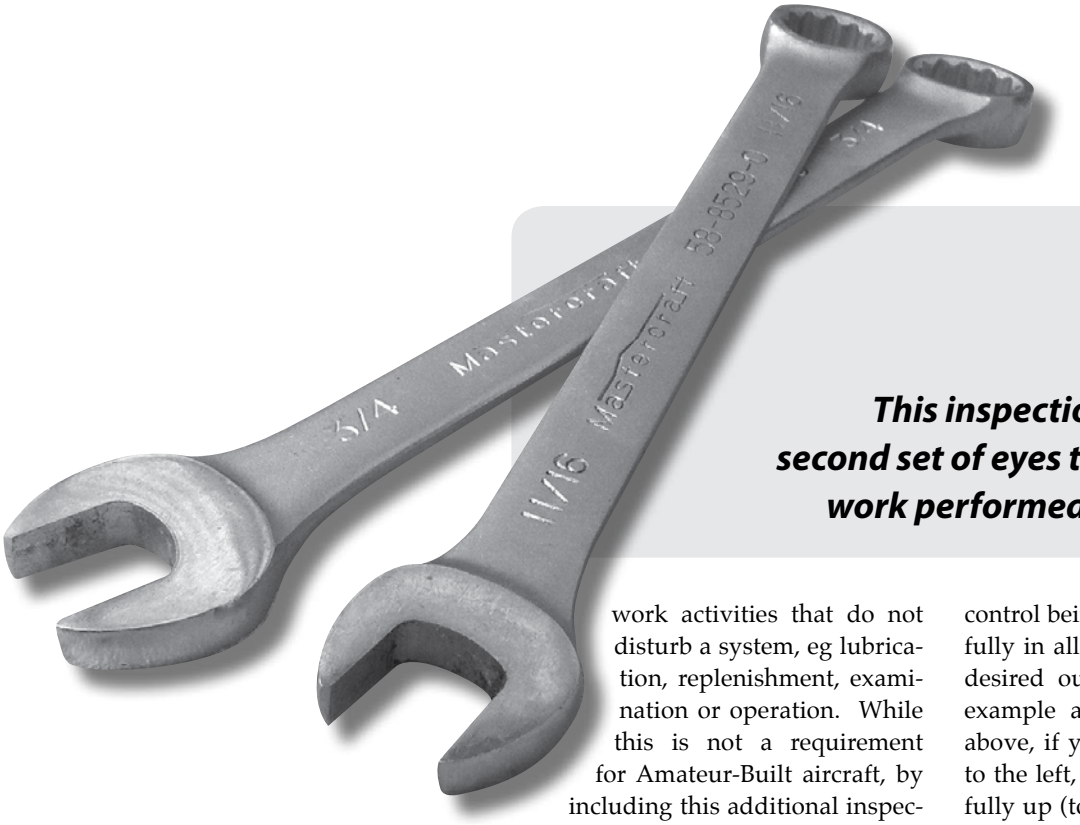
First of all, you need to know that this is not a regulatory requirement for amateur built aircraft. For Aircraft Maintenance Engineers and certified aircraft this is a CARs requirement as per Part V - Standard 571 – Table of Work, item (d). The main point of this article is to make you aware of the independent inspection process so that you can use it to increase your safety and reduce your human induced errors.
This inspection is basically a second set of eyes to check certain work performed on an aircraft. There are 2 Essential Steps to determining if an independent inspection is required, and this is determined by answering the following two questions. If you answer yes to either of these questions, it would be appropriate to carry out an independent check.

Does the work performed cause a disturbance in the *Flight* Controls?
Does the work performed cause a disturbance in the *Engine* Controls?

It's as simple as that. However to become crystal clear on exactly what these two questions are asking, we first need to define what exactly is meant by Engine and Flight Controls, and what is a Disturbance?

"Engine and Flight Controls" can be defined as to include all controls by which the propulsive force or flight path of an aircraft can be altered.

"Disturbance" of an aircraft system will occur when maintenance work involves disconnection, replacement, connection or assembly of any element in that system, and may also occur when such a system is adjusted. It does not include adjustment of travel stops, and simple adjustments outside of the control system. The removal of co-pilot control wheels or sticks, and rudder pedals that have been designed for rapid replacement without the use of hand tools, is also exempt from the need for two inspections.
An independent inspection is not required following maintenance



This inspection is basically a second set of eyes to check certain work performed on an aircraft.

work activities that do not disturb a system, eg lubrication, replenishment, examination or operation. While this is not a requirement for Amateur-Built aircraft, by including this additional inspection process to your work habits, you can significantly improve your own safety.

The Inspection Process

The inspection calls for the work accomplished to be inspected for correct assembly, locking, sense of operation and range of operation. Correct assembly of the system is self explanatory.

Locking (for example) refers to the attachment hardware being correctly installed and in safety, or torqued as required, and cable guards are correctly installed on pulleys.

Sense of Operation refers to the control being inspected that it moves in the desired direction for the desired outcome. For example, if you move the control stick to the left, the left-hand aileron goes up and the right-hand aileron goes down, or when the throttle lever is moved to full forward that the arm on the carburetor / fuel injection servo also moves toward full throttle.

Range of Operation refers to the control being inspected that it moves fully in all desired directions for the desired outcome. Using the same example as for sense of operation above, if you move the control stick to the left, the left-hand aileron goes fully up (to the aileron stop) and the right-hand aileron goes fully down (to the aileron stop) and they move fully through their range of operation in the opposite direction. Or when the throttle lever is moved to full forward that the arm on the carburetor / fuel injection servo also moves fully in the forward range of travel (to the stop), and that the throttle also moves fully through the range of operation in the opposite direction.

The Signing Process

This inspection process requires two signatures however the roles of the two signatures are quite distinct.

The primary signature is by the builder/owner signing for the satisfactory completion of the work performed.

The signature of the person performing the independent check attests to the satisfactory completion of a "quality assurance" inspection. The secondary signature is not a final approval of the work; instead, it indicates that an independent review of the work has been completed, and

that no deficiencies have been found. The person who is undertaking the role as the independent inspection responsibility must be suitably qualified to do so. At the very least, in the case of homebuilt aircraft should be another pilot.

The following is a summary of points to consider when inspection aircraft control systems that have been disturbed by maintenance activities. This is not to be a comprehensive list. When checking control systems that have undergone maintenance, the person signing for the work performed and the person signing the independent check should consider the following points independently.

All those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking.

The system as a whole should be inspected for full and free movement. This check should take into account the effects of airframe flexing in flight, the effects of occupants, cargo and baggage, and the full range of positions or other moveable items (e.g. ensure that full rudder deflection does not interfere with elevator up travel, and vice-versa)

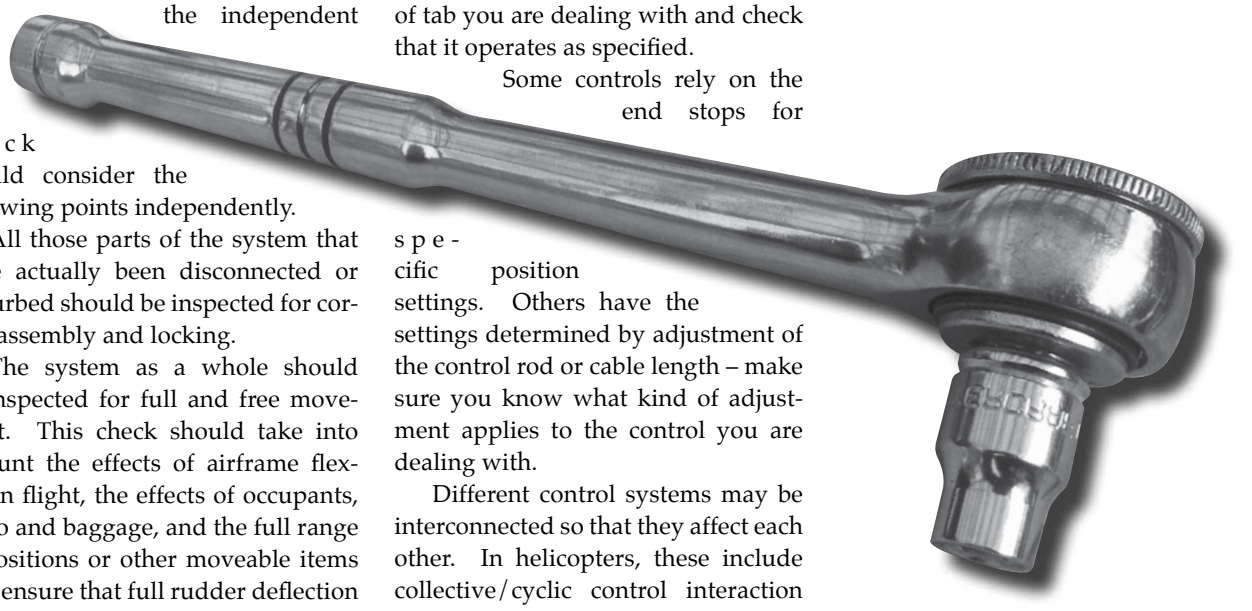
With cables tensioned, and the primary control stops in contact, there should be adequate clearance at the secondary stops.

The range of movement of the controls should be as specified in the aircraft plans or in the aircraft manufactures instructions.

The operation of the control system as a whole should be observed to make absolutely certain that controls (including, in the case of flying controls, each individual control surface) are operating in the correct sense (i.e. that the flight control surfaces respond in a direction consistent with the desired intent of the control input). This check is the single most critical part of the entire procedure, and there can be no excuse for not completing it correctly.

Trim tabs, balance tabs, anti-balance tabs, spring tabs and servo tabs all have distinctly different characteristics. Make sure you know what kind of tab you are dealing with and check that it operates as specified.

Some controls rely on the end stops for specific position settings. Others have the settings determined by adjustment of the control rod or cable length – make sure you know what kind of adjustment applies to the control you are dealing with.



Different control systems may be interconnected so that they affect each other. In helicopters, these include collective/cyclic control interaction and linkages between the collective and power controls. In airplanes, they include rudder/aileron and nosewheel-steering/rudder interconnections. Flap position may be designed to alter the operation of spring tabs or spoilers, or to modify the range of aileron movement. All these interactions must be checked through the full range of the applicable controls.

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Cinderella

Sport Flying's Underrated Sibling

By Ken Armstrong / Gyros have long been the undiscovered beautiful sister of aviation. Sure, there are hundreds of grass roots aviators flying these aircraft that initially seem slow and ungainly to the uninitiated. Truth to tell, they are perhaps the safest and most versatile of the various classes of aircraft.

True, they aren't fast; however, they possess capabilities that make them fairly easy and cheap to fly like fixed wing aircraft but allow them to accomplish many of the flight attributes of their more expensive, complicated, challenging sisters – helicopters. To gain perspective on these almost undiscovered princesses, Kitplanes sent its Rotor Roundup editor back to school.

