

RECREATIONAL FLYER

March - April 2006

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



Buzz Steeves'

Texabell



from the president's desk

Gary Wolf

TRANSPORT MEETINGS AND REGULATIONS

The past two months have been busy at RAA. Director Ernst Schneider and I have attended a series of meetings in Ottawa that are meant to provide industry input into a possible revision of our non-certified regulations. I am still skeptical that all of this will result in anything more than rearranging the furniture, but is necessary to attend to maintain the privileges that we already have. This is not to say that the intent is to limit current privileges, but at previous meetings it has become evident that some of those who have the power to make sweeping changes do not have a very good understanding of the categories that they oversee.

Here is a synopsis of RAA's position on the categories:

-Basic UL. Do not expect to see any changes to this category. Some members are confusing the PP-UL passenger-carrying endorsement with the privileges of the airframe. There is nothing that would indicate that a Basic UL will ever be legal for the carriage of unlicensed passengers.

AULA is still a dog's breakfast because the update of the Eligible List is stalled. Transport will not verify the accuracy of any manufacturer's DS10141 statement, so you are still on your own to determine if your plane is legal for the carriage of passengers. Read the disclaimers on the TC Eligible List page, and you will see that all responsibility for verification is yours.

-Amateur-Built is in good shape because they operate under clear regulations, and Transport inspects them

through their delegation to MD-RA. These planes may currently be flown VFR or IFR with up to four seats and 5000 pounds gross. The limits of Builder Assist are always being reassessed, but if you are building your own plane the traditional way you are on good ground.

-Owner maintenance is a dead end for anyone who puts his plane into this category. At one time it seemed like a reasonable alternative for the owner of an aging certified plane, but now the US will not allow them into their airspace. An O-M plane has very little market value and the parts still cost the same. Plus, Transport is now interpreting the regs in a more narrow fashion, so that even amphib floats are not allowed. Not a good category anymore.

-Light Sport is on the horizon of our regs but we do not seem to be approaching it at any great rate of speed.

-Owner built Light Sports may be registered in the amateur-built category if they meet the 51% requirement, or in the AULA category if they meet the 1232 pound gross limit and the manufacturer sends in a DS10141 statement. Fully-manufactured Light Sports may be registered in the Limited category on a one-off basis.

The Light Sport category in the US is now flushing out all of the overweight Part 103 planes, and a lot of them are being listed on E-Bay. You may import one of these and register it in the Basic UL category without any inspection or oversight. Be careful though - there are no design standards, and a 254 pound plane has to be pretty minimal in construction. A local fellow

recently bought one and then flew it with minimal inspection and no weight and balance. His airspeed indicator was non-functioning too. In aviation you should learn from the mistakes of others, because you won't live long enough to make them all yourself.

JAIME ALEXANDRE'S ENGINE SEMINAR

Jaime Alexandre is an RAA member who wears many hats, among them Chief Inspector of MD-RA. For many years he has been designing and building his own aircraft, and for the past ten years he has been developing the Geo automobile engines for aircraft use. At present he has over 1400 air hours in planes powered with his conversions. This month Jaime held a tell-all two day seminar to show members how to convert these engines properly, even to the extent of explaining how to cut gears for a belt drive. He had two engines on display, a Subaru with the SPG gearbox, and a Geo 1300 with his own belt drive. The Geo was unusual in that it was laid down horizontally and had been dry-sumped. Jaime ran this smooth and quiet engine for the forty members who attended, and demonstrated the adjustability of its Tracy Crook computer.

The costs for this seminar were borne by Jaime himself, and during the meeting he passed the hat to collect voluntary donations. These totalled over \$1000, and all funds were donated to RAA Canada to assist with the costs of providing representation at Transport meetings in Ottawa.

Continued on page 33

The Recreational Aircraft Association Canada

13691 MCLAUGHLIN ROAD, R R 1,
CHELTENHAM, ON L0P 1C0

Telephone: 905-838-1357

Fax: 905-838-1359

Member's Toll Free line: 1-800-387-1028

email: raac@inforamp.net

www.raa.ca

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Features

Resurrection of a Comet

by Bill Tee.....4

It's Always Been About Power

First in a series / by Thomas Hinderks8

What's a Homade 183?

by Norbert Glatt9

Les Fauchers De Marguerites

by/par Serge Ballard.....10

Introducing The Transition

MIT grads tackle roadable aircraft / by George Gregory12

Over The Horizon, Part 2

More cross country tips from Curt Reimer16

ReBorn

Team effort brings Buzz Steeves' beautiful C-140 back to life

by Gary Wolf.....22

Tiger Boys

Michel Tondreau at the RAA fabric seminar30

From the President's Desk

by Gary Wolf.....2

Across Canada: Chapters in Action

by Don Dutton.....19

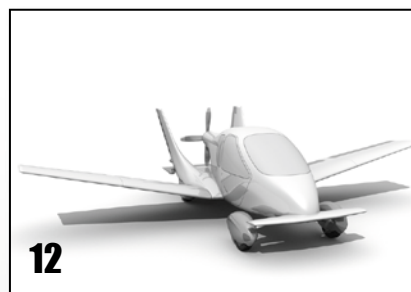
Tech Stuff

Scratch-Built Seats / by Ernie Riddle33

Tape Measure Setup / by Gary Wolf.....34

Classified.....38

New In Canadian Skies41





Resurrection

of a Comet
By Bill Tee

IN MARCH 1933 a gentleman named Sir MacPherson Robertson proposed an air race from Mildenhall, Suffolk, England to Melbourne Australia to celebrate the 100th anniversary of the founding of the Australian state of Victoria. Melbourne was named after a small Derbyshire town of the same name, not far from where this restoration is taking place. The event was organized by the Royal Aero Club and the first prize of 10,000 pounds (About 1,000,000 today) was put up by Robertson.

DeHavilland found it incomprehensible that a non British craft and crew be the winners of such a competition. With no suitable British aircraft available the directors of deHavilland decided that the company should go ahead and design, build and certificate a suitable aircraft for this mission despite it's meaning a financial loss to the company (I guess that was before bean counters ran everything). All this was done in a mere 9 months. Either things were simpler in those days or there was more will to get things done!

The 5500 lb gross weight aircraft was to cruise with its 220 HP Gipsy 6 engines at more than 200 MPH with a top speed of 225 MPH at sea level. Ceiling was 21,000 feet [4,000 on one engine] and stall speed ranged between 63 and 78 MPH depending on load. They would be sold for a nominal charge of 5000 pounds each. This aircraft would be the

first British aircraft to combine flaps, variable pitch propellers, retractable landing gear and monocoque construction all in one bundle.

The first variable pitch propellers were novel in that they were secured into fine pitch by ground inflation of an internal air bladder [using a bicycle pump I believe] . Upon reaching a predetermined speed after take-off a round disc mounted on the front of each spinner would be forced back by the air pressure and release the air in each bladder permitting each prop to go into course pitch for cruise (not always at exactly the same time – interesting) where they stayed until the bladders were inflated again on the ground before the next take-off. Just try a go around with these suckers!

Three such twin engine tandem two seat low wing aircraft designated the DH88 Comet were built for the event.

This Comet's remains were complete enough that the British CAA considers it a restoration rather than a replica and has allocated its original registration marks, G-ACSP

These three were G-ACSP, G-ACSR and G-ACSS. The first aircraft 'CSP flew for the first time at Hatfield on 8 September 1934 with Hubert Broad at the controls. It was later was christened 'Black Magic' because of its black and gold paint job installed by its owners Jim and Amy (Johnson) Mollison who would enter and fly it in the race.

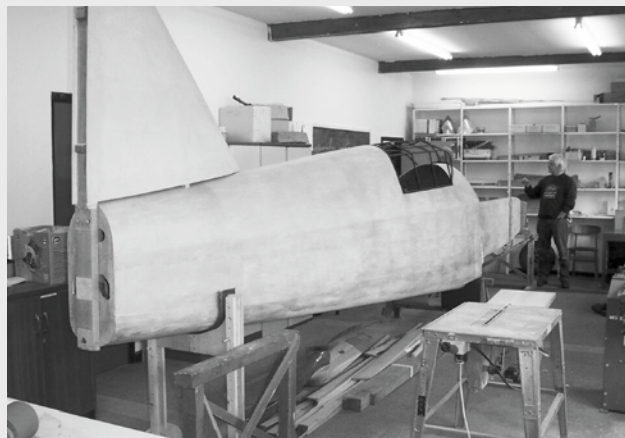
It is this aircraft that is the subject of this story. Aircraft 'CSS went on to be christened 'Grosvenor House' by the owner Mr. A. O. Edwards in honour of the owner's London hotel of the same name. As we all know this is the aircraft that won the race in 70 hours, 54 minutes and 18 seconds. The restored Grosvenor House is now owned by and flying with the Shuttleworth collection at Old Warden airfield in England

Aircraft 'CSR owned by Bernard Rubin was painted green and remained unnamed.

Black Magic unfortunately had to drop out of the race at Allahabad because of damaged engines. 'CSR made a forced landing in Persia due to the crew being temporally unaware of their position. After reorientation was complete the craft rejoined the race and finished fourth.

Although Black Magic did not complete the race it was still the prototype of the breed. After a varied history the aircraft disappeared for forty years. This aircraft was thought to have been destroyed long ago. However in 1979 it was discovered in a Portuguese peasant's barn and bought by Mr. John Pierce. The aircraft's remains were then returned to the UK and were subsequently purchased about fifteen years ago by the Comet Racer Project Group headed by Mr Martin Jones of Derby Airport, Derbyshire England.

The bits were in a very sad state and very little of the original can be used in this flying restoration. However its remains were complete enough that the British CAA con-



Above: Black Magic's remains were complete enough even though there is a lot of new wood going into the aircraft. The British CAA considers it a restoration rather than a replica and have allocated its original registration numbers.

siders it a restoration rather than a replica and has allocated its original registration marks, G-ACSP.

It was during a visit to Derby Airfield in the Midlands of England that I came across this most fascinating project. The 29 foot all wood fuselage is well boxed up and the tail plane construction is well under way. The fin is virtually complete needing only rudder hinges to be added. The wing is to be the greatest part of the project as it

time with predictable results.

On 25 February 1935 Black Magic was sold to the Portuguese government, reregistered CS-AAJ and was renamed Salazar in honour of the Portuguese leader of the time. It's flight time with Carlos Beck and Lt. Costa Macedo at the controls for the 1010 miles from Hatfield UK to Lisbon was only 6 hours and 5 minutes.

Its intended use was to fly the mail from

Lisbon to Rio de Janeiro in Brazil but it is uncertain whether it was ever used for that purpose.

On 14 March 1935 during a takeoff from Sintra, Portugal to set a trans Atlantic speed record the

landing gear failed, apparently not a rare event for the type. The aircraft was transported back to Britain for repairs and returned to Portugal 2 June 1937.

From that time to the present the history of this special aircraft is quite vague. However, the main thing is that it is being lovingly restored to flying condition. What a sight it will be to see two of these beautiful aircraft in the air together! **RAA**

Word has it that it had been stored outdoors for a quite long period of time with predictable results

is a complex piece of wood work. This one piece 44 foot wing is only 11" thick at its maximum and there are three box spars to be built before the ribs are attached and the wing is planked. Because of the thinness of the wing it is not used for the storage of fuel. All 255 gallons of fuel is contained in the fuselage. Virtually none of the original wing is useable in this project. Word has it that it had been stored outdoors for a quite long period of

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FANTASY LAWN MOWING

Just walking out to the hangar, pulling out the plane, doing the walkaround and taking off from one's own strip has much to commend it. The down side is the strip itself and its grass that seems to need constant mowing. Of course one has a riding mower but even with a four foot cut the process becomes time-consuming. Fortunately, guiding the mower does not require one's complete attention and one's mind can be allowed to wander. The mower becomes an aircraft, the ear protection becomes a headset and a story evolves based on stories from long ago. Mine was a childhood and early adolescence of radio dramas. My father's comment about my listening to these radio dramas was that one didn't have to read to just listen as he had had to, to enjoy the dime novels of his time. MY defense now is that I at least had to picture in my own mind the people and the venue of the story. A generation has gone by and now the TV watchers have everything taken away and the entire story is as conceived by the producer and nothing is left for the viewer's imagination.

-Ol Bill



Marcotte

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It's always been about

Since powered flight first became practical the continuing stumbling block has been power. Generally the problem has been not enough, but at various times this problem has expanded to include... too heavy, too large, not to mention my all time favorites, too expensive and too unreliable. In the recreational aircraft field there are wide selections available to a builder. Careful choice of the power package can make your dream bird a real winner, but the wrong one can turn your dream bird into a long-term nightmare. I am hoping with the following series of articles you will be able to see that there is much more available than is commonly assumed. I also hope to show some of the pitfalls and problems that you can encounter by making a poor selection.

by Thomas Hinderks

Part One: Certified engines - new and used

THE SIMPLEST AND QUICKEST WAY to get your dream bird in the air is to stick with the engine it was designed to use. In most cases this will be one of the "Certified" engines from Lycoming or Continental.