To be honest, I lucked in…. I have flown a few gyros in my time with qualified captains occupying the other seat; but I didn't know enough about them to determine a really good one from the mediocre. Since this scribe was travelling from southern Arizona to British Columbia at the time, it was logical to seek my qualifications for gyro pilotage at two schools on the route. The two facilities are Joe Souza's Gyroplanes at Yuba County airport California and Sportcopters in Scappose Oregon. Unfortunately, neither school had a certified flight instructor during my visit but I was able to obtain introductory flight training. This installment will cover my initial training at Joe Souza's facility and the follow up article will be with Jim Vancek on his Sportcopter gyro. Joe turned out to be a gem living in a gyro paradise as there are literally dozens of gyros on this airport with at least thirty being Joe Souza designs as well as a few Air Command and Barnett machines. To learn about all the possible bad points relating to an aircraft design, one simply asks aircraft owners what they think about the product and the gates flood open. No one had anything but praise for Joe and his products. This isn't always the case as their are a few "flaky" companies out there. Nonetheless, this high saturation of gyro pilots did provide a lot of information on the shortcomings of other designs as many of these pilots had owned other gyro company products. But that's another story.

Obtaining No Instruction Can Be Very Expensive

Here are a few poignant facts. There are likely far more unlicensed gyros flying in the USA that registered machines. The same is true of gyro pilots. Many avoid taking the approved training for

a variety of reasons: avoiding taxes, cockiness, difficulty finding an instructor or stupidity.

If you try to fly a gyro without instruction, you will almost undoubtedly damage it - if you don't wrap it up in a ball. That's why this 14,000 hour test pilot went to the trouble of seeking professional instruction. Joe Souza stressed the point by mentioning he taught himself how to fly a gyro ten years ago. It cost him $4500 to replace three sets of blades destroyed in accidents! Had an instructor been available then, he could have acquired the 20 hours of professional training for approximately $2000. It pays to take the training!

There are essentially two versions of gyros available. Those with a basic weight under 254 pounds that allows them to be flown as ultralights (There are a few other requirements and restrictions as well.) There is no requirement to obtain any training for this category – but it would be a false economy to avoid a checkout of at least a few hours to gain basic competency. The second category includes all other gyros with basic weights in excess of 254 pounds placing them in the experimental category. Pilots must obtain private gyroplane licenses to fly them. There are also a couple of certified gyros that fit this category. The most significant details of the FAR part 61 requirements are shown in the sidebar.

Let's Fly

Our introductory training program was accomplished on Joe's side-by-side trainer known as the Bandit. It's powered by an EA-81 Subaru conversion producing approximately 110 hp and driving a Prince Q tip propeller through a Souza gear reduction. (Yes, he builds the gyros, gearboxes and Subaru conversions and markets each.)

Initially, we began with ground instruction to understand the limitations and handling of the rotor system and sitting in the cockpit to become familiarized with the controls.

The cockpit is a very open affair with forward struts for resting one's feet on the rudder/nosewheel steering bar, a throttle between occupants and a T-bar yoke that serves as dual cyclic controls. The details of the gyro and its brother the single place Bandit will be covered in future flight evaluations.

Having flown in some open cockpit ultralights in the past, I know the healthy physiological fear that heights can elicit in such open aircraft. We minimized this mental handicap by the standard procedure of numerous touch and goes, not above 50 feet, down the runway. This is very informative as most of the challenges to gyro flight includes taxiing, take off and landings and their associated rotor management.

Regardless of flight time in 350 types of helicopters and fixed wing aircraft, there was a great deal to learn about care and feeding of the rotor system. First of all, the rotor are not driven but rather in a constant state of autorotation. The only reason for blades to turn is when the pilot feeds energy into the disk. Without an optional prerotator system, this begins with facing the gyro's nose into the wind and turning the rotor by hand up to approximately 50 rpm before taxiing. Once started, a wind of moderate strength or better will keep it turning – until you taxi downwind. Let's face it, to get to the departure end of the runway, one generally has to taxi downwind. Under these conditions, it is necessary to taxi somewhat faster than the tailwind so air is forced through the rotor disk. This is tilted aft with the cyclic to maximize the driving force of the relative wind and the pilot holds the stick fully aft to maximize the rotor speed. In the case of moderate or strong winds, one can taxi to the runway threshold and after an intial "armstrong" spin up allow the wind to bring the rotors closer to take off speed.

During taxiing operations one must tilt the rotor much as you would use ailerons in crosswinds and be aware not to turn up into strong winds too quickly as it will cause the rotor to flap back – and this is very stressful to the metal. In the worst case scenario, it may remove the top of the fin and rudder on some gyro designs.

Once sufficient rotor rpm is achieved, (approximately 200 rpm) generally when the rotor tips are a blur and not readily distinguishable, maximum power is applied and the aft tilted disk begins to windmill even faster as the gyro gains speed. The uptilted angle of the disk acts like an up elevator command and the nosewheel becomes light and will lift off if forward stick is not increased to keep it down until the rotation speed of 45 mph is achieved. Once liftoff speed is achieved a slight rearward stick pressure causes lift off and the rotation of the rotors typically creates a slight left bank and perhaps some right yaw. This combination often results in untrained pilots cartwheeling the gyro when their

Above: the machine that started the modern gyrocopter movement: Igor Bensen's B-8M offered a cheap way to get in the air. This example resides at the Canadian Aviation Museum. Photo courtesy Wikipedia/Imnop88a's photostream

In general, short landings are no problem for gyros as their touch down speeds are very low

"untrained paws" often cause them to overcontrol. The resulting large pitch changes and the Pilot Induced Oscillation (PIO) that results commonly leads them to the scene of the accident. Prepared by my instructor for the good control response and slight bank, it was no big event. Next he prodded me to level off and keep the nose down to accelerate to the best climb speed of 55 mph. After a slow climb with our combined weight of 470 pounds we gained suitable altitude and initiated a gentle turn to the downwind leg with a small bank angle to stop the gyro from losing critical airspeed in the downwind turn. There are few items to check in the pre-landing sequence and I was coached to maintain at least best climb speed in the descent to landing. Normal approaches are with a moderate amount of power as the high drag of the disk and cockpit area combined with our high pilot weights would degrade the airspeed quickly with a large power reduction. Similar to a large aircraft, power is carried through the round out and the gyro is easy to flare to a gentle touchdown. (Lighter loaded gyros can easily make power off approaches and flare to low speed touch downs that require virtually no runway.) It's important to approximately center the rudder pedals as their connection to the nosewheel steering can cause the gyro to veer somewhat as the tire touches if it is canted off to the side. With the aft tilt of the rotor disk, deceleration is quite quick – just like a drag parachute used on some fighter jets. Since we don't want to stop, but rather continue forward, we now move the cyclic forward to reduce the aft tilt as we conduct a series of touch and goes.

Additionally, the Souza aircraft are fitted with aircraft quality brakes that are actuated by a brake lever on the control stick that can quickly minimize the after landing roll. In general, short landings are no problem for gyros as their touch down speeds are very low. Although many gyros claim very short take off capabilities, without the optional pre-rotators, it generally requires approximately 1000 feet for us to get off in the heavily loaded trainer. Optional pre-rotators driven from belt and/or hydraulic drives can spin the rotors up to speeds of 125-200 rpm providing almost enough lift in some cases for a vertical take off – especially into a moderate wind. The downside of these devices is the additional weight in the 15-20 pound range, additional servicing requirements and the cost – which can add a couple of thousand dollars to the gyro's price.

Gyros vary in sensitivity and control response, but in general, they are more responsive and prone to PIO than most fixed wing aircraft. This varies greatly between gyros; however, Joe has detuned the sensitivity via gearing and bellcranks to allow novice gyro pilots to achieve a modicum of controllability on their first flights. Even in the strong wind I find I am overcontrolling only slightly in the gusts, degusts and thermals off the runway in the 80 degree ambient temperatures. I learn that speed control within a few miles per hour is very important to maintain a positive rate of climb at our high weight. The lack of airframe components like a level instrument panel or cowling in this rather open cockpit makes it somewhat challenging to maintain the perfect attitude.

As twilight approaches and the winds taper off, flying becomes more pleasant and we observe and enjoy the coyotes and rabbits moving below us in the long grass. After less than an hour, I feel very comfortable with the Bandit two place and feel I could likely go solo. That is until Joe chops the throttle at 300 feet on final approach. Around gyros, one is constantly reminded that a severe nose down pitch change can cause the relative airflow to hit the disk from above thereby decaying rotor rpm and even causing the gyro to tumble. This would be undesirable close to the ground.

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Doug Cowlthorp's
Nieuport 17

DOUG COWLTHORP began building his Nieuport 17 in the Fall of 2009 using a kit from Airdrome Aeroplanes located in Holden, MO, USA.

"I have been slowly building as work and family dictate. I go crazy for a few weeks and then don't do anything for 3 months. Such is life I guess. I have always loved WW1 aviation because of the enormous advances in flying machines in such a short period. The early aircraft of the War and pre-War era could barely get airbourne in light winds and cruise at about 60 mph. By the end of the War (4 years later) they had service ceilings of 20,000' and oxygen for the pilots with cruises in the 140mph range.

Being Canadian, Billy Bishop comes to mind, the highest scoring Allied pilot of the War. Airdrome Aeroplanes sold kits for the full scale Nieuport 17 which Bishop scored almost half of his kills in before moving on to the faster SE5a. The Company now is selling kits for the full scale Sopwith Camel, which I would have built if available when I started. William Barker, the most highly "Decorated" Allied pilot of the War grew up in Dauphin Manitoba and flew Camels in Italy during the war. After WW1 Barker and Bishop opened a flying service together out of Toronto until it went belly up. Too much drinking and not enough work I think.

I plan on using a VW 2180cc engine with a reduction drive producing 100hp and torque of abut 450lb's. With the reduction drive I will be able to swing a 96" prop for authenticity. It will have a Lewis .303 mounted on the upper wing and not much else. I do have an actuall Altimeter from 1918 (thanks E-Bay) that I plan on having in it and also a radio and transponder. Since Winnipeg terminal will so be reclassed as Class C airspace the Transponder will be required. The cruise for the Nieuport in this configuration is suppose to be around 80-85 mph and a climb of 1000' per min. It should be a fun little airplane once completed.

Before starting the Nieuport 17, I had finished a Zenair Zodiac 601XL to about 70% completion over about a 5 year period and then sold it about 5 years ago because I wanted to get flying. I bought a 1970 C150 C-GIDC and flew it for 3 years and during this time started the Nieuport. There is something about doing things with your hands that is addictive. Having grown up on a farm, I think it is just something you get used to, and is hard to not want to do something constructive. I am working on the controls now and have the fuselage on the gear. The horizontal stabilizer is mounted, and the elevators and rudder are finished as well. Once the controls are finished it will be on to the firewall and wings. It seems like so little left and also so much! I still have 3 years to go until the 100 year anniversary of the beginning of World War 1 (the war to end all wars) and the plan is to be flying sometime that summer.

Happy building to all, and here's hoping we all finish that project we are working on sometime. You don't need lots of room, just desire."

Cartercopter Update

SINCE ROTARY AIR FORCE CLOSED ITS DOORS IN 2007, Canada has been without an indigenous manufacturer of affordable rotorcraft. Having roots in the Canadian prairies (yes, I cheer for the Roughriders) made the closing of the Kindersley, SK plant even more poignant for me. I visited the RAF plant on several occasions and was trying to wangle a ride when they closed the doors for good.