This is not a bad thing for most of the people who build aircraft. These engines are for the most part;

- Readily available
- Reliable
- Serviceable
- Designed to fit the aircraft it was recommended for.

Unfortunately with all of these advantages come some disadvantages;

- Expensive both to purchase and maintain
- Parts can carry some problems with local availability (long waits for parts)
- Many engine choices are no longer available new (i.e.:

C-85 and O-200 Continentals)

-Parts for some older engines are becoming very difficult to obtain

-Accessories such as magneto's and charging system items can be very old technology (generators, voltage regulators)

You can skirt some of these problems by purchasing rebuilt ("0" time) engines. While these engines can be as good as new, what you get is going to be completely dependent on the skill of the person or business supplying the engine.

Find out exactly what you are getting from the supplier. Are the accessories also "0" timed? What work has been performed to make the engine "0" timed? This is really one of the times you are going to get what you pay for.

Careful of the so called "0" timed but uncertified engines. Why can't the engine be sold as certified?

If someone other than a licensed aviation technician has rebuilt it what are their credentials? Be extremely careful and absolutely sure of what you are getting. If it appears too good to be true it most likely is.

A good used low or mid time engine is also an alternative to reduce the initial cost, but once more watch what you are buying. Does it have full logbooks? Has the engine been tested? (compression test, leak down, oil pressure) Does it come with any kind of warranty? Why isn't it still in the airplane it was built for? If it is a private seller can the information he gives you be trusted? The best advice here would be to stick to well known aircraft salvage companies and service businesses. They should have all the logs and some form of history on the engine. They are also intending on being around for a while so have little to gain in selling you a piece of junk. / continues

In closing this has been a very quick over view of the pro's and con's of certified engines and hopefully has given you enough information to start you realizing the scope of the decision you have to make. It is not complete in it's depth, but gives you, the end user, a starting point to do you own research.

To help make your digging a little easier check the list of certified engine weights and information on the "Sea and Sky Aviation" Engines web page. I can't vouch for the accuracy but it should be helpful.

RAA

Next Issue: Tom examines Alternative engines.

About the author:

Thomas Hinderks comes from a family with a history in aviation that goes back over 50 years. Past holder of a Private pilot's license and current holder of both a Glider pilot's license and Recreational Pilot's Permit. Tom's automotive background also extends over several decades. With his father being a licensed automotive mechanic and an automotive instructor, he had excellent start into the world of engines.

15 years of auto racing has given him a practical background in the building of engines and what makes them survive. A career in the recycled automotive parts business going over a two decades has kept him up to date in what's new and what is failing in the field.

Tom has also been involved in the conversion of the Suzuki automotive engine for experimental aircraft use as a long-term project going back to the early 1990's.

What's a

HOMADE 183?

by Norbert Glatt

njglatt@sasktel.net

A few years ago the plane bug bit again so I was on the prowl for a second project: something bigger, faster, more powerful and better looking than any other I had seen, a tail dragger, and it had to fly like a dream. Big order? No kidding.

AFTER A FAIR BIT OF LOOKING I ended up with a trailer load of STUFF. 182, 180, 185 and 188 parts. Many hours of drilling and discarding left me with the cabin area from a 182 with partial floor, firewall and upper instrument panel with windshield mount, not much aft of the baggage door.

I started at the front, building a Homade bulkhead at the front doorpost to carry the main landing gear, and milled out the landing gear blocks. Since it is to be flown on wheel skis and amphibious floats the gear blocks were done as saddles (no silly shims like Cessna); the inner ones are sort of like an inverted version of a P. Ponk kit. To change from gear legs to "pork chops" 4 bolts are loosened, 1 removed, and switch leg or chop, replace bolt retighten the others

and it is done. Next the boot cowl and floor were finished, including fuel lines and valve. The aft section was simple enough, a 188 tail cone was chosen to incorporate a trim-able horizontal stab. This cone is taller and narrower than a 182 so the 182 bulkheads had to be modified - progressively taller and narrower and also the corners needed to be re-radiused. Since this body has a back window and it is now a tail dragger

it was necessary to build fairly strong. The stringers were made using 45-90-45 degree bends and installed with two rows of rivets to the .025 outer skin. The tail was straight forward, a very large fin was built (stability on amphis) using spars and some ribs from 185, the rest was Homade. The rudder and elevators

continued on page 28



LES FAUCHEURS DE MARGUERITES 2006

Par Serge Ballard, Faucheur de Marguerites, senior

Les 1 et 2 juillet prochain se tiendra à l'aéroport de Sherbrooke le douzième rendez-vous aérien annuel Les Faucheurs de Marguerites. Cet événement annuel est sans contredit l'événement d'aviation récréative le plus important de tout l'est du Canada. Nos aviateurs viennent particulièrement de toutes les régions du Québec, des Maritimes, de l'Ontario et des États du nord-est des États-Unis pour se rencontrer et apprécier les nouvelles créations ou acquisitions de leurs confrères constructeurs et pilotes. C'est un rendez-vous privilégié que les passionnées d'aviation ne veulent surtout pas manquer.

Cette grande fête de l'aviation récréative est offerte à tous les pilotes et à tous les amateurs de sports aériens. Au fil des ans nous observons un accroissement constant d'achalandage par voie aérienne et nous attendons plus de 300 pilotes aux commandes de leur avion au cours du week-end si la météo le permet. Comme le service de mouvements aériens est administré par des professionnels d'expérience pour ce type de rassemblement, les pilotes sont vite rassurés quant à leur sécurité et ce malgré la présence des nombreux aéronefs en convergence. Sur le terrain on peut admirer des avions de construction amateur, des avions récréatifs conventionnels, des avions ultra-légers, pendulaires, des hélicoptères, des avions antiques et parfois même des appareils militaires. Notre salon commercial et notre marché aux puces sont des plus convoités par les amateurs à la recherche de pièces d'avion, produits destinés aux pilotes et autres perles rares.

Nous offrons des emplacements gratuits pour le camping sous l'aile, sous la tente ou à l'intérieur du VR sur le site de l'aéroport. Les services de base ainsi que la restauration sont disponibles.

« Pour la deuxième année consécutive » Un déjeuner gratuit est offert à tous les pilotes arrivant par la voie des airs et inscrits avant 10h00 AM les samedi 1er juillet et dimanche 2 juillet. Les pilotes n'ont qu'à s'enregistrer sous le chapiteau jaune pour obtenir le coupon accordant ce privilège. C'est pour nous une façon de dire MERCI à ceux qui nous visitent en aéronef et qui de ce fait contribuent au succès de l'événement.

Plus de 2000 autres visiteurs nous parviennent par les voies terrestres au cours de ces 2 journées. C'est pour eux une activité familiale ou les plus jeunes ont la rare possibilité



By Serge Ballard, Communications, Faucheurs de Marguerites

Since 1995, Les Faucheurs de Marguerites du Québec have organized a sport aviation Fly-In at the Sherbrooke airport to bring together as many sport pilots and recreational aircraft builders as possible. This year's event will be held on July 1st and 2nd 2006. Be sure to highlight this event in your agenda. It is the biggest recreational aircraft fly-in in the Eastern Canada. Aviators are coming from everywhere in the Province of Québec as well as Eastern Ontario, New-Brunswick, Prince Edward Island and Nova-Scotia to meet with their aviation friends and to show their latest construction-restoration projects.

Everyone who is interested in aviation is also invited to this big celebration to meet with these friendly aviators and have a close look at their marvellous flying machines. It is not a show but rather a very remarkable aviation enthusiasts' rendez-vous. More and more aircraft come every year with 300 to 500 aircraft expected during the weekend, provided that Mother Nature co-operates. Air traffic is controlled by Professional Flight Advisors experienced in this type of event backed by trained ground crews ensuring safety at all times.

"Les Faucheurs de Marguerites is a smaller version of what you would expect to see at the larger Fly-In's such as Sun-n-Fun or Oshkosh: Planes of all kinds, commercial booths, fly-market, conferences, plane judging, aviators and many types of planes. Awards are given to the winners of the amateur built categories as well as the restoration categories. Aviators can camp under the wing or on the free campground area at the airport site. If you have anything you would like to clean out of your hangar, bring it to our flea market where

de découvrir l'aviation, les aviateurs et les avions de très près. Le rendez-vous aérien a lieu même si mère Nature fait des caprices.

Notre rendez-vous aérien est aussi l'occasion de couronner les gagnants du concours de construction et de restauration d'avions de toutes catégories. Le grand gagnant de construction amateur catégorie plan se mérite notre prestigieuse trophée Lucien Beaulieu et les divers gagnants des autres catégories se méritent une médaille à l'effigie des Faucheurs de Marguerites.

Plusieurs conférenciers ont été invités et ils se feront un plaisir de vous communiquer leur savoir et leur expérience. L'horaire de ces conférences sera disponible sur place.

Comme à chaque année, une cantine et un restaurant sauront vous rassasier. Un souper Spécial Faucheurs est servi en début de soirée le samedi. Celui-ci est suivi de la traditionnelle soirée musicale. Cette soirée est l'élément clef pour convaincre votre conjoint (e) de vous accompagner à ce week-end aéro-récréatif social.

En bref, nos bénévoles organisent tout cela pour votre plus grand plaisir dans le seul but de promouvoir l'aviation récréative et ils feront tout en leur pouvoir afin que vous passiez un agréable séjour parmi nous. Notre événement est présenté en collaboration avec Aéropro ainsi que la Ville de Sherbrooke.

L'aéroport de Sherbrooke est situé sur la route 112 en direction d'East Angus. Le coût d'entrée pour tout le week-end est de 5\$ pour les adultes. C'est gratuit pour les enfants de moins de 16 ans. L'accès au site est gratuit pour tous les pilotes et leurs passagers qui arrivent en avion. L'aéroport ouvre très tôt et le restaurant servira les déjeuners dès 8h00. Le site sera ouvert dès 8h00 le samedi matin et fermera vers 16h00 le dimanche après-midi.

Informations:

Les Faucheurs de Marguerites du Québec
540 Chemin des Pieds Légers, Stoke, Québec J0B 3G0

Téléphone: (819) 878-3998

HYPERLINK

"mailto:lesfaucheurs@hotmail.com" lesfaucheurs@hotmail.com

HYPERLINK "http://www.lesfaucheurs.com" www.lesfaucheurs.com

Note: Camping et restaurant sur place

Réservations d'hôtel, contactez Tourisme Sherbrooke 1 800 561 8331

Pour obtenir l'information complète au sujet de notre événement ainsi que les coordonnées de l'aéroport, visitez notre site Web au : HYPERLINK <http://www.lesfaucheurs.com> www.lesfaucheurs.com

Bienvenue à tous et à toutes.



we will sell it for you.

The week-end admittance is FREE for all pilots and passengers landing at the airport.

For the second year, all pilots that land and register their aircraft before 10:00 am on Saturday or Sunday morning will get a ticket for a FREE BREAKFAST when they register. This is our way to thank them for making our Fly-In a success.

You are invited to our Faucheurs Special Dinner at the airport's restaurant on Saturday evening, to be followed by a musical/ dance evening.

For the general public arriving by ground, admittance is \$5.00 and free for children under 16. Airport and restaurant open at 8:00 am each day and close on Sunday is at 16:00 hrs.