For the sport flyer, autogyros make sense: they're simple, loads of fun to fly, and they feature unique safety benefits not found in any other aircraft. In a past issue of the Recreational Flyer, Ken Armstrong (with considerable experience in a wide range of fixed wing and rotary aircraft) concluded that the autogyro is hands-down the safest aircraft out there, since it can land with zero forward speed while remaining impervious to stalls and spins. More sophisticated models with collective pitch control (none are presently available as kit aircraft to my knowledge) can do everything a helicopter can do but hover while remaining considerably simpler. For an impressive example of a jump takoff by autogyro see http://www.youtube.com/watch?v=CFNc1iY8wi0&feature=related.

Helicopters are expensive. VERY expensive. Autogyros, on the other hand, are as simple as airplanes - and safer to boot. The main limitation is that the rotor limits forward speed, though they still feature an impressive speed envelope if you consider how *slow* they can fly.

Which brings us to the Cartercopter.

A lot has been said about this revolutionary idea, and the Carter people have been at it for some time. I can see why they're still at it; the potential of this aircraft can't be overstated.

Jump takeoffs are nothing new. The immediate precursor to the helicopter, autogyros were doing it in the 1930's. But Carter takes it a step further.

Under development for over a decade, the Cartercopter shows intriguing promise. Hoping to feature the best of both worlds, it sports small, high-aspect ratio wings that provide aerodynamic lift at speed.

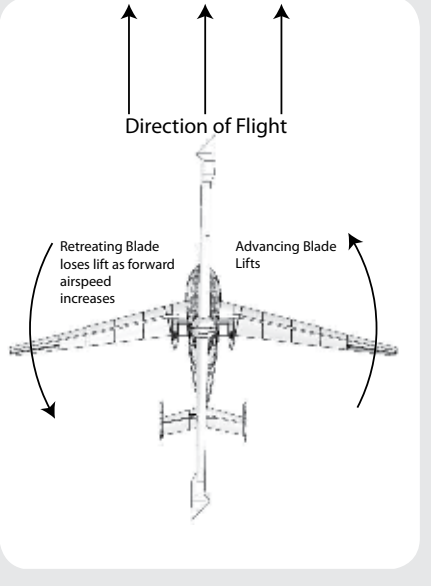
In practical terms, it would be an aircraft capable of VTOL operation while avoiding most of the complications involved with those aircraft. It employs the rotor for slow flight operations while using wing lift for cruising flight.

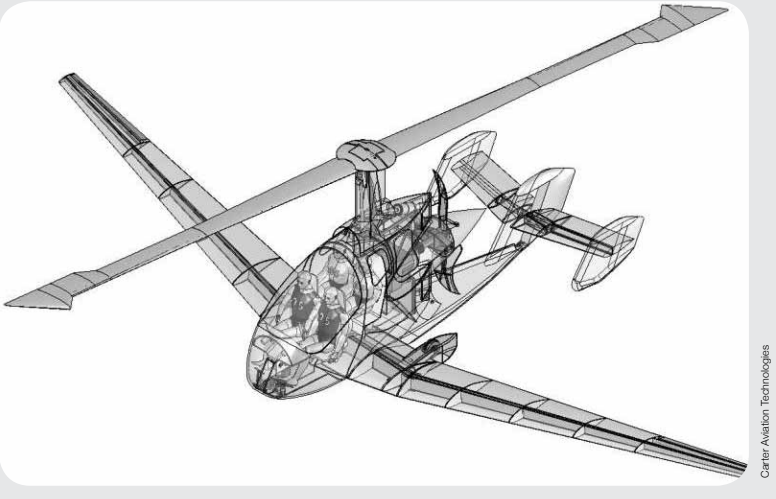
The primary limitation of any rotorcraft is a thing called the Mu (pronounced "mew") barrier. When the forward speed of the aircraft equals the speed of the retreating blade, that part of the rotor is developing no lift and is for all intents and purposes stalled.

The Carter concept involves using wings to lift at higher speeds, while allowing collective control to gradually unload the rotor; at that point retreating blade stall becomes a non-issue as the rotor isn't lifting anything. It's still there, and still autorotating, but at reduced rpm for cruise. This cuts down on its drag while keeping it rigid and with enough inertia to transition back to slower flight or landing.

Using this technology, Carter broke the Mu-barrier an number of years ago.

The Carter system uses 20 pounds of lead in each rotor tip and a collective control. This enables spectacular jump-takeoffs since a good deal of energy is stored in the rotors after prerotation; the drive is disengaged, the collective is activated, and off you go. Once airborne,





Left: the Mu problem. Carter overcomes this by allowing the wings to develop the required lift at cruising speeds. Above, Carter's 4-place PAV.

Anita Infante

Carter's PAV - sans wings - during flight testing

the craft functions as a normal autogyro until going fast enough to put the wings to work.

The weighted rotors also give you a few more options when landing because of the latent inertia. Because of the kinetic energy in the rotors, the gyro can not only land vertically (they can all do that), but it can halt its descent a few feet off the ground if the landing area is found unacceptable and move forward to a more suitable spot.

Work continues on the development of a Personal Air Vehicle capable of vertical takoffs and landings combined with higher cruise speeds than conventional rotorcraft are capable of. In January of this year Carter completed phase one of their PAV flight testing, which included a 30 minute flight and numerous jump takeoffs and zero-roll landings. In the near future they hope to add 45 foot wings and explore the cruising capabilities of the aircraft while operating under wing lift and a slowed rotor.

It's easy to understand its potential. A simple, fast aircraft that can land and take off anywhere it can swing a rotor has tremendous appeal, especially when one considers the extra safety margin enjoyed by autogyros.

One last thing: most compound aircraft have a vulnerability when close to the ground as they transition to forward flight. As evidenced by the Harrier, if the engine conks out before you're going fast enough to fly, you need to eject. With a helicopter, you have a few seconds to switch to autorate mode. While the wings provide cruising lift for the Cartercopter, the fact that the rotor is unpowered means that even if an engine drops off during the transition to cruise, you can still land under control, and that at zero airspeed. This could be the safest aircraft ever designed, while enjoying the best of both worlds. It's easy to see what keeps Jay Carter's enthusiasm stoked - it's revolutionary in every sense.

When can I have one?

George Gregory

Zenair Ltd. re-established as official representative for Chris Heintz designs in Canada

Midland, Ontario, Canada – Zenair Ltd., a pioneer in the Canadian light aircraft kit industry, has been re-established as the official Canadian representative for Chris Heintz kit aircraft designs.

Zenair Ltd. will benefit Canadian customers in numerous ways as the Canadian dealer for Chris Heintz designs in Canada. Zenair stocks complete airframe kits at its factory in Ontario, as well as section kits and individual parts and components to better service the hundreds of Canadian builders across the country. "In-stock parts means better service and support to our customers in Canada," explained Mat Heintz, vice president of Zenair Ltd. "Customers can now pick up their kits at Zenair which can easily save more than $1,200.00 in crating and shipping charges, not to mention the hassles with importing a kit through customs."

Zenair Ltd. replaces Can-Zac Aviation Ltd. for Zenith Aircraft kit sales and service in Canada. Can-Zac Aviation will continue to offer onsite builder assistance and Canadian Advanced Ultralight quick-build assemblies: "We help customers to finish their kits in record time at our facility and assist them with professional builder assistance," states Mark Townsend, owner of Can-Zac Aviation Ltd. "We can now focus all of our energy on building and flying." Mark Townsend is well known among Zenair aircraft owners.

Zenair Ltd. has been actively producing the complete kits for the four-seat Zodiac CH 640 (a low wing based on the certified CH 2000 designs) and the four-seat STOL CH 801, a utility high-wing aircraft, from its production facilities in Midland, Ontario. Zenair also manufactures and markets a complete line of lightweight all-metal floats for light aircraft, which are sold in kit form or factory-assembled and available as straight floats or in amphibious versions. Zenair Ltd. typically employs a skilled workforce of 15 to 20 staff for the manufacturing of parts and assemblies which are shipped to customers around the world.

For more information: Zenair Ltd. Huronia Airport, Midland, ON L4R 4K8 Canada www.zenair.com Tel. 705-526-2871 Fax. 705-526-8022

Above: Shirley and Eldon Legary beside their 1946 Cub in 1961 at Lyncrest Airport. Photo courtesy Eldon Legary.

Recreational Flying At Lyncrest

Simpler times

Beginning before Lyncrest was officially an airport, Lyncrest pilots with their planes loaded with passengers have headed off to explore a new airport on a beautiful fair-weather flying day. Planes are pointed into all directions, dropping to a country restaurant, going out for a round of golf, or landing nearby a summer cabin.

YEARS AGO, long time recreational pilot Jack Foster organized weekly informal 'fly-outs' by selecting an airport, calling up the nearest restaurant and arranging for someone to drive the pilots and passengers into town for a meal. Typically about six aircraft from Lyncrest attended and sometimes there were over 20! Destinations typically included: Arborg, Austin, Beausejour's Klapprat Farm and Waynner's Drive In, Deloraine, Erickson, Killarney, Fort Francis, Lac du Bonnet, Lundar, Manitou, Morden, Oak Hammock Air Park, Piney, Pine Dock, Russell, St. Andrews, Shoal Lake, Silver Falls, Souris, Steinbach, Treherne Flying Farmers, Winkler, and Warren.

Ken Gowler reminsces: "I used to fly off to fly-ins, down to Grafton, up to Brandon, west to Moose Jaw (c 1970s-80s). Four miles out of Moose Jaw the motor quit! I had been at a fly-in where they had given free fill ups for homebuilt aircraft but it turned out there was water in the free fuel. I set it down in a field, cleaned out the carburettor and sediment bowl - lots of water and muck in the fields so it was lucky the plane didn't flip over. The tail wheel went into the mud and the larger piper tires stayed on top of the dry crust on top of the muck. The tail wheel acted as a brake."

John Blackner: "In the 1970s, one of the fellas that flew off of Lyncrest had a T-Craft. Once he flew to Steinbach for breakfast and tied down his plane. When he hand propped the plane to leave, one of his ropes broke and the plane went out of control into the bush. The local Mountie came out to see what was happening…"

Brian Koldyk continues, "At an informal fly-out to my cabin at StoneRidge, near Baldur, MB, we had eleven pilots and nine planes, including: Cam Jay's Champ, Jim Goold's PA 12, Brian Koldyk's Luscombe 8F, Burt Barkman's Aircoupe, Tom Stoyka's Zenair, Ken Podaima's Zenair, Mark Odegard's C-172, Jack Neima's C-172 and Harold Parsonage's C-172. We had twenty four hotdogs, twenty two donuts, there should have been twenty four but Cam ate two on the way out, and two bags of carrots. Jack still can't get over the carrots and I can still hear him saying, 'who brings carrots to a fly-out?'"

"I made a cardboard display about Lyncrest Airport that folded up to fit in my Stinson. When I flew to a fly-in I took the display and propped it outside my plane. A lot of people enjoyed the photographs, map and text." (Bill Gibson).

Looking back, Jack Neima remembers "We often talked about all the Piper Cubs in the area; in 2005, we searched Transport Canada's registry and located over 50 Cubs in unknown condition in Manitoba. We mailed all owners an invitation to a "Manitoba Piper Cub fly-in" at Lyncrest on July 10, 2005. There was lots of interest. However, the weather was marginal so only about 8 Cubs flew in, many Cub pilots drove in. It was a great day meeting fellow Cub pilots and talking about our favourite airplane over the BBQ." R

Across Canada

RAA Chapters in Action

RAA Winnipeg

The RAA and Lyncrest Airport offered a couple of Inuit Lifestyles & Igloo Building workshops and about 14 people stayed overnight in the igloos on one weekend. Participants ranged from 14 to 74 years old, including a retired Snowbird pilot who used to teach Winter Survival and said this was the best course he'd ever participated in! A few weeks later, two couples from Argentina rented the igloos for a romantic night of winter camping. Put it on your calendar for next year as this is a fun way of practising for overnighting after an emergency landing in winter.

Lyncrest Igloo Adventure: RAA Winnipeg and Lyncrest Airport offered a couple of Igloo building and Inuit Lifestyle workshops; a number of participants spent the weekend in their creations.

Last month the RAA had a very successful tour of AeroRecip, Gregorash and AirParts. This Winnipeg-based corporate group provides aircraft parts and maintenance to aviators throughout Canada and USA. We also co-sponsored an annual Recurrency Workshop, where Pete Firlotte from Transport Canada, provided us with the check list enforcement officers use when they do a ramp check. Pilots are encouraged to do their own ramp check to ensure their insurance is valid. Let us know if you'd like a digital copy of the ramp check questions.

Interested in joining our "Read and Fly" program, bids accepted from individuals interested in a ride in the Harvard, Fleet Canuck, Pietenpol, C180 on Floats. Harv's Air's Pitts has offered to take several celebrities for a ride to promote this exciting event. Rides include a copy of "History of Lyncrest Airport"

The heated RAA-Workshop Final Assembly Building has several projects at various stages, including a: Titan Tornado, Bearhawk, C185, ultralight with wings that fold back, Land Africa and Fleet Canuck. Two 16' work benches are still available for someone with a project that is in pieces; there is enough floor space still available for two more full airplanes. Rent ranges from $70 - $250/month and can be arranged for a few days to a few months - a wonderful facility for completing the C of A, converting a plane from wheels to skiis or floats, or building and assembling components right up to the final assembly! Contact Ben Toenders (btoenders@

The RAA Forum is up and running!

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 - simply click on the "forum" tab to get there.

Members are encouraged to send in news and chapter happenings for postings on the site. Get the word out, and check frequently for news on upcoming events. You can post them directly on the forum, and we'll make sure they make it onto the main site as well.

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

shaw.ca) to book your space now.

RAA London/St Thomas

Local Chapter member John Goris is the new owner of St. Thomas Flight-Centre. John founded and operates Purple Hill Air, an aviation maintenance facility near-Thorndale that has established a reputation for excellent quality workmanship, well regarded-nationwide.-John has supervised and conducted maintenance on all of the St. Thomas school planes for-many years and his acquisition of the flying school will be a perfect fit for local aviation. Knowing-John's penchant for hard work and innovation we can expect exciting times ahead at St.-Thomas Flight Centre!-

Cor Wester received a project completion plaque, presented by Angus, for the very-successful completion of his beautiful RV-7. (large round of applause!!)-

Tom Martin noted that due to the great success of the previous Air Rally, he will probably-stage another this year in late August. Tom stressed that he wants participants with aircraft not-just spectators! -

Gus Cameron was called on to introduce Mike Woods, a Nav Canada supervisor located at-London Airport. Mike is well known to this chapter, having been a speaker here before. Mike-then introduced two of his colleagues Ian Proud, an air traffic controller who works here in the-"tower of London" and Steve Connolly, a supervisor in the London FIC.Both presentations were very clear and well executed with great graphic slides, and Mike,-Ian, and Steve stayed well into the coffee and treats segment to answer many Chapter-members questions.

At the April meeting, Ed Hollestelle conducted a tour of his superb shop facility, showing off his beautiful RV-6. He showed a camshaft that failed at 1800 hours, and the current project with a canopy requiring 3 months to complete! Ed has a room separated by solid walls from the main shop in which the grinding dust from fiberglass working can be contained. No dangerous dust gets into the main shop, giving a safer working environment and excellent working conditions.

Then, at about 8:30, John Goris, proprietor of Purple Hill Air, an AMO shop North-East of Thorndale, and the new owner of the St.Thomas Flight Center, showed us his 5-minute walk around preflight inspection technique.

John stressed treating the prop as live at all times! Before anything is touched, look in the cockpit and be sure the mixture is fully lean, the throttle closed, and the key off, and preferable removed.

RAA Midland/Huronia

Our April meeting included a tour of the Zenair factory, adjacent to the airport. Because of that and the fact that members of the local Council and Airport Commission were invited, the turnout at the meeting was at least double that of our usual fifteen to twenty.

Nick Heintz provided a short overview of the history and structure of the Zenith organization followed by a tour of the main factory building, which at this time consists mostly of production of floats and float kits. We then moved to the annex hangar, which houses a Jabiru powered CH-750 project. This project incorporates a number of experimental modifications to the standard 750 design, intended to improve the speed performance without sacrificing the legendary "CH" short field characteristics.

Thank you Nick, for your time and effort.

Ray McNally

RAA Chatham, Kent Flying Machines

Kent Flying Machines had a busy year in 2010. We had 6 building projects ongoing during 2010, with one completed and flown May 4 2010, which ws my own RV-7. We held meetings every month except July and August at which times we sponsored a barbeque every Monday evening at the Kinsman hangar at Chatham Airport.

We held our 8th annual Fly-in breakfast and second TC Safety Seminar on May 29 2010, with about 80 folks or which 40 were fly-in pilots. A great success. We did two formation flybys using RV's and a T-18 for both the Battle of Britain day and Remembrance Day. Both looked impressive and were appreciated.

Jim Easter

Scarborough / Markham

Our guest speaker in February was Wayne Hadath (RAA's national treasurer; whadath@intown.net). Wayne previously built a superb F-1 Rocket which he has been flying and racing for several years. He has recently completed an equally superb 4-seater RV-10 for use with his family.

This aircraft has a span of 32 ft, area of 148 sq ft, empty weight of 1495 lbs, gross weight of 2700 lbs, cruise speed of 180 mph, stall speed of 57 mph, with a 260 HP Lycoming IO-540 engine (same as the Rocket) fed from 2 x 113 litre tanks giving it a range of 1000 miles. It is equipped with an all-glass panel with no steam gauges! - Wayne is comfortable with this from his F-1 Rocket experience.

Wayne is a thoughtful and analytical builder. He is very high on the CNC predrilled quick-build kit which goes together flawlessly. On the other hand, he says one must not underestimate the amount of fibreglass work required and the expertise needed. For example, there are mistakes in design, build and operation of the original gull-wing fibreglass doors and latches; these required extensive modification. He does NOT recommend painting the aircraft piece by piece as it is built; it doesn't pan out as a time saver. However, the kit is very complete with an excellent manual (not without mistakes!); the aircraft is very comfortable with great performance and good value

for money. It required about 1000 hours per year for three years to complete. He has already flown with his wife and two children to many parts of North America; the plane is equipped with oxygen for over-the-mountains flying. We are grateful to Wayne Hadath for a really excellent power-point presentation with wonderful pictures along with his insightful remarks about building and flying.

The guest speaker at our March meeting was Kurtis Arnold (kurtis.arnold@gmail.com or arnoldk@navcanada.ca) who is an air traffic controller associated with NavCanada. He is a pilot of "antique" aircraft like the Tiger Moth, etc., and is currently building a Hatz 2- seater open cockpit biplane with a radial engine. Kurtis spoke to us about his involvement with the TV program "The Aviators".

Kurtis showed us a segment on the Goodyear Blimps which date from 1926. They are demanding to fly – great anticipation is needed – and have a gross weight of 12,500 lbs; 2,800 cubic feet of helium in the non-rigid gas bag; length of 192 feet; powered by two IO-360 200 HP Continental engines; carry six crew/passengers; climb or descend at 30 mph and cruise at 30-45 mph. Kurtis's role is to do the interviewing on camera, where his aviation background is needed. We are grateful to Kurtis Arnold for giving us a most interesting and informative address with wonderful videos. R

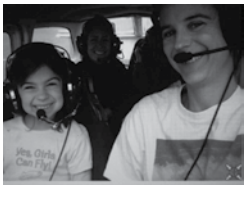
Importing American Homebuilts

In the past month there have been a few calls from disappointed buyers of US-registered non certified aircraft who have found that they cannot register their new planes in Canada.

Canada's regulations allow the import of Amateur Built aircraft but there are some conditions, the most important being that there must be 100 verifiable flight hours in the logs and the plane must not have been factory built. Further, "Experimental" does not always mean that the plane has been Amateur Built. In the US, "Experimental" is a catch-all term and Amateur Built is one subcategory/ "Exhibition" is another subcategory and these planes might not meet our A-B requirements. Advanced Ultralight can also be a problem if Transport Canada's AULA list does not show that there is currently representation for the plane in Canada. Without a listed CDN rep there is no one to sign the paperwork that affirms that the plane may be registered so the only avenue then would be to register in the Basic UL category and forego passenger carrying as a privilege.

All US-registered aircraft must have been removed from the FAA registry before Transport Canada will allow registry here. Before laying down any money you should also ensure that there are no liens, as many Americans who are now selling have financed their planes.

Many Canadians are taking advantage of the strong Canadian dollar and the depressed US aircraft market. If there are questions before buying, National members may email to raa@raa.ca.





Women & Girls Fly for FREE!

Book your flight by contacting <jill_oakes@umanitoba.ca>

Airplane Rides, Prizes drawn every hour, Hot dogs on the BBQ, Certificates, Photographs – all for FREE at Lyncrest Airport.
Limited to the first 200 Women and Girls of all ages so book your flight reservations now.
Prizes for the largest number of women from one family/organization, youngest, oldest…etc
Flights booked NOW for Sept 10th, from 10 am to 4 pm

HARRY-CANE

Harry Lasachuk's 5/8 Scale Hurricane

In the shimmering mid day heat the lone Hawker Hurricane backtracked the runway, turned, and began its takeoff roll. As waves of heat came off the runway the tail lifted, the fighter lifted off and climbed smartly. The gear retracted as the plane passed by me and then I heard the distinctive sound of the engine: not a Merlin, but a Lycoming. This was not a wartime airfield in England but just another day at Guelph Airpark where the Tiger Boys maintain and rebuild their collection of early aircraft.

In this era of CNC aircraft kits that snap together it's hard to believe that at one time the only way to get an Amateur Built airplane was to build it from scratch

THIS PARTICULAR PLANE is a 5/8 scale Sindlinger replica of a Hawker Hurricane, built by Harry Lasachuk in the early eighties.

In this era of CNC aircraft kits that snap together it is hard to believe that at one time the only way to get an Amateur Built airplane was to build it from scratch. It is even harder to believe that someone could have worked from the hand drafted plans available in the early days, to end up with a scale replica of a WWll fighter, complete with retractable landing gear and imitation armaments. Yet this is exactly what Harry Lasachuk decided to do back in the early eighties when he undertook the construction of his Hawker Hurricane. To build a plane meant that a fellow had to be able to read blueprints, and to have the patience to remake parts when there were mistakes in the prints. A builder had to source his own materials, usually from the USA at a time when there were few suppliers, the Canadian dollar was low, and the import process was complicated and slow. Couple these hurdles with the fact that plans rarely came with a manual worthy of the name, and with sparse support except for letters to and from the designer or other builders. It is no wonder that very few started a project and only 5% of those who started one ever finished it.