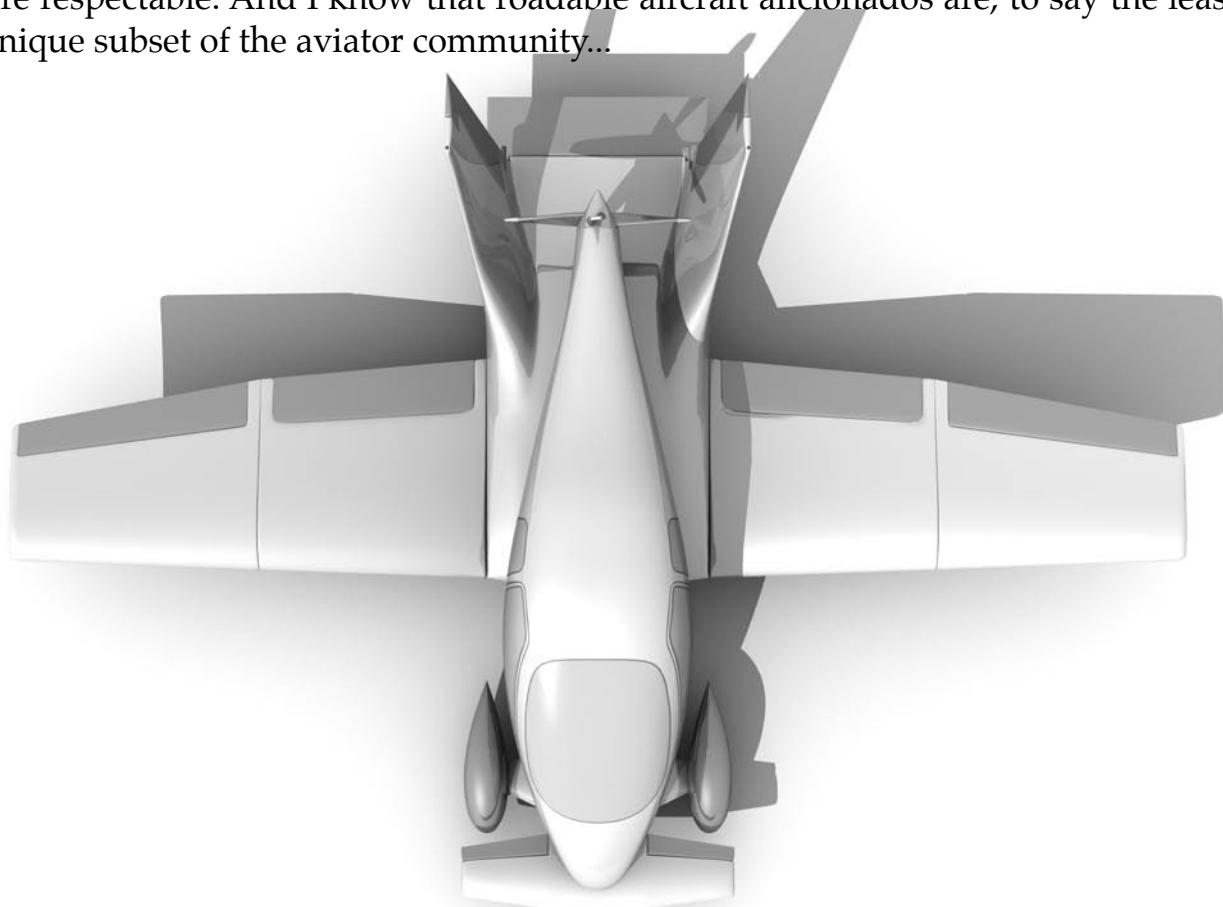
We hope to see you, your friends and relatives at this friendly celebration presented by Les Faucheurs de Marguerites in collaboration with Aéropro and the City of Sherbrooke.

Welcome to all!

Sherbrooke Airport directions: 112 Road to East-Angus.



I want a flying car. “Roadable aircraft” if you prefer; it sounds a little more respectable. And I know that roadable aircraft aficionados are, to say the least, a unique subset of the aviator community...



A NEW COMPANY, TERRAFUGIA (<http://www.terrafugia.com/>) hopes to change that. Under the direction of Carl Dietrich of MIT, this young company hopes to produce a fly-away roadable aircraft complete with push-button transition between modes. The hoped for goal is a prototype by 2008, a production version a year after that.

Aeronautics and Astronautics and two are in the MIT Sloan MBA program. And they're pilots (read: Our Kind Of People). These sound like folks who are in a position to do something about it.

Robert Fulton's Airphibian was the first practical *certified* roadable, but you had to leave the airplane part

A few years back I wrote an article about roadable aircraft, their history and the imperatives that would drive the development of such a machine. Things really are different than they were in the 1960's, and there have been further developments recently:

Last June HITS (Highway In The Sky) technology got a tryout in Danville, Virginia. Created as a part of NASA's Small Aircraft Transportation system, this is considered a key element in the effort to make light

aircraft more practical. It has huge potential to change the dynamic not so much for sport flying as the use of light aircraft for real-world transportation.

And then there's the Sport Pilot rating in the States, and in Canada the equivalent Recreational Pilot's permit.

Introducing the Transition

By George Gregory

Illustrations courtesy Terrafugia

artist Benjamin Schweighart

Three of the principals in this company are grads of MIT with degrees in

at the airport, so its utility as a cross country aircraft wasn't any better than that of a conventional airplane. Molt Taylor was more successful, but his design still wasn't convenient enough to be practical. You had to trailer the wings around and conversion was not that quick or easy.



Mention flying cars and everyone envisages mass carnage as hordes of yahoos rain doom upon unsuspecting groundlings

These ratings make a day VFR rating easier and simpler to obtain provided the weight, speed and complexity restrictions are met (and they are not onerous by light aircraft standards).

Roads are expensive, but GPS is already in place. Airplanes don't need roads, and the small airports are all over North America withering on the vine. Why not use them? Langley airport is only 10 minutes from my door, but YVR is an honest 45 minutes, to say nothing of the hassles of finding parking, checking baggage, showing up an hour before your flight, etc. All this for a ride in a commuter to the Interior or Victoria? And someone *still* has to meet me at the airport.

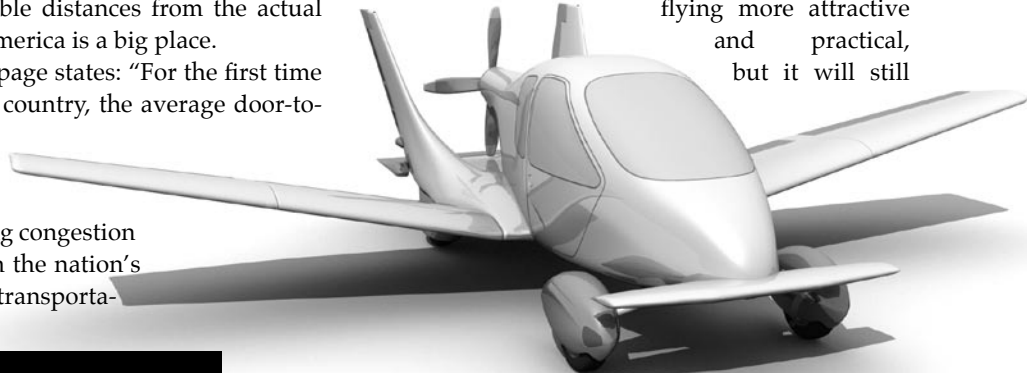
Finally, the conventional air transportation network is full. It's labour and manpower intensive, highly regulated and restrictive. Because it is big and expensive, it is limited to larger urban centres, sometimes considerable distances from the actual destination. North America is a big place.

Terrafugia's web page states: "For the first time in the history of this country, the average door-to-door travel speed is decreasing. This diminished mobility is a result of increasing congestion on the ground and in the nation's commercial airline transporta-

tion system. In addition, the recently instituted Light Sport Aircraft rating will make it easier than ever to take to the air in a Transition. Finally, many public-use general aviation airports are closing down around the country. These wonderful public resources are being lost at an unprecedented rate".

The Terrafugia team seems to have defined their market as well. Planning to take advantage of the new Sport Pilot rules, the Transition's GTOW is just a tad over 1300 lbs with a cruise of 120 mph, and is a two place machine. It is hoped that an easier-to-obtain rating combined with a practical two-place roadable aircraft may have a significant enough constituency to make the Transition economically feasible.

And it is to be a pilot's machine. These people have no visions of Jetsons flitting about; this is something intended to make flying more attractive and practical, but it will still



Transition

Preliminary Specs

- GTOW: 1320 lbs.
- Max Payload: 430 lbs.
- Fuel Capacity: 20 gallons (120 pounds)
- Engine: ~100 hp (final engine selection will be conducted as part of a competitive bid process, performance numbers below are for an assumed maximum 100 BHP engine fuel consumption is based on Rotax 912 ULS)
- Vs = 50 mph

- V1 = 70 mph
- Vh = 135 mph
- Fuel Consumption (75% power): 4 GPH
- Cruise Speed (75% power): 120 mph
- Gas Mileage: 30mpg (air), 40mpg (hwy), 30mpg (city)
- Max Wingspan = 325 in (27 ft)
- Max Length = 225 in (18.75 ft)
- Max Height = 80 in (6.75 ft)
- Width when folded up = 80 in (6.75 ft)
- Minimum Takeoff Distance ~ 1500 feet
- Fuel: Super-unleaded/100LL



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1996 Murphy Rebel - We are currently repairing a 1996 Murphy Rebel that suffered minor fuselage damage in an overspeed water arrival, that the floats were nice enough to absorb the majority of the damage (no inversion in the water!) Aircraft will be complete and ready to go on wheels this spring. Airframe total time 306 hours. O-320-E2D x 150HP with just 306 hours SMOH. Full gyro panel, Flightcom 403 intercom, VAL 760 radio, EIS digital engine monitor, full tweed/leather interior, moulded headliner, remote Airwolf filter, lightweight starter & all the other bells and whistles! Asking price is \$75,000Cdn

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require a pilot's license to fly. Mention flying cars and everyone envisages mass carnage as hordes of yahoos rain doom upon unsuspecting groundlings; but the skies are not going to be darkened by these sorts of machines. If they can demonstrate increased utility for aircraft, it would perhaps slow or halt the attrition that is reducing our ranks. We have to face it: aircraft are not generally practical transportation. You fly a light aircraft only if you can afford to be late. Perhaps with

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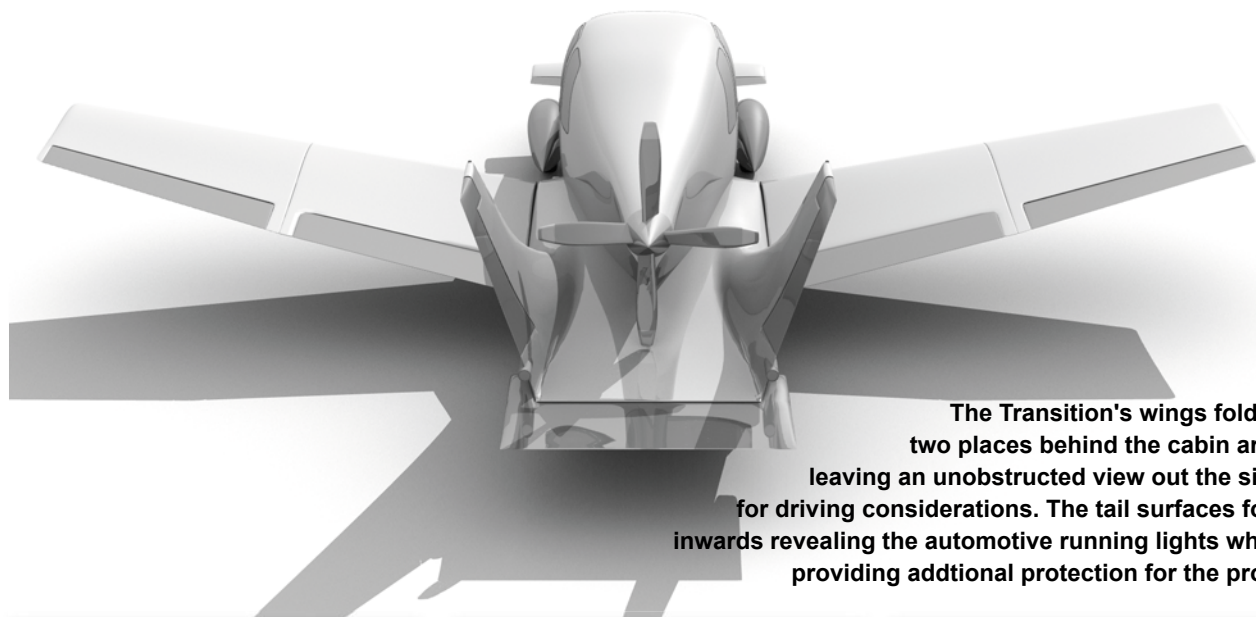
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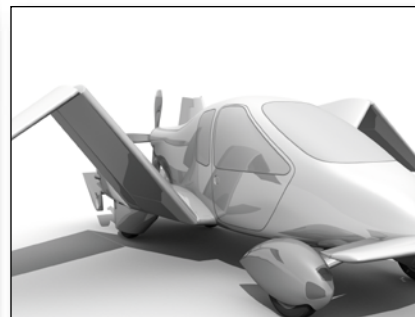
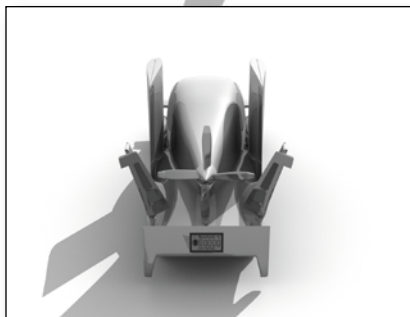
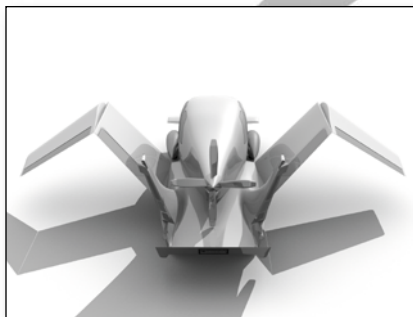
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The Transition's wings fold in two places behind the cabin area leaving an unobstructed view out the side for driving considerations. The tail surfaces fold inwards revealing the automotive running lights while providing additional protection for the prop.



something like this VFR aircraft will become practical.