At the time Harry was running a high tech tool and die shop that specialized in carbide press tooling for the electrical parts industry, and he was accustomed to solving

Harry Lasachuk with his "Harry Cane".

problems for large corporate customers. He was already a pilot and he had a Cessna as his daily driver but he wanted something out of the ordinary. An American named Fred Sindlinger had recently built and flown the prototype of a replica Hurricane and this looked like it could satisfy Harry's appetite. Sindlinger had wowed the audience at Oshkosh with his prototype and soon began selling plans. Many bought sets but few actually built a plane when confronted with the realization that a tapered wing meant that all ribs would be two-offs, and retractable landing gear meant making many welded steel fittings to a close tolerance. For Harry this was just another project to see to a successful completion. He cleared out a room in his shop, set up a level table for construction, and went to work.

The Sindlinger Hurricane is a reasonably accurate 5/8 scale, with only a bit of enlargement in the cockpit area and an increase in elevator area. The primary building materials are spruce and aircraft plywood, with several pages of 4130 steel fittings to be cut, formed, and tig welded. The fuselage is built in two parts, the cockpit section and the tailcone.

The cockpit section of the fuselage is a series of curved bulkheads made up of glued laminations of 3/32" spruce, strung together on spruce longerons. The bulkheads give shape to the plywood skin that carries the engine and flight loads. Accuracy in construction is vital here because the track for the canopy is integral with the structure and must be parallel in all planes. Harry's layout table and levels were used extensively for this section.

The tailcone is a rectangular cross section wood truss, with laminated spruce formers applied at each station to give the distinctive Hurricane humpback shape. Closely spaced stringers give shape to the tailcone, much as one would see in a balsa model airplane. The rearmost section and the belly of the tailcone are skinned in plywood to help carry the empennage and tailwheel loads back to the cockpit and wing structure. Harry used West System epoxy to bond everything, and finished with clear urethane varnish to seal the wood.

The tapered wing is com-

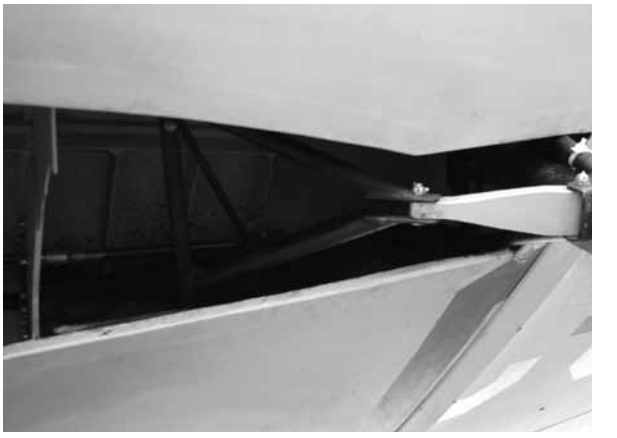
He was already a pilot and he had a Cessna as his daily driver but he wanted something out of the ordinary.

posed of a centre section that holds the retract mechanism, plus two outer wing panels. All spars are boxes, built up from spruce and plywood. The wing ribs in the centre section are routed from aircraft plywood, with cutouts for the retractable landing gear. Ribs for the outer wing sections are built up from spruce with thin ply gussets at each glued joint. Because the wing is tapered each rib must be made to exacting tolerances so that the plywood skin may lie flat and true. The entire wing is skinned in plywood to become a torque box but the landing gear cutouts in the centre section mean that the spars and the upper surface wing skin must carry the torque loads of the flaps and ailerons, hence the solid plywood wingribs in this section.

From the top the wings appear not to have ailerons but a peek underneath reveals that there is a series of bottom-hinged split flaps underneath both the centre and outer wing sections. These and the ailerons are built-up wood structures with partial plywood skins to give torsional stiffness.

The empennage is composed of wood spars with plywood ribs that have oval and tapered lightening holes routed out of them. The curved tips and the perimeters are made from thin spruce laminations bonded with epoxy. The vertical fin is skinned with plywood and bonded into the tailcone structure. Once all the woodwork on the project was completed the entire plane was covered in ceconite, hiding beneath it all of Harry's painstaking workmanship.

On the original Sindlinger the sliding canopy was plastic with the framing painted onto it. This was not accurate enough for Harry so he



Above, left: The cockpit is snug and efficient. The crank on the left operates the gear retract mechanism. Top right, the lead screw imparts motion to a captive nut that operates the toggle linkage to move the gearleg. Underside view - the chain turns the line shaft/lead screw.

decided to make a replica of the Hawker metal canopy frame. His first attempts in aluminum were unsuccessful so he went to thin steel, tig welded together to construct the framework, with the windows themselves made from lexan sheet.

The landing gear of the Sindlinger Hurricane is an ingenious mechanism, and for awhile Sindlinger was selling plans so that owners of other projects could fit his design to their projects. The main gearlegs hinge to the structure of the centre section and the wheels retract inward. A toggle linkage and lead screw mechanism ensure that the gear will remain in position when extended. To actuate the lead screw the pilot has a cockpit hand crank that takes nearly thirty turns of its sprocket and chain to move the gear from retracted to extended position.

One deviation from the original shape was necessary because of the Lycoming engine. To disguise the flat engine Harry made exhaust pipes that emanate from the lateral cowl bumps. These pipes plus the flat camouflage paint distract the eye from the giveaway Lycoming shape. The cowl was made from fibreglass laid up over a plaster form, with all the usual sanding and itching that accompanies these materials.

Two aluminum wing tanks and a cowl tank were Heli-arc (tig) welded by Jimmy Sullivan, and an electric boost pump was added to the engine's mechanical pump. Capacity totals 30 gallons giving nearly four hours of airtime in cruise, plus reserve.

Once the structure was complete Harry installed Cleveland wheels and brakes, a VFR panel and a freshly rebuilt 150 hp O-320 with a Hartzell constant speed prop. For fun he made wing mounted cannons with red lights powered by a flasher unit. The plane was camouflage painted in a 2 part paint supplied by DeHavilland, not gloss but flat to mimic the original Hurricane. Once the roundel was painted on the members of Chapter 41 performed the Weight and Balance and the Hurricane had its final inspection.

George Neal took the Hurricane for its first flight from Toronto Island, and the twenty-five hours were flown off by Red Morris. Red then flew the plane to Orillia for the annual fly-in where it was the darling of the event. It was later flown to Oshkosh and

Above: The flightline at the Tiger Boys' annual September event. Besides the Hurricane replica, a number of other restored aircraft are put on display for aficinados do drool over.

Several years ago the Tiger Boys, Tom Dietrich and Bob Revell bought the Hurricane from Harry to add to their collection of flying vintage aircraft.

was the choice of many of the judges but the flat paint weighed against winning a first place – the gloss paint on another plane snagged the award that year.

Harry Lasachuk flew many hours in his Hurricane and found that it performed very close to the designer's specifications. Top speed is nearly 200 mph and a comflortable cruise is 160-170 mph, consuming 7 gph of 100LL per hour. The Hurricane climbs out at over 1000 fpm at 90 mph. With flaps down the stall is 60-65 mph but the approach is conducted at 90 to provide a good view over the cowl. The plane is not rated for aerobatics but because it is so clean it is sensitive in pitch and roll and could easily handle basic aerobatics.

Several years ago the Tiger Boys, Tom Dietrich and Bob Revell bought the Hurricane from Harry to add to their collection of flying vintage aircraft. Their hangar is famous for the Tiger Moth restorations and every September they hold a vintage aircraft weekend fly-in at Guelph Airpark in Ontario. If you would like to see the Hurricane and other unique aircraft up close, set aside the third weekend next September and fly in to Guelph yourself. Tom, Bob, and Harry will be there, as will the Hurricane, the Moths, and many other beautifully restored classic aircraft. R

Letters to the Editor

Members are invited to submit their comments to our editors! This is your magazine and we'd love to hear from you.

Hello Gary,

A short note to let you know I received my first issue of RAA's Recreational Flyer Magazine. Really enjoyed the magazine, love the photo of the SeaFire Amphibian on the inside cover ...I want one. Actually, my dream Aircraft is a P 136 Piaggio Royal Gull Amphibian but that is a dream for another day.

Check out this link http://royalgull.p166.com/ this aicraft is for sale, I think they are asking $250,000. US ... got to check my lotto tickets. LOL

I am writing to inquire if back issues of Recreational Flyer are available, if so at what cost? Looking forward to reading future issues.

Regards, Brian Berezowski

RAA B.C. (Coastal) Regional Director NOMINATION FORM 2011

Photo Copy This Page

To Nominate Regional Director, fill in name

Nomination for _____B.C. Coastal Regional 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 June 15 2011.

Complete the above, and forward to -
RAA Headquarters, Waterloo Airport, Breslau ON N0B 1M0.
email: raa@raa.ca

The LEMLE Super Band Saw

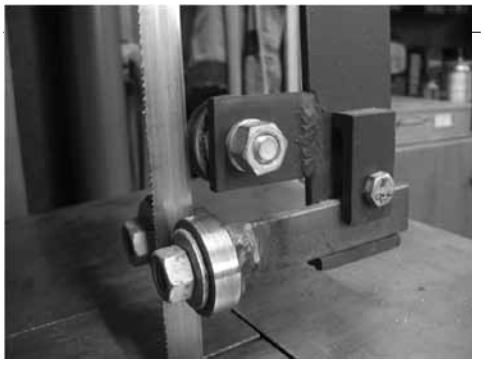
An excellent tool for the true homebuilder (aircraft or otherwise) **by Jim Tyler**

SOME READERS MAY REMEMBER a small advertisement in one of the homebuilt aircraft magazines back in the 1970's and early 1980's about a "Super Band Saw". Plans were $10 and it promised to be an industrial quality tool you could easily build yourself. At that time, my farm shop and cabinet making efforts were in need of a substantial band saw. I needed something that would cut steel with more finesse than my cutting torch and a machine that would re-saw lumber would be a bonus. The Lemle band saw seemed to be worth investigating further.

I sent away for the plans. The ten dollar cost seemed reasonable even with the chance that the promise of a "super band saw" was optimistic. A week later the plans were in my hands and the saw promised to be at least as good as advertized. The concept was truly impressive. The wheels called for were from any junked Volkswagen, tires included. They were a full 25 inches in diameter which would give a good 24 inches of throat clearance. The plans allowed for a 12 inch depth of cut. Band saw blades were anything a person could order from an industrial tool supply shop where they could be made up in any length needed. The blade guides were six, standard, off the shelf sealed ball bearings. I started building the next day.

About a week later the saw was finished. The plans called for anything from a ¼ to ¾ HP motor. A used ½ HP motor was bolted to the frame and the 154 inch bi-metal blade was rolled onto the rubber tires. At a blade speed of 250 feet per minute the saw would cut ¼ mild steel plate at about the same speed I could cut it with a torch. With the drive pulleys shifted in order to give 1700 feet per minute plus a blade change to a band better suited to cutting wood, it would saw 2 inch green hardwood planks about as fast as a person could push them through the saw. I was totally impressed.

The simple and robust 4 inch by 3/8 inch wall round pipe frame gives the saw rigidity and weight. All other fabricated components are made



Above: the saw frame complete without the cabinet or guards from the original Lemle plans package. Top left, a photo of the upper blade guides on the author's saw. The upper blade guard is removed for clarity.
Left: the author's saw with the throat plate removed. Both sets of guides can be adjusted for blade widths from 1/8" to 2". Upper guides can be raised to allow clearance for 12" stock.

from ¼ inch steel plate or angle. The VW wheels and tires on the original spindles provided the blade with excellent grip and lots of momentum. It is almost impossible to snag the blade or break the band unless seriously misused. The simple ball bearing guides are adjustable for any reasonable width of blade. My blade collection now ranges from 1/8 inch (wide) 12 tooth per inch scroll cutter up to a 2 inch by 2 tooth per inch for coarse cuts in wood.

Plans for the Lemle saw seem not to be available anywhere now. An internet search turns up an archived article or two about the saw but nothing much else.

The design concept and execution is relatively simple and yields an excellent saw. The photos included with this story may inspire some to construct their own version of the saw. If I were to build another, I would look for a tire, rim and spindle assembly that is from the rear axle of a front wheel drive automobile. If the spindle mount flange has a bolt pattern and is parallel to the face of the wheel that's even better. The band rides on the tread of the tire and proper tracking is facilitated by having a camber adjustment for the top tire. A tension adjustment raises and lowers the top tire as needed.

The electric motor drives the saw using a v-belt drive from the motor pulley direct to the tread of the lower tire. The lower tire is off-set slightly to allow pace for this v-belt to run. A slower blade speed for steel cutting is possible by using a transmission of shafts, pulleys and belts to reduce speed to something around 250 feet per minute when using bi-metal blades. A slower speed, around 100 feet per minute, might be best for carbon steel blades if they are cutting ferrous metals.

A word of caution to anyone building their own saw. I have seen far too many home-built shop machines that are soundly made and function well but with no guards for operator and by-stander protection installed. Do not use a band saw until you have a cabinet made-up and installed to cover the saw frame and wheels. A guard should also be installed in front of and above the upper blade guide to help keep operator body parts away from the portion of the blade that is not doing the cutting. Remember, the band saw is the favoured type of saw for cutting meat for good reason.

Eugene Lemle's advertisement was right. He really did have a Super Band Saw. RF

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 Monday 7:30 PM Lake Simcoe Regional Airport Contact Secretary Dave Evans 705 728 8742

E-mail david.evans2@sympatico.caCOBDEN: 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 Angus McKenzie at 519-652-2734 or angus.mckenzie@sympatico.ca

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 8:00 pm at Hangar 41 on north end of Brampton Airport. Contact: President Brian Heinmiller 905-877-7947 b.j.heinmiller@sympatico.ca

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 cgmmv.skylane@gmail.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 Kelowna Yacht Club. Dinner at 6:00pm, meeting at 7:30pm Contact President, Cameron Bottrill 250-558-5551 moneypit@junction.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: Tim Nicholas vibraanalysis@shaw.biz.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 - Dick Suttie Phone 250-374-6136 e-mail - richard_suttie@telus.net

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 Richard at 782-2421 or Heath at 785-4758.

Chapter executives, please advise of changes as they occur. For further information regarding chapter activities contact RAA Canada, 13691 McLaughlin Rd, R R 1, Caledon, ON L7C 2B2 Telephone: 905-838-1357 Fax: 905-838-1359 or call toll free: 1-800-387-1028 email: raa@zing-net.ca www.raa.ca

Inspections / continued from page 11

When working on systems that are equipped with position indicators, determine if the work has affected their operation and, if so, observe the operation of the indicators to ensure they correspond with the actual control positions.

On completion of the independent check, all tools and measuring devices, including protractors, inclinometers, tension meters and rigging pins should be removed and accounted for. All access panels should then be replaced, after which a final check for full and free movement should be carried out.

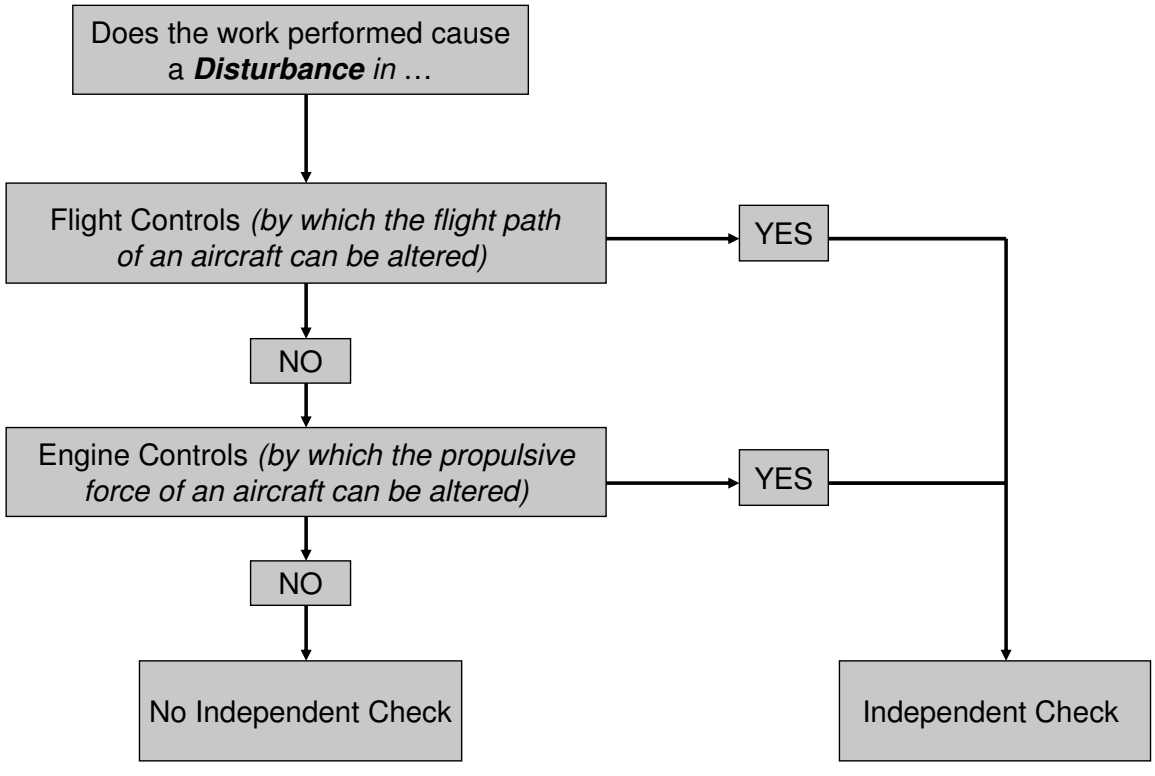
Both of the people who are providing signatures must separately decide on the extent of the inspection to be carried out, depending on the type of control and the nature of work performed. The independent check need not cover to the same range of detail as the check leading to the primary signature. However, as a minimum, it must include an inspection for correct assembly and locking of any parts of the system disturbed by the maintenance performed, and operational check for proper sense and range of operation.

When checking the controls for sense of operation, the best approach is to visualize the aerodynamic and other forces action on the controls and mentally follow the resultant chain of events.

For example, in the case of an elevator control, this method would involve the following thought sequence "Let's see, stick back, control surface moves up, that will tend to push the tail down, which brings the nose up, so the aircraft climbs –

If we would all take the time to give these tasks the attention they deserve, regardless of how simple it may appear control-rigging accidents could be completely eliminated.

INDEPENDENT CHECK FLOW CHART



Your RAA Mailing Crew: Pictures taken by David James at last labeling session. Left to right: Dave Evans, Ron Seyffer, David James, Ed Martin , Eugene Bemus with his wife Gloria and Jim Mantyla. Absent: Jim and Eileen O'Loan, Lawrence Shaw

system checks OK" and repeat for the opposite direction. While this may seem simplistic, it has the very real advantage of reducing the task to its absolute basics, and may just detect an error that would be overlooked in a more sophisticated procedure.

Making the Log Entry

When making the maintenance entries in the Journey log book and Technical log books the person making the primary signature will include the work that disturbed the engine or flight control in the log entry, and sign for their work.

The secondary entry for the independent inspection can be entered in the log books as follows:

"Independent inspection for correct assembly, locking and sense of movement for (insert a clear description of the system, i.e. right-hand aileron) satisfactorily completed", and this statement will be followed by the person signing the secondary signature, followed by their pilot license number and date of the entry.

The Final Word

If you are concerned about liability issues with having someone else signing your log book, or if you are concerned about the liability of signing someone else's log book, remember that this is not a regulatory requirement for amateur built aircraft and no log book entry is required.

Whether you decide to make this entry in your log book or not is your choice, however, the main point of this article is to make you aware of the independent inspection process so that you can use it!

These kinds of errors in the assembly of control systems that lead to accidents can often be very simple, so much so that, with hindsight, it can be difficult to see just how the oversight could have occurred. These are simple human errors and among all the problems that are encountered in aviation, these are among the most avoidable. If we would all take the time to give these tasks the attention they deserve, regardless of how simple it may appear control-rigging accidents could be completely eliminated.

Additional reference: Transport Canada Airworthiness Notice C010.

Coming Events

Second Sunday of each month - Delta Heritage Air Park, Vancouver
Monthly fly-in pancake breakfast by RAA Chapter 85 and DAPCOM. Air Park location is in the CFS. Full breakfast for $4. Breakfast served from 9am until the food is gone or 11am, whichever comes first.

Flamborough Chapter Annual Breakfast Fly-In
May 21, Flamborough ON
Saturday, 8 am- 11 am. If arriving by air, we are a grass strip at Cetinski Field (Flamborough Airpark) elevation 840 ft. 43 22.25 N 79 55.95 W, north of Waterdown, ON. Please note that all circuits are at 1,000' AGL (1840' indicated) and MUST BE to the east of the field.
If driving from Hamilton take Hwy 6 North from Clappison's Corners to Concession Six East, Flamborough. Turn right at the restaurant on the NE corner. Go east to Flamborough Centre and Centre Road. Continue east about 1/2 mile to railway tracks. Cross the tracks and after 50 yards take the first laneway to the left marked Flamborough Springs. Follow this laneway north through the woods to the hangars. There is no sign.

Breakfast and TC Safety Seminar
May 28, Chatham, ON (CNZ3) Breakfast and TC Safety Seminar with Fly Market. Location: N42 18 23 W82 04 55. Chapter 4975 is proud to present our Ninth Annual event. Breakfast starts at 8:30 with the TC presentation scheduled for 10:00. The Fly market will be open during breakfast and after the TC presentation. Lunch will also be available. Come and join us in a day of commeradie, increased aviation knowledge, and brousing the Fly-Market. Bring your spare items tagged and priced. Plenty of parking, a 5000 ft runway, 100LL fuel, and good food. For more information contact Gerrit van Vrouwerff at 519-674-3851 or gerritvan@aol.com

Wings & Wheels Heritage Festival
May 28-29, Toronto, ON: The Canadian Air & Space Museum will host its sixth annual Wings & Wheels Heritage Festival at Downsview Park utilizing Bombardier's Downsview Airport and historic hangars for a rich display of classic and modern aircraft, classic cars, trucks and motorcycles. Fly-in visitors to Downsview Airport must register in advance. For further information, see www.wingsandwheels festival.com. See also www.casmuseum.org.