Detailed design work is in progress for a wing folding and locking mechanism suitable for this application. And yes, discussions are ongoing with BRS concerning the use of a ballistic parachute for the entire vehicle - I would imagine a must-have for a vehicle with regularly deployed wings.

They seem to have a reachable goal: they're not going for VTOL, but a relatively simple, light design that uses conventional airports (not the highways!) at the terminus of each flight. It's just that you then get to drive it to the doorstep.

Still, the engineering challenges can be daunting:

- Can the wing folding mechanism

be made reliable and robust enough to handle repeated deployments and remain safe? Will the flying surfaces be liable to dings in the parking lot? Will the mechanism be protected from road grime?

- Can it be built light enough to make a practical aircraft (especially under Light Sport Aircraft rules) and still be a *safe* car?

- How about weight transfer between modes? Is there enough weight on the front wheels for safe driving?

- What about insurance?

- How about Federal automobile certification standards? Terrafugia claims patented technology that will allow aerodynamic bumpers to absorb at 2.5 mph impact. The leading edge of the canard and the elevator will be

fitted with this safety feature to allow low speed collisions with no damage to the vehicle. At higher impact speeds, damage will be visible. The propeller is protected by flying surfaces, and there are air bags, seat belts, a safety cage and crumple zone.

Terrafugia does not intend to do an end run around any safety-oriented regulations and will work with the NHTSA as well as the FAA to meet their requirements. Today's modern materials will make this more feasible than it was for Molt Taylor's Aerocar, but they admit it's still a significant engineering challenge to do this and meet the Light Sport Aircraft weight requirement of 1320 lbs GTOW.

I wish them success, and I'm going to follow their efforts with great interest. I'll keep you posted. *RAA*

Over the Horizon, Part 2

Canada is a great place to fly. The scenery can be spectacular, and there are enough airports and facilities to make a cross country trip just about anywhere in Canada a practical journey in a light airplane. Our regulations are strict, but manageable. In general Canadian aviation is alive and well. But south of us lies a county that is the most aviation-friendly in the world, with marvelous scenery and a tremendous number of interesting destinations. Not only that, but the ability to detour through the U.S. opens up new route possibilities for traveling between Canadian destinations. This flexibility can be a handy option when a weather system is blocking the only practical domestic route.

by Curt Reimer



Mark Munzel

Crossing the Line

Crossing the border is an aspect of cross country flying that a lot of pilots find rather daunting at first, and I was no exception. There are a number of rules and procedures to follow and screwing them up can get you in trouble. But it really isn't that complicated. All of the officials I have met have been polite and reasonable. It only takes a couple of crossings to learn the system and get into the swing of things.

I'm going to have to throw a disclaimer in here. The rules governing the passage of private aircraft between the U.S. and Canada are subject to change at any time. I can only describe the processes that I have followed over the past few years, and they may have changed by the time you read this. If you are planning on flying your aircraft to the United States, by all means read the latest version of the Border Crossing Guide put out by COPA. This is available free online to COPA members at [HYPERLINK "http://www.copanational.org"](http://www.copanational.org) www.copanational.org. The guide is kept fairly up to date on these matters. In all cases, heed any advice and directions given to you by Canadian and U.S. FSS, the U.S. Homeland Security (who run the U.S. borders now), and Canada Customs service. If you keep these guys happy by following their directions, you'll do fine.

The COPA border crossing guide is quite detailed on procedures, but I'll touch on the main activities involved here. You will need to file an international flight plan with our local Canadian FIC. While it is common for pilots of light aircraft to pick a destination airport at or just over the U.S. border, it isn't legally required. You can fly from anywhere in Canada all the way to your final destination, as long as it is a designated airport of entry. The danger with flying too far inland before clearing customs is that you are expected to arrive at the destination airport very close to your filed ETA. The longer your over-the-border leg, the more difficult it will be to adhere to your designated ETA in case of headwinds or other delays. If you

have any serious weather or mechanical difficulties, you can't legally put down at any other airport except for your destination. Compounding the problem is that the FIC in Canada, or FSS in the U.S., no longer sends notification of your planned flight to the customs officials at the destination airport. The American FSS may try to update customs for you if you amend your ETA enroute, but the Canadian FIC will not. The pilot in command is responsible to call the specific customs office he wishes to land at and provide the trip details to the duty officer over the phone. This must be done at least one hour in advance of your arrival. (you will need to give two hours notice when coming back to Canada, though I have never had a problem with only an hour's notice)

The U.S. officials allow you a mere +/- 15 minutes from your stated ETA before they start getting edgy. If you are outside this limit, they can legally fine you, and the fine is in the thousands of dollars. Unfortunately, few of the customs offices have aircraft radios (though Pine Creek does). So by keeping the border crossing leg short, and landing near or at the border, you will minimize the potential

error in your ETA due to unanticipated delays. Plan the flight with precision of a military mission, and allow plenty of extra time. It's far easier to hold on the ground for a half an hour, or throttle back a bit, than it is to try and make up 15 minutes on a 60 minute flight because you departed behind schedule.

When you phone U.S. customs they will want to know your aircraft type and ID, the aircraft colour, pilot's name, and will probably ask you if you have a decal. You can either pay \$25 for a service charge every time you cross the border, or for the same \$25 you can purchase a small decal with a serial number that goes on the outside of your airplane. It is good for one calendar year. If you have a decal, write down the serial number and carry it in your wallet so you can give it to the customs official when he asks for it. The customs office doesn't always have these in stock – ask them when you call.

After the these preliminaries are squared away, take a moment before firing up and make sure you have the required paperwork. Again, the COPA guide is the proper reference for what to take. In general you will

need the same aircraft documentation as you normally would for domestic flying. If you are flying a homebuilt you will need a copy of the "letter of authorization", available free from the EAA, RAA and other aviation websites. Also be sure to have your driver's licence, pilot's licence and a Passport for good measure.

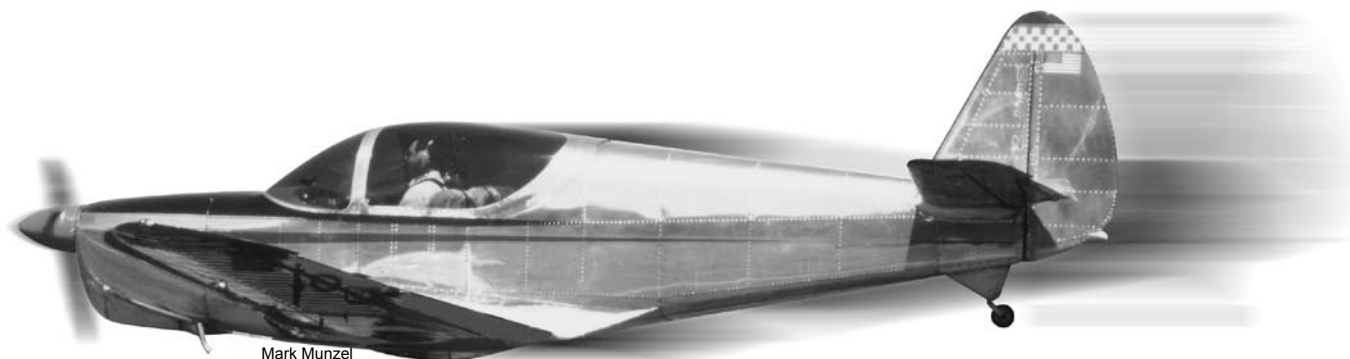
Once you're airborne, check with FIC that your flight plan is open. Don't depend on them to do an auto open on an international flight. I'm sure there must be simple rules as to when FIC auto opens your flight plan and when they don't but I haven't figured them out yet. On an international flight it is best to double check by calling them after takeoff. The U.S. authorities will be unimpressed if you don't have an active flight plan, and may even deny you entry into their airspace.

As you approach the U.S. border, you need to contact U.S. Air Traffic Control and inform them of your intentions. This is mandatory. You should tell them where you are presently located, your altitude and intentions, and request a squawk code for border crossing.

You have to be under surveillance by an actual Air Traffic Control facility. Talking to the FSS is not adequate. Usually that means you should talk to the Center or the local Approach controller if the border crossing is near a major airport. If you are headed south from Winnipeg to Pine Creek or Fargo, it will be Minneapolis Center

Continues

In general it seems the U.S. customs are mostly interested in who you are and the Canadian customs are more interested in what kind of undeclared swag you might be bringing back



Over the Horizon / continued

that you will call. To find the right ATC frequency, grab your little green U.S. facility Guide (highly recommended) and look up the nearest U.S. airport across the border along your route. If it has an IFR approach, and most of them do, it will list the appropriate Center or Approach frequency for the area.

After skillfully arriving at the customs airport as close as possible to the time specified in your flight plan, taxi to the designated rendezvous spot and wait patiently in your airplane for the customs official. Note that you should have asked the customs official over the phone where the appropriate rendezvous spot is for that airport. At Pine Creek it's simple enough – park on the south ramp if you are southbound and park on the north Canadian ramp if you are northbound. But in Fargo, for example, the convention is to park and wait for customs at the jet center FBO. The customs official will drive there to meet you with his truck, even though the customs office has its own apron elsewhere on the airport. I certainly appreciate this gesture, but if you are going there, ask the customs official for directions when you call him. Things may have changed.

Once you shut down, the customs officer will usually invite you to follow him inside to do the paperwork. If you have all your paperwork in order, it only takes about 10 minutes to fill in the forms and be on your way. All the customs officials I have encountered have been professional and cordial. They might poke around the baggage compartment a bit, but personally I'm glad they do. That's their job.

Don't forget to close your flight plan!

Coming back into Canada is even easier, but different. In general it seems the U.S. customs are mostly interested in who you are and the Canadian customs are more interested in what kind of undeclared swag you might be bringing back. I don't think airplanes and cars are treated any differently in that respect.

To fly back to Canada, you again need to file a flight plan, this time with the local U.S. FSS. Interestingly, these guys NEVER auto open your flight plan, which can be a bit of an issue in remote areas where FSS coverage at low altitudes is spotty. Occasionally, the only local communications option is to tune in the FSS transmissions on the nearest VOR frequency (if you can) because apparently the FAA couldn't afford to put a proper transmitter in that location. This is an amazing thing when you consider how lavish U.S. aeronautical facilities are in general.

Before departing for Canada, you are also responsible to call Canada Customs yourself and give them your particulars, including your destination and your ETA. Canada Customs has a single convenient 1-888-CANPASS number to call in all situations. You call them to notify them of your flight and ETA, and you call them again on the ground

when you arrive at the destination Canadian airport.

Enroute to Canada, you must again call U.S. ATC prior to crossing the border outbound, and get a transponder code. Sometimes this requirement can be a bit silly. I was entering the U.S. from Canada a couple of years ago, and flying into Port Huron, Michigan, just across the river from Sarnia. I called ATC about 10 miles from the border and the conversation went something like this (with no pauses between transmissions):

Me: "XXX Approach, experimental Canadian GACR, 10 east of Port Huron, inbound, level 4,500, request flight following for border crossing."

Approach: "Roger Canadian GACR, squawk 4573 and call airport in sight."

Me: "squawking 4573 and, uh, the airport is in sight" (as it had been throughout the conversation)

Approach: "Roger squawk 1200 cleared enroute, good day."

Well, at least the American ATC services are free. Note that for VFR flights there is no current requirement to talk to Canadian ATC either inbound or outbound, unless you are already in controlled airspace.

After your arrival at the airport of entry, and the phone call to 1-888-CANPASS, Canada Customs may send a customs official to greet you and inspect your airplane and documents. Or they may not. If they aren't going to come they will give you a report number over the phone and you're free to go.

It is still your duty to find and fill out the appropriate forms and mail in a cheque for any tax or duty owing on your declared purchases. Please do follow the rules. We have a great and convenient system for general aviation border crossing in this country, obviously because pilots are deemed to be good and trustworthy citizens. Let's maintain that reputation.

And remember to close that flight plan!

Airborne in the U.S.A.

In my mind, whatever restrictions the Americans have imposed on their pilots in the way of complex airspace, and TFRs, they make up for in the quality of their sectional charts and the incredible freedom and vitality of American aviation in general. Once you learn to read and understand their charts and rules, flying in the U.S. is no more difficult than flying in Canada, and in some ways less restrictive.

For anyone who thinks that all U.S. airspace resembles the complex mess of Southern California, here is a fact: Fewer than 10% of the public airports in the U.S. have an operating control tower with a control zone. In most cases that zone extends for five miles out and for 3000 feet AGL. Only the bigger cities have any additional controlled

Continued on page 35



WINNIPEG AREA RAA

Imagine yourself in this situation.

It's mid-winter and you and your passenger are flying over a remote area where the temperature on the ground is 30 below zero. It could be an engine problem or bad weather and while making a forced landing you nose over in the deep snow. There are no injuries but reality sets in and you stare at each other, wondering how you can survive a night or two in these temperatures.

If you had attended this chapter's Winter Survival Course that took place on three consecutive weekends, learning about survival gear, building igloos and sleeping in them in temperatures that ranged from a crisp minus 30 to a rainy plus 2, you would know what to do. The instructors, both from the University of Manitoba, were Dr. Jill Oakes, a past president of the Winnipeg RAA Chapter, and Dr. Rick Riew, whose extensive practical

winter survival experience includes living with the Innu and studying how they dress and survive while travelling in Northern Canada's most severe weather. Riew is not an RAA member but we're told he is a "keen passenger" in his wife's aircraft. In his research he said the Inuit have found animal hides have proved to provide better protection against the extreme cold than man-made materials, and igloos, domed structures built of carved blocks of snow (see photos) are still the best temporary shelters while on the trail.

In all 45 people including one from California, slept in igloos over three weekends. On the first weekend 17 people managed to build igloos on the ice near the University of Manitoba's Delta Marsh Field Station, north of Portage La Prairie, despite the temperature dipping to minus 30. When they awoke the next morning it was plus 2



Top: Teamwork at winter survival course speeds up igloo construction. Photo by Jim Bell.

Right, participants show that winter survival isn't ALL hard work. Astrid Vik Stronen photos.

and raining. On the second weekend 38 people attended at the same location, building their igloos as the temperature hovered at about 15 below with a wind chill of minus 25 and dropping overnight. On the third weekend about 30 people participated at the Lyncrest Airport session. CASARA did a mock search and rescue on the first weekend and Gerry Roehr of CASARA give a slide show on the third weekend.

RAA TORONTO REGION

Earl Trimble noted in the chapter newsletter's president's message that "not long ago" the Bald Eagles, the chapter's "older retired gentlemen" who met every Wednesday at the old clubhouse and would fly out to lunch, would seem to overwhelm the cook when they arrived at the designated airport restaurant. And "not long ago" they all had pilot's licenses and the Wednesday Eagle flight would include 20 airplanes, most of them carrying a passenger. Now, as the Eagles are grounded by loss of licenses or aches and pain when the weather is bad, the numbers sometimes dwindle to where you can "count them on one hand," Trimble said.

That brought him to a recent Wednesday, a nice day when 15 arrived at the chapter's new clubhouse and the discussion turned to replacing the photos of these old timers' scratch built planes, lost when the old clubhouse burned. He began taking names of those builders and by the time they had circled the room Trimble realized the list had grown to an impressive 97 planes. That started him wondering if chapters across Canada could

document all the scratch built planes of their members - an endeavour that would "prove the merits of the homebuilt recreational (aviation) movement and the overall value of RAA." He'd like to see it happen.

RAA VANCOUVER

It was booked as a visit to check out member Chris Cox's RV-7 project but it must have been quite a party, otherwise why did five police cruisers block off the street and descend on the Cox home? We've seen the picture to prove it. Actually Editor Joan Cox doesn't explain the police presence in their newsletter, the Turn & Bank, but the "visit" was a success with about 50 people crowding into the Cox's single car garage.

They checked out every detail of the RV's fuselage and tail section, offering good ideas and suggestions, Chris Cox said, and Vern Little spotted a soldering problem and took time out to repair it.

LONDON - ST. THOMAS CHAPTER

As most chapters have at one time or another considered having a chapter plane or setting up a club of chapter members to own a plane which would provide an opportunity for those who are building to keep current until their project is complete, there are probably quite a few RAA members across Canada waiting to see how this chapter makes out with the "Skyhopper Project." A club made up of chapter members has been set up to operate



Chris Cox



Rob Prior

the two-seat homebuilt Skyhopper donated by Al Aris last fall. It has been in storage for several years and is now in Gary Bishop's shop being restored to flying condition by chapter members. It is expected to take to the air sometime this spring. (Correction - In the last issue we incorrectly identified Gary Bishop as the donor of the aircraft.) Howard Quafe, the original builder, attended a recent chapter meeting at Bishop's shop where the Skyhopper is being repaired and answered questions about its construction and some of the modifications. Denny Knott, the RAA's Ontario S/W Regional Director

Contributions to our Chapter Activities section are encouraged. Keep your fellow members updated on what is happening across Canada! Send your reports and newsletters to :

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Member's Toll Free line: 1-800-387-1028

email: raac@inforamp.net

Top, the Delta Police were on hand during the project visit. Must have been quite a party!

Bottom, Jim Hunter, Bruce Prior, Tony Swain check out Chris' handiwork.

and chairman of the Skyhopper Project, and others who are working on the project, outlined the progress that has been made – solving wiring problems, installing new fuel tank finger screens, fine tuning the landing gear, checking the fuel system and the internal condition of the wings. Still on the wish list is a reasonably priced 80 to 90 h.p. engine with electric start and an accelerator pump on the carburetor.

Chapter President Angus McKenzie, a crop duster pilot, has offered to assist with flight testing once work on the plane is completed. That leaves one big question – how much will it cost to rent it. Knott reported that with 12 flying members in the club he estimates the rental rate at between \$60 and \$70 per hour.

RAA SCARBOROUGH/MARKHAM

Speaker Brian Kenny, a senior advisor on fuel quality for Petro Canada and a long time Pietenpol pilot/owner was brought to a chapter meeting to tell members about the dangers associated with using fuel containing ethanol in airplanes. Ethanol is a strong solvent that damages the hoses, gaskets and other parts on some aircraft engines, he said. He urged pilots to make a simple test for ethanol, adding fuel to a clear tube containing water and shaking the mixture. As water dissolves in alcohol the water level appears to increase if alcohol is present. In most areas of Canada Mogas pumps are supposed to have a notice declaring the ethanol content but many don't have them. He said Petro-Canada Premium 91 octane fuel should not contain ethanol now or in the foreseeable future.



Don Dutton

NIAGARA REGION RAA

A day-long Transport Canada Aviation Safety Seminar on January 28, organized by this chapter, drew more than 35 pilots (*above*) from the Oshawa, Hamilton and Niagara regions. Most were RAA and COPA members. Topics were Maintenance Requirements for General Aviation and Your Role in Safety Management with Safety Inspector Jim Nyhuus conducting the morning session and Senior Safety

Inspector Wayne Juniper taking over for the afternoon. The inspectors stressed that pilots must accept more responsibility for general aviation safety in the future if they are to maintain the freedom they now enjoy. General aviation pilots should strive for the same professionalism as the captain of a jet transport, reading aviation training books and magazines and watching videos, discussing safety with experienced pilots and maintaining their competency by having a periodic flight check with a flight instructor, the pilots were told.

RAA Ottawa

While in Ottawa for the March round of Transport meetings, RAA president Gary Wolf was invited to the RAA Ottawa chapter meeting at which David Stroud spoke about his new project, the restoration of a Fairchild 51. Below, Chapter President Bill Reed, Harvey Rule, and Michel Tondreau opened the meeting and discussed their upcoming Kars and Planes fly-in and show.



David Stroud and Bill Reed show some of the original drawings for the Fairchild. Just showing on the left is one of the wingribs that David has reproduced, with a Gottingen airfoil and a seven foot chord

Not all rebuild projects are planned. The reconstruction of Jezabelle began in 1998, when Fred Hawkins and Jerry DeGroot were landing to refuel in Michigan City Indiana, enroute to Oshkosh. The little '47 Cessna 140 groundlooped, and landed up in a drainage ditch. Clambering out to see if there was any damage, Fred and Jerry were horrified to find that the aluminum tailcone was a wrinkled, twisted mess, and the left stab and elevator were all bent. Further inspection revealed the cause - the tailwheel bracket had fractured and bent around, causing the groundloop.



The pilot was exonerated but there was the small matter of the plane having been wrecked. The two intrepid aviators dismantled Jezabelle and loaded her up into a truck to make the long drive home. On the way they debated the various options available to them for repair of this sweet little plane. They considered the Owner Maintenance category but felt that it was too limiting. Rebuilding to certified standards might have worked because Jerry is an AME, but they wanted to do some improvements. The cost of the STC's was higher than the price of going through the MD-RA amateur-built inspection. When they got home the options were presented to Buzz Steeves, the third partner in Jezabelle. Buzz is an expert metalworker and decided that amateur-built would be the best way to end up with an improved Jezabelle, because

the three partners could do a spars-out rebuild. They opened a file with MD-RA, went through a 51% evaluation and they were on their way.

The boys decided to start with the twisted metal fuselage, figuring that if they could rebuild it, the rest would be a cakewalk. In the early years of 140 production the fuselages were "coachbuilt" so there would be little opportunity to buy used parts for rebuilding. The partners drilled out every one of the 4800 rivets and ended up with a pile of misshapen aluminum. Almost every panel would have to be newly made. Buzz applied his patented cowboy boot technique to the panels, followed with rubber and leather mallets, until he had a complete set of flat patterns to be used for reproduction. Even the bulkheads would have to be reproduced, using the old ones as templates. They got

Reborn

Buzz Steeves' C-140 "Jezabelle"
Pictures and story by Gary Wolf



to keep a few of the original fuselage pieces, but just the firewall, the doorposts, and the landing gear box. Buzz made and formed all new panels and bulheads, but then became ill and ended up in the hospital. About this time Jerry took a job in England so he was able to provide only occasional help. Fred ended up doing much of the assembly of the fuselage. He was able to reuse the original vertical fin and rudder and some of the right hand stab and elevator. A new-used left hand elevator was purchased, but the left hand stab was still a mess. When Buzz got out of hospital he gently massaged the left stab back to perfection, made stronger root ribs, and new thicker skins to correct the common stabilizer cracking problems of the 140. On the walkaround it is suggested to wiggle the stab tips up and down to hear if there is any oilcanning that would suggest cracks in the root ribs. On Jezabelle the root parts were made longer so the skins would be doubled in this high stress area, and extra

rows of rivets could be used to transfer the flight loads to the spars. With the metalwork complete the fellows embarked on the next phase of the project.

On To The Wings

The wings were stripped and found to be in pretty good shape for a fifty-five year

Above Left, The restoration of the panel is tastefully colour-matched.

Above, right: The cause of the restoration, when the original rear bracket fractured.