Midland-Huronia Fly-In
Our annual fly-in on June 11-12 is coincident with an Open Hangar Day (11th only) at the Zenair Ltd. factory, adjacent to the airport. Bring your surplus aircraft parts/materials for redistribution at the fly-market. Camping will be available (no hook-ups), fuel discount, food, vendors, and displays.

Great Lakes International Air Show
June 24-26, at the St. Thomas Airport. Featuring the Snowbirds, CF-18 Demonstration Team, Sky Hawks Canadian Army Parachute Jumping, Harvards, Stearman, Bucker Jungmann and other vintage aircraft. Friday will be aircraft arrival day. Full Air Shows on Saturday & Sunday. Hours 8:00 a.m. – 5:00 p.m. There will be off-site parking with shuttle busses. www greatlakesinternationalairshow.ca

Oshawa Airport Open House
June 25th 2011 rain day June 26
Flyin to a free waffle ,egg and bacon / sausage breakfast between 8:00 am and 10:00 am breakfast will be free to fly-in's and volenteer workers Stay for the day and expierience Oshaw's airport hospitality and veiw some of our local planes old , new, vintage , homebuilt, also activities for the kids such as rib building and prop carving ,,,,see you then JAMES MORRISON for more info contact Jim at jamesmorrison190@msn.com

Saskatchewan Aircraft Adventure
Last year more than 200 adventurers flying 100 airplanes made an outstanding trip to the Yukon in what was the largest group flight in Canadian history. The Century Flight Club will conduct the third annual 100 aircraft flight on July 16 - 23, 2011. This time into Canada's northern wilderness. Registration is $695.00 ($595.00 for registrations booked before Dec.1.2010) Call or go online now to register! Limited to 100 aircraft. 1-778-297-7377 WWW.CROSSCANADAFLIGHT.COM

RAA Chapter 4928 11th Annual Kars 'n' Planes Summer Fly-In BBQ
July 17, Kars Rideau Valley Airpark (CPL3): Comm 123.4 RWY 26/08 Glider activity in area. Homebuilt, Classic and Antique Aircraft, Rideau Valley Soaring Club, Model Aircraft displays, Vintage Cars, Swords and Plowshares Military Museum. BBQ served from 11 AM till 2 PM. Large Brats on a Bun, World Famous steamed Hotdogs and assorted beverages. Overnight camping on Saturday....campfire, "beverages" and food available to campers. Limited bunkhouse space available in new Clubhouse. Reserve ahead. PUBLIC WELCOME. Dilworth Road just East of Highway 416. For more information please email Dave Stroud dstroud@xplornet.com.

Propellers / continued from page 8

must be seated in the airplane and properly strapped-in before the engine is started.

If a passenger suddenly decides to get out of the airplane while the engine is running (for physiological reasons or any other reason) the engine must be turned off immediately.

If ANYBODY approaches the "danger zone" of an airplane while its engine is running it must be turned off immediately, regardless of whether the approaching person is an experienced pilot, an airport employee (eg. refueler) or passenger. By the time you ask yourself: "what's he doing?" it could be too late.

If there is a group of people in the vicinity of an airplane they must be briefed beforehand and one of them should be designated (the least emotional, most focused) to act as the "safety person", keeping everyone else far away from the danger zone (including pets).

BE READY to turn off the engine(s) should anything indicate that the risk level has increased to an unacceptable point. This can happen quickly – one must be vigilant at all times. It's much easier to re-start an engine than to sew someone's arm back on (or attend a funeral).

The above recommendations are simple & logical - they are probably unnecessary reminders for many readers. I certainly didn't think I needed to be cautioned about something so obvious. But as I mentioned in the beginning, it happened to me! And I thought I was a cautious & thoughtful operator. One would think that thousands of hours of flying experience would preclude me from being involved in such an accident.

Take my experience for what it's worth - let's be (extra) careful out there.

Presidents' Message / cont'd from page 2

better off to stay with the broker you already have, rather than to go back with hat in hand a year or two later.

For members who just want the minimum $100K liability it is impossible to beat Copa's Silver Wings program. There is a change this year - formerly all policies expired on December 31st, with the premium declining during the year. The Silver Wings policies are now all one year from inception, with a short rate sheet for return premium if the pilot decides to quit before the end of his year. If you begin in Spring and put the plane away for the winter there is so little return premium that you might as well keep the policy in force for the winter, just in case there are some flyable days.

Hangar coverage is necessary at most airports and airfields and the RAA's broker for the Chapter Liability Policy has very competitive rates. My own condominium hangar group saved nearly one-third over what we had previously been paying to another broker. Contact Bill Davidson at 1-800-463-0754 bill@jsdavidson.ca

REGISTRATION and RAA MEMBERSHIP

With the strong Canadian dollar and the large number of American planes and projects being dumped onto the market the office has been flooded with calls for information to thread through the maze of regulatory and financial obstacles. Awhile ago I suggested that members call or email the office before making a financial commitment. It appears that many who are not National members think that they are entitled to this benefit too, and some even think that RAA is funded by the government to handle the situation. Transport Canada is partially responsible for this - their inspectors regularly tell pilots to contact RAA when they do not know the answers themselves. In some areas of the country the TC staff have little knowledge of the regulations that pertain to non certified aircraft.

Please, if you are recommmending that people call for information, tell them to have their credit card ready to join.

Classified Ads

To submit or delete a classified ad, please send to classified@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.
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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: (1) a 1967 C-172, 3170 TT, Cont. 0-300, 1020 SMOH, new windshield, new battery in Sept./10, new paint in 2005, a working DME, two 720 com. radios, a 121.5 ELT, current annual till Sept./11. $35,000.
(2) a 40' x 30' calhoun super structure. It has 5' steel walls, 10' high doors, fabrene roof and will hold a C-172. It was put up in Nov./04 & taken down in Nov./09. $6,000. Phone 705 544 8743 or whiteheadbj@msn.com Oct10

NEW PRICE! Zenair Zodiac 601HDS Tricycle gear, registered 1993, Rotax 912 UL, ARPLAST flight adjustable prop. 756 hrs TT. ICOM A-4, 2 headsets, GARMIN 95 GPS, Vacuum AH. Stainless exhaust, new upper paint 3 years ago. Canopy cover. Cruise 120 mph. Asking $22,000 CDN. At Oshawa. Dave, 416-282-5252 Oct10

MINI-MAX ttsn 217 seoh 29.8. Rotax 447 new GSC prop. skis. radio. always hangared. excellent condition $11,900.00 obo

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

For Sale: Lycoming 0-235-C engine, disassembled, rebuild started,crank good, needs carb and ring gear hub. $1800.00. Tom at 1-519-822-6693, 1-519-638-5075, millfly@sympatico.ca June/10

For Sale: CH-701, Basic Ultralight, Rotax-912, jeep gear, gull wing doors, $24,500. Tom 1-519-822-6693, 1-519-638-5075, millfly@sympatico.ca June/10

C-IGVE Cara-two (Karatoo) 2 seat basic UL with overhauled Continental 75 hp engine and Zenith wood prop. Steel tube and fabric taildragger fuselage with all metal wing. Day vfr panel, no electrics, 600-6 wheels with disc brakes. $12000 OBO Bill Rice 519-461-1849 June/10

C-ICPZ Silverbird single seat Basic UL with

aluminum fuselage, all metal wings, HAPI VW 1600 direct drive engine with dual ignition and Ellison carb/injector, day VFR panel. First $5000 takes it all Bill Rice 519-461-1849 June/10

C-IFWE Cloud Chaser single seat Basic UL that began life as a Schweitzer 126B sailplane. 40 ft span all metal wing, steel tube and fabric fuselage and tailfeathers, tricycle gear with telescoping nose strut and fibreglass main gear. Powered by electric start Kawasaki 440 with belt redrive and IVO prop. Day VFR panel. plexiglass canopy. $7000 OBO Bill Rice 519-461-1849 June/10

Sonex Ser# 0551 Airframe complete, Ready for engine of your choice, some instruments. Asking $ 16500.00 (780) 968 6739 George Minchau. Email gminchau@telus.net Oct10

Beryl project - tail feathers, all 26 wing ribs, plans - unused. Some Sitka & a/c grade plywood. The Beryl is a Claude Piel design - like a more robust Emeraude but with tandem seating. Good x-country and strong enough for mild aerobatics. Some instruments too. $1,000 takes it all. Call Nigel (705) 429-3449 or landnlaw@sympatico.ca Oct10

Citabria instruments for sale. Airspeed, vacuum turn and bank, whiskey compass, oil pressure, oil temperature, 2 ammeters, battery powered red cabin light. John Foubert 289 752 1650 Brampton. Oct10

Ed Johancsik's 1991 W-8 Tailwind C-FHCE As seen in Sept-Oct 2005 Recreational Flyer, 450 TAFH, 115 HP O-235-LC2, 35 hrs since TEOH in 2008, cruises at 150mph on 4.5gph, Climb out at 800-1000 fpm. Located in Brantford, Ont. Asking $25000 OBO, Contact Colin at Johancsik@shaw.ca or 403 225-0639. Oct10

Continental A 75 that was installed on Davis DA-5A homebuild aircraft. Total time since major overhaul 63.5 hours, Balanced, no electrics, two advance magnetos, engine has excellent compressions and 75 - 80 Hp at 2300 RPM $ 7,800 Negotiable Rob (905) 484-0804 Oct10

Homebuilt Davis DA-5A less engine, All metal tricycle aircraft with 136.05 hours total time. Built to fly with C65 Continental (....it did fly with A 75 Continental) No electric system, includes Sterba wood propeller and basic instruments. Always hangared $5500 OBO (905) 484-0804

For Sale; CH-601 Canopy cover, professionally made, like new, Value $400.00+ Will sell at $300.00 Phone Mike @ 905-476-3438 Dec10

For Sale; New 66"dia. 3 blade Warp Drive propeller with 4" dia. bolt pattern and bolts for Rotax 912S. Never used as it was purchased as a backup. $1500.00 Call Mike @ 905-476-3438 Dec10

STRETCHED PACER PROJECT - ESTATE SALE 0320 160 HP Lycoming engine in crate - extended fuselage 18" - ready for covering - new windshield - side-by-side sticks and toe brakes - large luggage compartment - 2 doors - welded float fittings - seats included - main gear with new Cleveland wheels and double puck brakes - tail wheel and spring - wheel pants - super cub wings with cuff leading edge ready for covering - extended flaps and ailerons- fiberglass wingtips - 15 Imp. Gal. Tanks/wing - most instruments included $29,500.00 complete (905) 985-3195 Rose Dec10

Brand new dynafocal ring for Rotax 912/914, never used. Regularly $800 plus tax, I have one for $375 CDN plus shipping. gpeees@hotmail.com Dec10

For sale: Engine Mount for LOM 337B Engine installation into a Zenith CH 801. Asking $1,200.00. Nose Gear for the same, $1,000.00. Walter Lom Engine: New factory overhauled M337B (6 cylinder, inverted, inline, supercharged, certified 235 HP aircraft engine): 1400 hours TBO with possible 200 hour extension, including spare parts, tool kit, log book, and manual. In its original shipping crate. The distributor, governor, and oil lines for a LOM V541 propeller are factory installed on the engine.
Walter Lom Propeller: V541 (2 blade) constant speed propeller with tool kit, log book, and manual. The propeller is brand new and is in the original shipping crate.
One set of aluminum anodized engine mount pad blocks, vibration isolators, and bolting kit. For further information and images contact: Dan Marshall 519-794-3270 dgmec@bellnet.ca Feb11

68 Cherokee PA-28 with 160 hp cylinders. Low time airframe with engine on condition. Plane is based at Brampton. Exterior 6/10, interior 7-8/10. VG's, speed mods, glideslope, Mode C, annual to July 2011. Best Offer. 905-785-9032.