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Buzz's longterm project, a Zenith with many of his own mods

old bird. All fittings were cleaned and refinished and new Ceconite with Randolph was used for the covering process. Buzz is a master painter and applied and sanded the silver, and then fourteen coats of Randolph to get his flawless finish. Buzz has some strong preferences in painting. He has tried the new HVLP guns but returned to his trusty DeVilbiss. He found that the HVLP raised the temperature of the paint and could not provide a consistent spray pattern. For the fuselage and tail feathers Buzz preps with an Alumaprep etch and Scotchbrite pads. He follows this with Dupont light

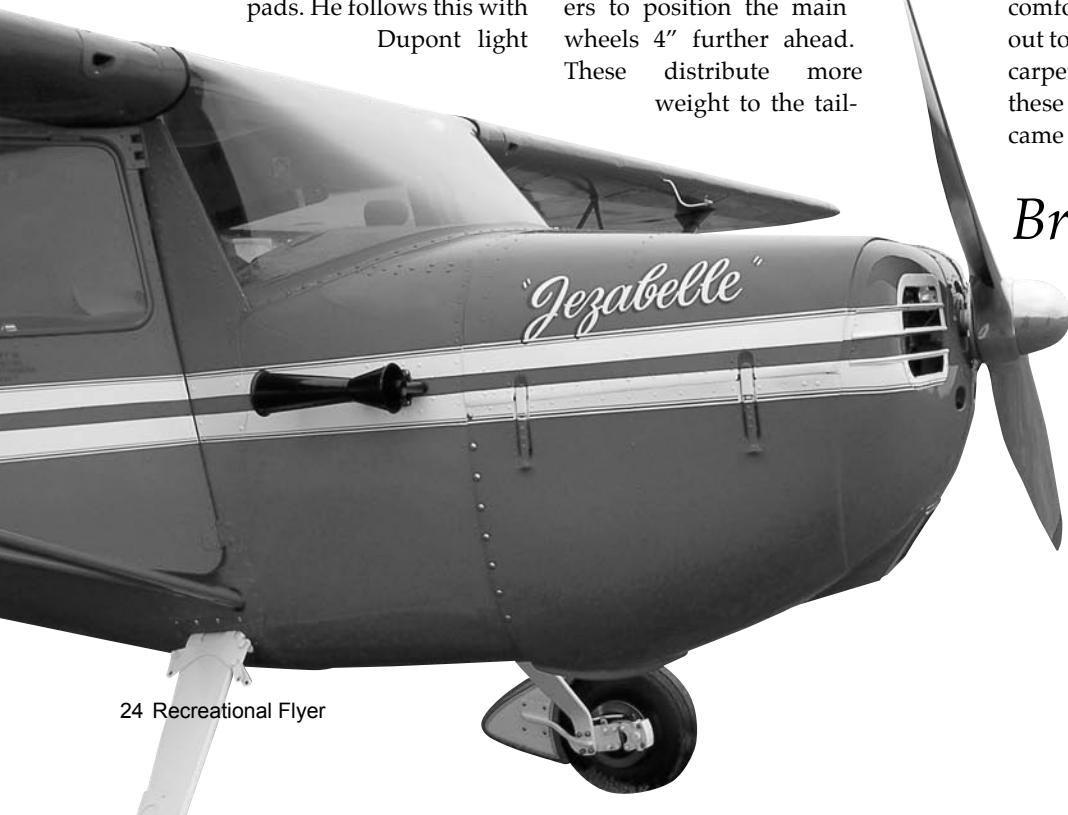
grey epoxy primer and flashes all the seams, edges, and rivet lines first. This is followed by a light tack coat and then a flowing finish coat. If you are ever at a fly-in where Jezabelle is on display, have a close look at the flawless Imron paint on Jezabelle's fuselage.

Improvements

There were a few improvements to be made to the airframe. First on the list was to install a set of Cessna gear leg extenders to position the main wheels 4" further ahead. These distribute more weight to the tail-

wheel for a more positive feel, and lessen the chance of a noseover under heavy braking available from the new Cleveland brakes. Buzz carved wheel-pants from foam, covered them with a thin layer of glass, and then dug out the foam. Jezabell spends most of her time on grasses, so these half-pants are a good compromise between speed and rough field capability.

The old C-85 engine was sold, and a zero time O-200 was bought from Leavens. The seats were stripped of their old horsehair and down to the bare frames. Buzz carved foam to a comfortable shape and sent the seats out to an upholstery shop. He cut new carpet material to fit the floor and sent these pieces out for edging. The panel came in for some major rework. Out



*Bruce's comment
on landing
was "What a
sweethheart,
don't touch
a thing.
She's perfect"*



Left: Buzz points to where the cracks usually begin. Note the three rows of rivets to catch the wider internal doubler. Below, The stabilizer leading edge was a crumpled mess, but Buzz made it smooth again

went the old ten pound ADF and the eight pound Narco. In went a new Icom at 2.2 pounds. The remaining instru-

plane off. Bruce Paylor of Guelph is the owner of an original Cessna 140 so he offered to do the first flight. Buzz felt

Occasionally life throws **a curve ball**

ments were either rebuilt or replaced with new units. Fred made a new white centre panel on the computer, and covered it with a clear plastic cover plate. Buzz made metal placards and had them engraved. The panel was painted with spray cans to match the interior colour, and to provide a less shiny surface. Unlike many restorations, the interior in Jezeabelle resulted in a net weight saving. Those old radios and upholstery weight more than one might think.

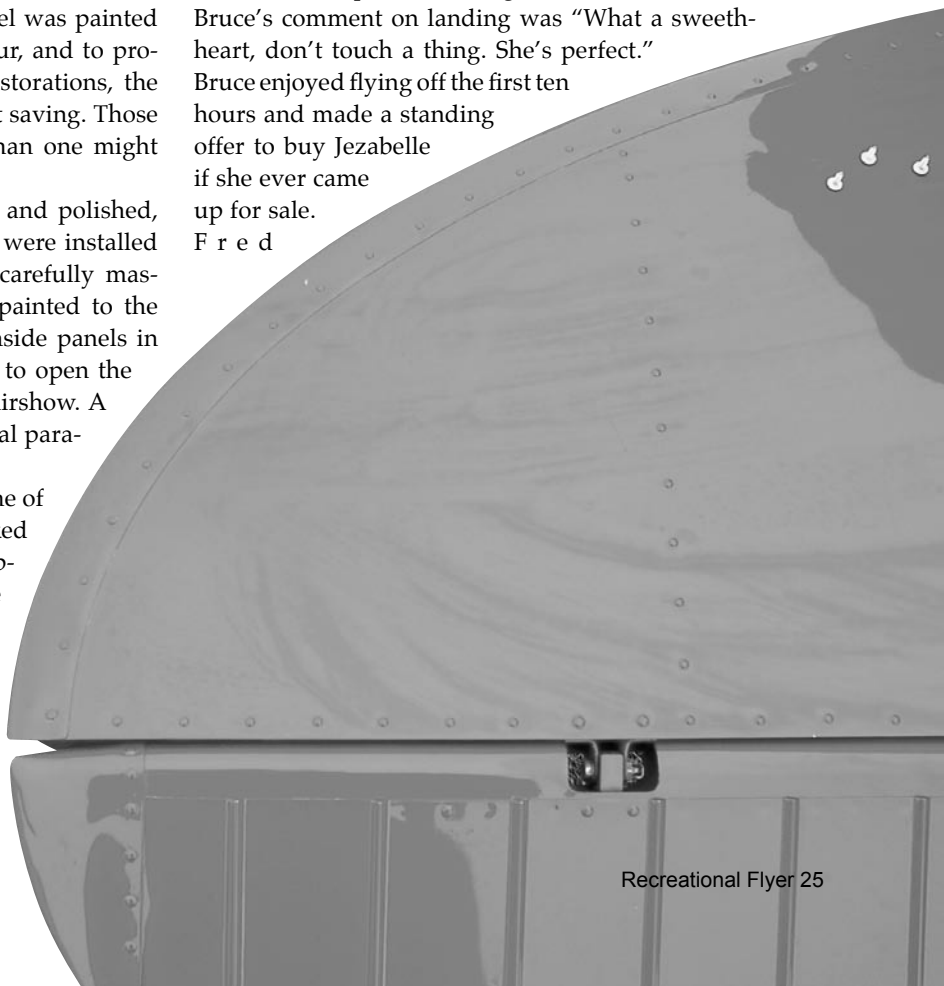
The engine compartment was detailed and polished, and all new baffles, wiring, and plumbing were installed and properly routed. The cowlings were carefully massaged to better than new condition, and painted to the same standard as the fuselage, with the inside panels in white to reflect heat. Buzz is not ashamed to open the cowls when the plane is on display at an airshow. A look at the photos will say more than several paragraphs.

Occasionally life throws a curve ball. One of these was meant for Buzz, who was whisked off to the hospital in the middle of his chapter fly-in one Saturday. He had been on the waiting list for a new heart, got the call on his cell phone, and was off to Toronto for an operation and a period of convalescence. The final assembly chores fell to Fred Hawkins and Jerry DeGroot, and when these were completed, Marty Swartz did the MD-RA inspection and signed the

that Transport might have taken a dim view of himself flying the plane before he got his medical signed off from the heart transplant. First flight was on June 17 2003, and Bruce's comment on landing was "What a sweetheart, don't touch a thing. She's perfect."

Bruce enjoyed flying off the first ten hours and made a standing offer to buy Jezeabelle if she ever came up for sale.

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Hawkins flew the next 30 hours, but these were to be his last. He passed away quietly one day in October. Buzz and his son Ed flew to Oshkosh the next summer, an uneventful trip this time. Jezabelle still has her original C-85 prop and with the O-200 it acts like a climb prop. Cruise is 105 mph at 2500 rpms, with the engine consuming five US gph on a mix of 25% 100LL and 75% regular unleaded. The takeoff roll at full gross is 650-700 feet and rate of climb is 1100 fpm. Flown solo with half fuel the takeoff is well under 600 ft and the climb is 1800 fpm.

What It's All About

Now that Jezabelle has two summers on her, I asked Buzz how he feels about what the three partners had created. Buzz responded that it was not just the three owners who had built the plane. He owed a lot of thanks for help from the mem-

Continues



IN MEMORY OF
FRED T. HAWKINS

*Fly High with
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Top: The rear storage area is upholstered in lightweight materials and has space for a week's luggage
Centre: Sort of says it all.
Left: Wheel pants and extenders work well on grass strips

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Homade 183

Cont'd from page 9

are larger than Cessna and curved for esthetics. The skins for all control surfaces are also Homade using a home made press that produced a rounded stiffener for more strength and better looks. Wanting to do all the things I wanted to do with this plane and carry big loads the wing needed much thought. In the end I decided to beef up the 182 spars and extend them, build more ribs with more cord, make it a wet wing with added Homade auxiliary tanks for a total of 99 imp. gallons of fuel. The flaps and ailerons were made bigger than Cessna and Homade bell cranks were built and installed for flaperons. The flaperons are operated separately from the flaps so one can use either flaps or flaperons or both at any setting. The wing was also fitted with Homade VG's. and Homade drooped wing tips.

I rebuilt a Continental 0-470 using high compression pistons going for 260 HP turning a 90 inch constant speed prop for better float performance. Once the engine was put on the

Continues



Jezabelle Continued from page 27

bers of his RAA Flamboro chapter. Buzz reports that what he likes best about Jezabelle is the ease of maintenance on this simple aircraft, and the economy of operation. The 140 is lighter on the controls than a C-150 and will carry enough luggage for two people to travel for a week. The plane will slip with flaps, trims well for cross country work, and is a rudder airplane. Buzz cautions that a C-140 can be a bit of a handful on landing and requires a fully-trained pilot to keep ahead of the plane. Future plans include more trips to Oshkosh and to fly-ins all over Canada. I asked Buzz how Jezabelle got her name, thinking that it might have been from the old Johnny Rae song. Buzz replied that "the plane got called an awful lot of names during the reconstruction, and Jezabelle was the only one fit to paint on the side of an airplane".

RAA

Jezabelle's super-sanitary engine compartment. Buzz is not the least bit shy about opening the cowl when the plane is on display at an airshow



Homade 183 / continued

modified mount I then did the wiring, installed radio, audio panel and transponder and also amateur radio. The upholstery (sewn by a professional) was fitted then I did the painting using colors picked by my wife. The tail and wings went on easily, control cables connected and all was checked and made ready for final inspection. The final done, a few deficiencies taken care of, then the seemingly endless wait for the paper work.

The day finally came, my friend

and mentor Basil came to help out. We did a good walk around and a final controls check. It was a beautiful day for a test flight, sunny warm with a slight breeze straight down the runway. I did a couple of runs down the runway tail up then the moment of truth: the take off was strong straight and smooth. Only those who have built a plane can know the great feeling you get on this, the first flight. It is indescribable. It flew very well, just slightly left wing heavy and a bit of left yaw which was later corrected with the adjustment of eccentrics and a small tab. Basil and my wife watched from the ground as I flew. Their smiles were big enough to be seen from the air. A little slow flight and then descend, ready to set down. The landing was smooth and straight, it handled as nice on the ground as in the air. Subsequent flights proved a set of very nice flying characteristics. It won't stall even with full power; it simply

shudders and buffets as the nose sags a few degrees with the air speed at 0-5 mph indicated and the VSI at about 250 FPM, up still having crisp rudder and aileron control, and this was with 100 LBS in the baggage compartment. Cruise speed is 150 MPH, climb test was 1360 feet in 3 minutes at full gross of 3300 LBS for wheels and skis. It will be 3500 on floats.

It is quite rare that one makes all the right choices when designing and building anything, there must be a horseshoe in this plane somewhere as I have now flown it 47 HRS and have not found anything that should have been done differently. Everyone that has flown it has really liked the way it flies. So what is a HOMADE 183? Well, my definition is a plane that flies like a dream!

RAA

Postscript:

It is now Jan '06 and I am building wheel skis and rebuilding a pair of damaged 2790 EDO floats and plan to put a trim-able wing between them. Isn't experimenting and building and flying just the greatest?



Tiger Boys

I WAS ASKED TO WRITE about the fabric covering weekend workshop, so here I am thinking to my self: "How did I get my self in this adventure on a to trip to unknown lands? Leaving home and family, Friday morning, on the tail end of ice, rain, slippery roads and a seven hour trip"?

Michel Tondreau Reports on the RAA Fabric Seminar

Well, there *was* the damage to the tail end of my Lazair. I would have to find out how to fix to fly it, and then an event flyer on the national web site, a local RAA club member reminding me of event, and a friend inviting me to stay at his place for the weekend. The weather got better as I drove further from the Ottawa area. Traffic was *bad* in Toronto.

The materials I was to pick up at Leavens for the workshop were nearly not to be: at Leavens I met

closed doors - I had not realized they closed early on Fridays. Boy, was I worried. I reached Gary Wolf, who managed to reach Jeff Leavens, who in turn graciously came to meet me at Leavens store to hand me the supplies. Leavens was donating some of the materials for this seminar, and it was very good of Jeff to come back after closing time.

Well, I got to Cambridge late on Friday (after a few wrong turns despite detailed directions), but I did arrive in time to share a great supper, mussels in Portuguese style hot vegetable broth with Gary Wolf and two of his children who were home for the weekend. Needless to say we kept Gary up late. Next morning, after breakfast we were off to Guelph airport, home to the Tiger Boys workshop. As I approached the old not impressive hanger, I wondered how much time I would be sitting listening to theories and how much time I



Opposite: Left to right, Len Halley, Jim Zantinge, and instructor Bob Brunn examine the work at hand. Left, Gord Reed (l) and Michel Tondreau (r), with the Lazair tail

would actually get to do something for real. When I opened the door and stepped in, it was like stepping into a fairy tale, bigger than life. There were at least five real biplanes being worked on, some complete and some in parts, and all kinds of pieces of history. Airplane artifacts were on the walls, on the floor, and later I had the privilege of visiting two neighbouring hangers full of historical planes.

For now I wondered what we would have for a seminar. Well to my surprise, the Tiger Boys don't give lectures; it's drop your coats on a Tiger Moth wing or a Gypsy fuselage and come over to one of the work benches, all seven of us in the class. When I suggested that I had my Lazair tail feathers in my van and could use advice, I was told to bring them in for a look over. (Late Tuesday evening in the cold my son and I had dismantled the Lazair tail parts.) No sooner had I brought them

in than three other students and I were instructed on how to remove and prepare the parts for recovering. The other four students worked on Gypsy tail feathers that were ready for covering and then gave us a hand. There were always at least four Tiger Boys around us, often new faces popped in to assist, they never seemed to move quickly, sometime appearing to be frozen in time with ever so discrete smiles on their faces. They were like honey bees around a nest in full season; there was always one of them around to guide use, and it felt as if they could predict when we needed help but didn't dare ask or made mistakes we didn't realize. The first day we stripped and began recovering most of parts and even primed some of

There were at least five real biplanes being worked on, some complete and some in parts, and all kinds of pieces of history.



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The Tiger Boys Tom Dietrich (l) and Bob Revell (r) speak with Jim Zantinge (c) about taping

them. On Saturday evening the students and I were invited to a supper at Gary's home, it was in my eyes a supper with legends. The stories, the joy, the camaraderie, and the friendships were beyond description. The passion, the sheer love of planes and their restoration is overwhelming, as is their desire to keep the art alive by teaching others.

On second day we finished covering and priming, and then we shrink-tightened and put on the edging tapes and stiffeners. In the process we learned valuable lessons which could not have been learned from books. It was a lot of work, more than expected, and I was surprised that we managed to cover all the tail feathers.

Needless to say I was tired by the end of second day. I had achieved so much. My trophies were gently placed on the back seat of my van. Leaving was hard, it's the kind of place you don't want to leave. The spirit, the friendship, the warmth in that shop of miracles is hard to leave. You want to take part of it with you to keep forever.

Sunday I was invited to sleep at Gord Reed's home, an RAA member living in Guelph. His wife served home made chilli that was great and the walk around town was very nice. Monday I had the opportunity to view the vacuum forming equipment which would be demonstrated that evening at Waterloo club meeting. Though I had been invited and would have

liked to attend this meeting I was tiring, and was growing eager to see family. Snow flurries were predicted to be starting in Ottawa that evening, and I couldn't see myself driving in that through the night. It was a good choice to leave when I did: I got past Toronto before four o'clock traffic. I meet little traffic once off 401, the 115 and 15 back to Carp were very easy driving.

My only two regrets: leaving and not having brought my fourteen year old son with me. If you could have seen the gleam in his eyes when he saw the tail fins, it was as if his eyes were saying "you did that, now we can fix our plane ourselves". If I have the chance to go again I can only hope to bring my son with me to live the experience I did, to admire the living legends who really care about restoring historic aircraft. RAA

If I have the chance to go again I can only hope to bring my son with me to live the experience I did, to admire the living legends who really care about restoring historic aircraft.

Editor's note - The Tiger Boys are proposing to hold an advanced class on April 22-23. Contact garywolf@rogers.com to reserve a place.

Scratch Built Seats

I built these seats, mostly from 1/2 inch 4130 tubing. The webbing is 6061T6 cut into strips and riveted. I had seen and sat on many home built seats that were not at all comfortable.

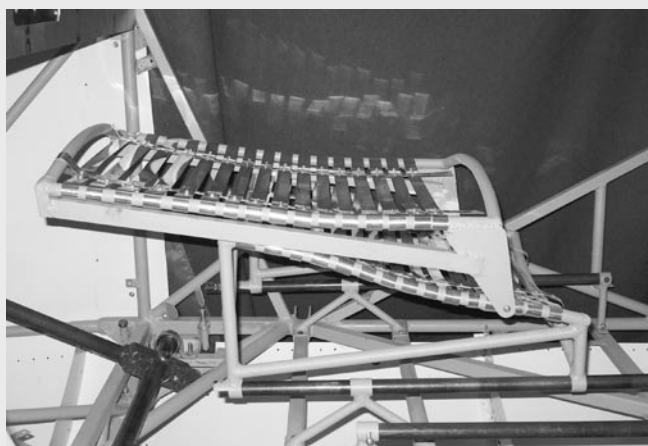
Many were just a flat board with a piece of foam over it.

At the time I built these seats, I was driving a Honda, and I found the seat very comfortable for long trips, so I copied the shape with a cardboard form. I reproduced the forms in a thick piece of plywood, and then laid a strip of steel over the edge of the forms for protection.

With the assistance of a friend, we heated up the steel to red, and shaped it to the wooden forms. It is obvious that the seats still need to be covered, but with a couple inches of good foam over the seats, they are very comfortable.

These seats will be used in my side-by-side Citabria, adapted from the original tandem fuselage.

Ernie Riddle
RAA # 7917



President's Message

Cont'd from page 2

The Board of RAA Canada would like to thank Jaime for his dedication to our membership, and for his support of RAA's work with Transport.

RAA/TIGER BOYS FABRIC SEMINAR

Noted Tiger Moth restorers Tom Dietrich and Bob Revell recently ran a weekend fabric seminar for our members, and Michel Tondreau drove from Quebec to attend with seven others, and to write the report that is in this issue. RAA Canada would like to thank Tom and Bob, and also Jeff Leavens of Leavens Aviation for their contributions to this successful grassroots event.

FAUCHEURS DE MARGUERITES

Every year our members in Sherbrooke, Quebec put on a first-rate weekend fly-in at their airport and it always gets good attendance from neighbouring provinces. Unfortunately last year there was a date conflict when the Oshawa show was moved to the Fauchers date. This year the Fauchers date has been moved to the July 1st weekend. Take the entire family to Quebec and camp for the weekend. You can meet your fellow builders from the eastern part of our country.

RAA AGM May 13th

Our RAA Niagara chapter is hosting this year's AGM at Welland Airport on May 13th, as our season-opening fly-in. Early members may meet at the Russell Collection of warbirds in the morning, before the meet-

ing. Lunch will be served prior to the afternoon meeting. Please attend to help set the course for RAA, and to kickstart the season's events. Details will be posted on the www.raa.ca website. You may send agenda items in to myself at garywolf@rogers.com

RAA SCALES

RAA now has seven sets of electronic weight and balance scales, available to members for a nominal \$30 rental fee, plus cost of shipping. All financial arrangements are to be made with our office at 1-800-387-1028. Recently-appointed Regional Director Terry Wilshire has agreed to administer the set for Coastal BC, and he may be reached at his office at Delta Airpark. (604)721-7991.

Build and fly safely! **RAA**

TAPE MEASURE SETUP

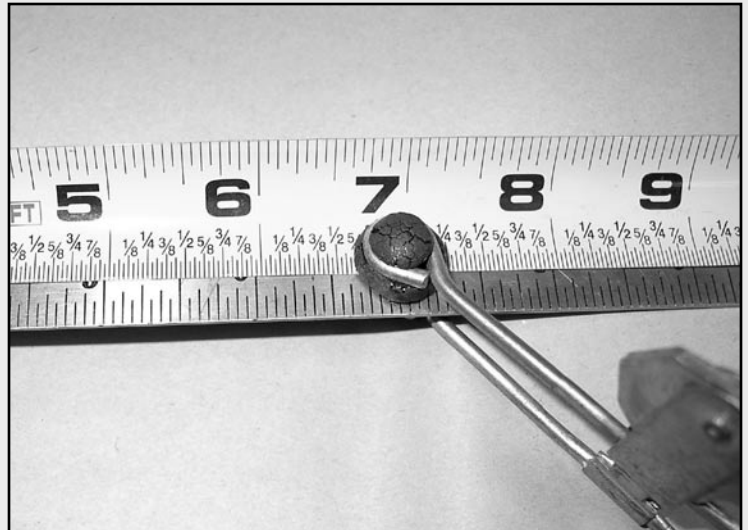
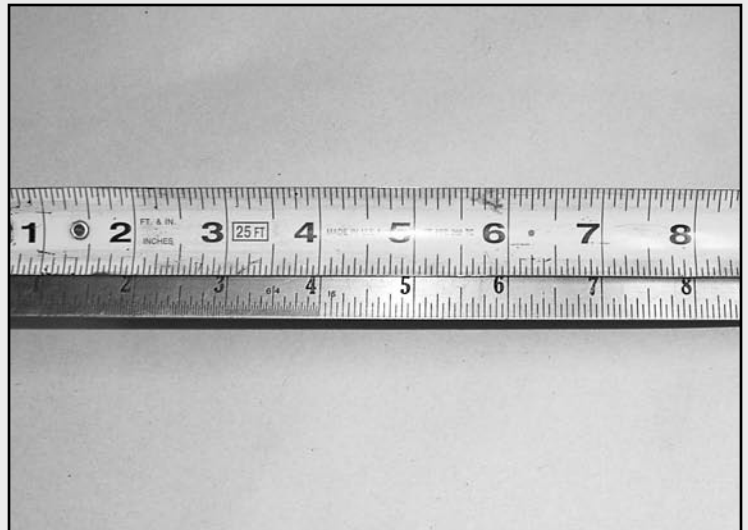
Gary Wolf
RAA # 7379

WHY WOULD ANYONE have to upgrade anything as hammer-simple as a tape measure? Well the sad truth is that there are more bad tape measures than good ones. The Princess tape in the photo is 1/16" out compared to the old standby Starrett, and this discrepancy can cause a lot of problems. The culprit is the slotted tongue at the end that is supposed to allow for its own thickness when doing inside and outside measurements.

To check, a good steel scale was first verified to be accurate with a vernier caliper. The two tapes were then checked against the steel scale, and this showed the discrepancy. It is possible to correct the inexpensive tape by setting the end fitting in place and staking the two rivets. This means that the end cannot slide for inside measurements, but we do very few of these in the construction of an airplane.

The two rivets can cause a much greater problem than 1/16" inaccuracy. It has not been unknown for one of them to catch the edge of a sheet of aluminum or a steel tube and for the builder not to notice while marking his cut line at the other end. The result will be a part that is half an inch short. To prevent this, a simple turn of duct tape over the rivets will allow the material to slide past, to be caught by the end fitting.

From the Top Down:
First check the steel rule;
The old standby Starrett shows its accuracy;
The Princess tape is a full sixteenth out because of the slots on the end fitting



...another problem - the rivets can catch on the material and give a false reading.



The Red Green cure for the problem: one turn of duct tape and all is well.



I consider an aviation GPS to be a mandatory piece of gear for cross country flying these days

in the flight levels or landing and departing the airport, in which case they are probably flying into or out of the Class B horizontally.