Need to pick up or deliver a plane on a trailer and don't have one? At YKF is one available for members for a reasonable rental fee. Trailer has a flat platform and is 16' x 8', dual axle one of them with brand new electric brakes wired to work. A class III hitch is required with a 2 5/16" ball. A hitch can be provided complete with load distribution bars. The trailer is NOT suited to haul a backhoe or a pickup truck. For more info email Rudy at rudyhane@gmail.com

Wheel Pants Galore! I have several sets in various conditions. Some need work and/or painting. They came off Cessnas and Pipers and likely could be adapted to your homebuilt aircraft. Prices negotiable from $75 per pair to $200 per pair. Contact Rudy at rudyhane@gmail.com

A whole airplane for parts. Sale subject to court decision in US. 1972 Grumman AA5, 2955 TT, 940 SMHO with Millenium cylinders, overhauled 200 hrs ago when high compression pistons were installed. Sensenich prop with 60 hrs TT. Newer radios and instruments. Landing gear with new brakes installed. Parts will not be available till April. And if you need information on how NOT to import an aircraft, I can help you! Contact Rudy at " rudyhane@gmail.com
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

FREE ENGINE Titan T51 Mustang,partially built,includes 160 hp belt drive suzuki engine. Buyer responsible for pick and delivery costs. For more info on kit go to titan aircraft.com Price $54,900 can.email piper22@telusplanet.net or ph.1 780 623 3151

MATERIAL FOR SALE: 2024 T4/6061T6/Utility Grade /Sheet/Plate/Angle Aluminum for sale in a variety of thicknesses and sizes.
350 ' 1x19 316 Stainless Steel Aircraft Cable $175.00, 3 Sheets of Aircraft Grade Plywood. Sheet 4130 Steel 10"x10"x.060",12"x18"x.090", Smaller sheets of very soft aluminum in different thicknesses and sizes. Just ask, maybe I can help.

1 Set of Zenith 601 HD Wings complete with Attachment plates. They have 450 Hrs. of flying time on them with no Damage. They have built-in wing lockers. They come with custom supports on casters for safe storage. Asking $1500.00 obo. 1 complete set of new Zenith 601 Drawings with VHF tape. $200.00 obo. For a detailed list of sizes and prices Please contact Erwin @ 905 457 3716 or erwinhornemann@bell.net

Bede-4 for sale! 380+ hours TTSN, Lycoming 0-320 E2D McCauley FP prop 75x53 2000 lb GW, 1285 empty. Murphy ext. metal wings, 30 ft with droop tips. Vortex generators, Extended flaps and ailerons. Wing fold mech. built in! Complete set of fairings - all design improvements complied with. Cessna gear legs with solid link in gear-box. Murphy type nose wheel (5x4) Towbar (2 pc) New brake discs and linings! Endura paint - 2002. Complete upholstery, adjustable seats, headliner, door panels, carpets. Instruments: A/S, A/H, Alt., VSI, Turn Co-ord., Slaved mag compass. Tach, Vac. Gauge, Cyl. Temp (2) Fuel (2) oil press., amp. meter, clock/air temp and heated pitot. King KX145 NavCom with KI205 Ind., ValCom 760, Flybuddy Loran, RT359 Transponder with Narco AR850 Encoder (mode C) Magellan GPS with expansion card/software, Sharc ELT, 2 place Flightcom intercom, 2 headsets. Maintenance records, builder manual, some spares, etc., halon fire ext. first aid kit. Any serious offers near $27,000 considered. No tire kickers please. Located CYNJ. Contact Fred Hinsch fred7@shaw.ca

1997 Pegastol with moving slat wings (Zenair CH-701 Variant) The original Pegastol aircraft built by the owners of Dedalius Aviation in 1997. Registered as an amateur built aircraft @ 1200lbs gross weight and can be flown with a ULP. Rotax 912S x 100 HP, with slipper clutch gear box and 68" Warp Drive Propellor. Engine just back from Rotax (Tri-City) for starter sprag clutch replacement. Gear box overhauled. New tires and tubes that have yet to leave terra firma. New engine Barry Mounts upon engine reinstall. New Custom aluminum main fuel tank spring 2010. New windshield and upholstery in 2009. Floats have Lake n Air pump out cups (that are rarely needed as floats are tight). 1/2" sound deadening foam throughout cabin. Wheel gear and forks also included. TTAF 600 hours, 912S Engine TT360 hrs, Prop TT 512 hrs, TT on Amphibs 422 hrs. New $700 Heavy Duty starter. Offers on $49,000 Cdn For more details view at www.irish-field.on.ca or send us an email oifa@irishfield.on.ca

Nostalgair N3 Pup $7500.00
Registered as Basic Ultralight and in flying condition. This Pup has a Global 2 cylinder engine and is a gentle flyer. I had no previous tail dragger time and with minimal work was able to feel confident with this little gem. Panel has Altimeter, EGT, CHT, Compass, RPM, Oil Temp, Oil Pressure, Digital Tiny Tach/Clock, and connections for ACK ELT. This Pup is hangered in Winnipeg and I can send photos etc to interested parties. It is easily taken apart for transport on a trailer. piney@mts.net 204-885-2443

For Sale. Lycoming 0-360-A4A. 279 SMOH c/w mags and carb. Recent prop strike inspection by Pro Aero Engines in Kamloops. Yellow tagged. New bearings, rings, gaskets, inhibited and crated, ready to ship. $15,000. Barry Holland 250-785-6431. w-b-holland@uniserve.com

CP 301-A Emeraude, first flew June 2003. TTAF 47 hours O290G Lycoming 393 hours since Major. Sensenich metal prop inspected and refurbished by Hope Aero June 15/09. Dual controls (pedals, sticks, throttle), custom interior, Annual due may 2011. Hangared at Stratford Ont. $25,000. Jim Demerling 519-348-9655

O-200 engine 2000 hours in running condition with accessories. $4000 Ron Fleet fleetair@wightman.ca 519 -364-5975

VANS RV7A, by owner and 6 times Van's builder. TT A/F and E 183.3 hrs. Lycoming 0320/160, AP, EFIS, KLX 135 with GPS and Moving Map,GRT Engine Monitor, 3 blade Catto comp prop., etc, etc, list of eqpt and more pic avble on request, Prof paint., new FlightLine int, superb workmanship throughout. Manitoba, $110,000 204 371 5209, burtloewen@mts.net

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

Hangar For Sale at Lyncrest I am offering for sale this spring my Hangar, #15, at the Lyncrest airport. The building is 48' wide by 42' deep with a 10' interior height. Pole barn construction, galvanized steel sheeting professionally built by Green Bay Builders. 100 amp electrical panel with one 200 volt circuit. Sodium light on the ramp. The hangar has eaves trough on both sides and a water collection system to a 250 gallon tank for washing planes. Floor is compacted ¾ down with compacted ¼ down, vapor barrier, and covered wall to wall with astro turf. Taxes approx $600/year. I belong to the Hangar Owner's Group at Lyncrest for insurance purposes at a cost of approximately $175 per year. Only other costs, besides full SFC membership, is the electrical (billed twice yearly) which runs about $180 annually. Possession by May 31. I will let it go to the highest bidder. Interested parties may contact me at any time for further information and I am available to show the hangar if you need to have a look around or to answer any questions you may have. Jack Neima Phone 204-793-2057
e-mail jackneima@gmail.com

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New In Canadian Skies

Ivan Kristensen's RV-10

My RV-10 project began early in 2008 when visiting a friend in Florida. This long time friend has built several airplanes including an RV-7. For years he has been prodding at me to build a full size aircraft but it wasn't until he introduced me to the RV-10 that I got really interested in such a project.

The actual building of this airplane began in late April 2008. 26 months later it was ready for its first test flight which I did myself at the Waterloo Regional Airport CYKF on June 28, 2010. I purchased the "Quick Build" version of this Vans Aircraft kit which means that the wings and forward portion of the fuselage comes prebuilt. This option cuts the build time almost in half. All the parts are "pre-punched" and fit together very well. I would have to say that the quality of this kit is nothing short of outstanding.

The engine is a Lycoming IO-540 from Aerosport Power with a Hartzell blended airfoil constant speed prop. I have a Magneto firing the bottom plugs and an electronic CD ignition from Light Speed Engineering firing the top plugs. There are two Alternators, a 60 amp main and a 25amp for standby. The standby alternator sits on the back of the engine where the vacuum pump normally would sit.

The avionics include two 8.25" HX EFIS screens from Grand Rapids Technologies, Inc. (GRT) on the left plus a Dynon D-100 EFIS on the right. A GNS 430W GPS/NAV/COM, a SL30 Nav Com, a GTX 330 transponder and a PMA 8000 audio panel rounds out the center radio stack with Vertical Power VP-200 handling all the electrical functions. A two axis auto pilot from TruTrak was installed which is nice for those long cross country flights. This is an all electric airplane so therefore two alternators.

The paint scheme I designed myself but the actual painting was done by Purple Hill Air in Thorndale On. They did an outstanding job which will pass the closest scrutiny. The seats and carpet was done by Flightline Interiors and the headliner and side panel I got from Aerosport Products.

In conclusion let me state that building this airplane has been the most rewarding thing I have done in my life. I would like to thank my good friend Art Penner for the countless hours he spent helping me. Many other friends have helped here and there along the way and to those a great big thank you. Last but not least without the unwavering support of my wife, Dianne, this project would not have gotten off the ground in the first place so to her I shall forever remain thankful.

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 with it.
Mail to: Recreational Aircraft Association of Canada, Waterloo Airport, Breslau ON N0B 1M0
...or email us the information and a high resolution digital picture (jpeg format, 300dpi please) to: raa@raa.ca

Cinderella | continued from page 14

Nonetheless, when the engine quits in this heavily loaded gyro we need to get the nose down somewhat as speed decays quickly and the relatively high rate of sink with the power off requires a little more judgement in the landing flare.

While it may sound like a gyro is very easy to fly, one must realize that much of my fixed and rotary wing background greatly aids my conversion to the gyro. Having said that, it's necessary to also point out that it is my opinion that I would likely have toppled the gyro over on the first take off had I not received instruction about the handling of these unique aircraft. My next series of training flights in Scappose would not go as easy - proving there was still a lot to learn – especially when transitioning from one gyro to another. Stay tuned for the completion.

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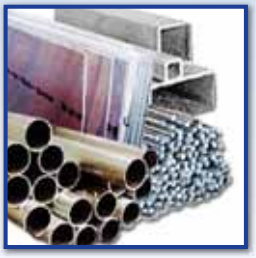
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