There are other types of U.S. airspace to be wary of. Restricted areas should, of course, be strictly respected. The U.S. has large chunks of airspace called Military Operating Areas or MOAs. These are basically local practice areas for military jets. There is usually no specific prohibition against entering them, but it may not be wise if there are jets thrashing about in there at 600 knots. Many of the MOAs are only active during certain hours but your best bet is to either avoid them entirely, which might put you 50 miles or so out of your way, or call the appropriate ATC facility and ask if there is any activity. Flight following isn't a bad idea in this instance, but remember it is advisory information only – separation is not guaranteed.

Now we get to the subject of the dreaded Temporary Flight Restriction, or TFR. Maybe I'm just lucky, but I have made 14 trips through the U.S. since 9/11 and have yet to encounter one anywhere near my flight path. There is a big permanent one over Washington DC, and you do have to be careful of the temporary ones that pop up over the President and Vice President wherever they go. Flying over nuclear facilities and stadiums is also prohibited. Most of the flight planning websites will graphically show you the current TFRs, or you can go to [HYPERLINK "http://www.aopa.org/whatsnew/notams.html"](http://www.aopa.org/whatsnew/notams.html) <http://www.aopa.org/whatsnew/notams.html> for detailed information. My advice is to check all available data, and make sure you ask the U.S. FSS for a standard briefing when you file your flight plan. The standard briefing is supposed to include information on any TFRs along your path of flight. Give all TFRs a wide berth unless you are specifically authorized to enter by a controlling facility. In practical terms, the TFRs are so widely scattered that they are unlikely to seriously impede your flight unless one pops up right over your intended destination.

Continues

Over The Horizon / Cont'd from page 18

airspace. If you were to draw a line from Winnipeg to any random point in the U.S., and then follow your line of flight, you would only rarely cross through a control zone, perhaps every 50 or 100 miles. If you fly at more than 3000 feet AGL, most of these control zones aren't even a factor – you just fly right over them and don't need permission from anybody.

Around the biggest cities, you may be surprised to discover that the controlled airspace is actually smaller than what we have around Winnipeg. Most of these very busy Class B control zones can also be overflown if you want to go high enough. Here in Winnipeg, the controlled airspace extends from the ground to basically infinity. You can't legally over fly Winnipeg International without talking to a controller and being vectored under his control. Detroit's class B, on the other hand, can be legally overflown at just 8500 feet, VFR. Many pilots argue that over-the-top of a busy class B is the best place to be if you need to transit the area. Most traffic will be either way up

Almost all airports, in both the U.S. and southern Canada, are ready and willing to handle transient light aircraft

I consider an aviation GPS to be a mandatory piece of gear for cross country flying these days. A reasonably modern GPS with an aviation database will show your position in relationship to MOAs, restricted areas and controlled airspace. While TFRs are not depicted on the average hand held GPS, knowing your exact position is really helpful in maintaining your distance when you are close to one. In general, a GPS makes avoiding these areas with minimal delay a piece of cake.

Fuelling Up and Tying Down

I've said before that American aviation facilities are, well, lavish. It seems that any town of respectable size will have a major airport with multiple paved runways, a charter operator or two, FBOs with fuel and maintenance facilities, and a wide variety of general aviation aircraft. Some of these municipal airports are so extensive that I almost get lost taxiing from the FBO to the runway. Yet many have less traffic than Lyncrest.

Not all are under-utilized. Some of the more popular general aviation airports, like Falcon Field in Phoenix, are extremely busy at peak times. On weekends it is not unusual for Falcon to have two traffic patterns going full tilt around it's parallel runways, with Cessnas and Pipers landing every 30 seconds, all day. It's the closest thing to Oshkosh that I've ever seen in a routine general aviation setting.

Almost all airports, in both the U.S. and southern Canada, are ready and willing to handle transient light aircraft, and more than happy to sell you fuel and provide any reasonable service you need. That's their job. FBOs are the service stations of the airways. You just pull in and ask them to fill 'er up. This might seem obvious to you seasoned veterans of the air, but judging by the amazement of friends when I

tell them about my trips, the general public has no idea such an extensive network of support facilities even exists, let alone that it is available to small private aircraft.

Most FBOs of any size will have washrooms, a pilot lounge, a drink and snack machine, and a flight planning area with computer and Internet access for weather. Parking is generally available without reservation, although it would be good to phone ahead if you need a hangar or are planning to stay awhile. Fuel prices will usually be proportional to the size of the airport. I find medium sized, uncontrolled municipal airports to be about right for my purposes. They will usually have at least one well-equipped FBO with at basic maintenance facilities if I should need them.

When I first started stopping at these types of airports, I was amazed to discover that many of the FBOs have free courtesy cars so you can blast into town for a burger. Many will even let you keep the car at your hotel for the night, and some may have two or three vehicles for this purpose!. They aren't always particularly nice cars but you can't beat the price and convenience. Even FBOs that don't offer free cars will always help you find transportation and lodging if you need it. Some, like the Jet Center in Fargo, only offer rental cars, by the hour or day. Not as good as free, but still handy if you just want to grab lunch and do a bit of shopping.

Some of the services offered at these places will make you feel downright spoiled. At Tucson Executive, they pull up to your plane with a golf cart to whisk you and your luggage to the FBO building a whopping 30 yards away. At the Regina Shell Aerocentre, they lay out a little red mat at the foot of your airplane door so you can wipe the grime off of your feet before getting back on board.

I'd like to put in a brief plug for one particu-

lar FBO, Millionaire Aviation in St. Paul Minnesota. Upon arrival at this FBO you enter a mahogany-paneled room to be greeted at the reception counter by uniformed staff who will find you a deal on a local hotel and offer you a free ride to it in their new Lincoln Town Cars. They even offer to pick you up when you are ready to come back. The charge for this service is a whopping \$5.00 overnight parking fee, waived if you purchase gas.

A caution about fees - it is a good idea to call ahead if you are worried about it. Most small airports charge only a few bucks for overnight parking, but some of the big city FBOs charge rather exorbitant ramp fees, thought these are usually waived if you buy gas. Overnight hangar rentals are often available, and range from \$10 a night up to \$50 or more at

the big airports.

To sum up, I suppose cross country flying isn't for everyone. It certainly took me a while to get comfortable with it. It can be nerve wracking at times. It is always loaded with uncertainty and requires patience, and the ability to cope with the unexpected. But it is extremely rewarding and opens up a whole new world of flying pleasure, pun intended. Plan carefully, fly safely, take your time and explore the continent with your magic flying carpet.

RAA

A Few Groaners

A veteran airline captain, apparently checking in with ATC on the wrong frequency, was asked:

"Say your position?" to which he replied, "Captain".

Pilot coming in with his buddy who had never flown before:

Pilot: "This is 1234 Delta five miles north for landing with Mike".

The tower clears him and he lands. When they shut down, the passenger, whose name is Mike, says, "Why'd you have to tell them that I was with you?"

Heard from slightly irritated ATC: "Put your compass on 'E' and get out of my airspace".

Keep in Touch With Your Board of Directors!

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Ken Armstrong 250-652-3528
 aviator-horizon@telus.net
 709-6880-Wallace Dr., Brentwood Bay, BC V8M-1N8

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

..... emailKingDWS@Gmail.Com

Alberta North:

Ralph Knight 780-456-1650 rdknight@telusplanet.net

Alberta South:

Gerry Theroux 403-271-2410 grtheroux@shaw.ca

Saskatchewan:

Curt Halpenny 306-934-2965
 cth.saskatoon@sasktel.net

Manitoba:

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

Ontario SW:

Denny Knott 519-471-7058
 36 Guildwood Walk, London ON N6H-3X2

Ontario S/Central:

..... Gunnar Doerwald

..... 905-468-3713 gunnar@doerwald.net

Ontario East:

..... TBA

Ontario North:

Morris Frandsen 705-732-2789 frandsen@vianet.on.ca

..... RR#1, Rosseau, ON P0C-1J0

Quebec:

Raymond Fiset 418-871-3761 rayfiset@qc.aira.com

..... 7925 Hamel Blvd., Ste Foy, PQ G2G-1C8

Appointed Positions:

Translation: Pending

Magazine Mailing: Dave Evans

Ultralights: Wanted

Web Page Frank Noordhuis

Insurance Committee Gary Wolf

AirWear Bill Tee

Classified Ads

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 :raac@inforamp.net

Deadline for submissions is the first of the month preceding date of issue.

Artwork: Rates apply to camera ready artwork. Digital files are preferred and should be sent as email and in .txt format, PDF, JPEG, MS WORD, Photoshop or other common file types. Advertising is payable prior to printing of magazine unless other arrangements have been made. Payment is in Canadian funds. 10% Discount applies to one year (6 issues) insertion paid in advance. Commercial Classified ad rates 1/8 page minimum.

Advertising Policy

The Recreational Flyer Publisher reserves the right to refuse any or all advertising for any reason stated or unstated.

The Recreational Aircraft Association Canada does not assume responsibility for advertisements, but does exercise care to restrict advertising to responsible, reliable individuals.

Please note: Ads running more than 3 issues must be renewed to guarantee continued display in the magazine.

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Owen MacPherson
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George Gregory

Art Director and Layout:
George Gregory

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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

ACRO SPORT airframe including all fittings, controls, empennage but minus wings \$4000.00 USD 418-871-3761

PIPER COLT complete airframe \$3000.00 USD 418-871-3761

Subaru EA81 engine, running well when removed from under 100K car. \$300
meled@wrightman.ca 519-665-2161

Set of dimpling tools. Avery Dimpling Tool (arm) with 22 inch throat \$149.00 CDN. Set of dimple dies for the above - 3/32, 1/8 and 5/32 \$102.00 CDN. Poly dimpling mallet \$18.00 CDN. 3 X 5 foot dimpling bench for the above \$25.00 CDN. TATCO hand squeezer STH-90 with STY-20 2 inch yoke \$98.00 CDN . Total group price - \$392.00 CDN or near offer. Will sell individually. Shipping is extra. Dave at 416-282-5252 or daveaustin2@sprint.ca

1962 Cessna 150B Patroller, unique airplane with long range tanks, equipped with Horner wingtips. Fresh, extensive annual just completed. Was used as patrol aircraft. 14,400 hrs TT, 1450 SMOH, 650 STOH. Great flying aircraft, strong engine. Well maintained. Stationed at CYKF. Asking \$23,500.- Send email to rudyhane@rogers.com and I will supply more info and pictures.

Lowrance Airmap 1000 GPS, as new, bought few months ago, July database large screen. Comes complete with all accessories. card. Only thing missing is the box. New price including taxes is about \$850.- selling for \$750.- AND include a 512 meg data card (\$90.- value) instead of the standard 32 meg memory card. Email for details: rudyhane@rogers.com

Stits Skycoupe on Full Lotus floats, wheels available. Fabric recently rejuvenated. O-290 engine. Asking \$25,000.- For pictures and more detail email rudyhane@rogers.com

Cleaning out the barn: Pair of Cessna 150

fuel tanks; C 150 Flaps; C172 gear legs complete with axle; C 150 upper and lower cowls; LH and RH elevator for PA-12, one rebuilt one needing minor repair; C 150 doors, LH and RH; various sets of wheel pants for PA-28, C 150, C 172 and Champ; Turtle deck for a standard KR-2 (why build one when you can buy one cheap!); Tail wheel assembly for home built, 5" dia; Tach left over from a BD-5 kit as well as a spinner for same; 2 new Air Trac 500-5, 6 ply tires, 1 new Condor 600-6, six ply tire with a new inner tube, 1 new Brackett air filter assembly for C 172, incl. filter element; 5 Champion oil filters; aircraft brake fluid and Shell aviation grease cartridges; home crafted scales (using bathroom scales) for main wheels 1000lbs max. with drive-on ramps. Email: rudyhane@rogers.com can return with pics.

Lycoming overhaul manual and parts catalog for O-320 A and E Series, asking \$60.- for both; Carburettor for O-320, Price TBA; one new cylinder assembly for Continental O-200, asking \$200.- rudyhane@rogers.com

ACRO SPORT airframe including all fittings, controls, empennage but minus wings \$4000.00 USD 418-871-3761

McCaughey IC160/CTM7557 , with logs - \$1,000 . Prop bushings set Lycoming O320 diameter 5/8" drilled 7/16" - \$150 Bill Smith evergreeninternational@sympatico.ca 705 526 9279

R80 Bush CADDY for sale. Complete kit approx. 30% built. Contact Bill at w.brubacher@sympatico.ca

Valcom 760 TSO Transceiver, New \$650.00 Peter @ 705-267-1836 or nubbie@ntl.sympatico.ca may 05

For Sale: Sonex serial number 320. Included: plans, machined spar caps, formed alum kit, form block kit, Titanium gear legs for std tailwheel, tail tips, seat belts, lead counterweight, cherry rivet kit, stainless steel firewall, all hinges, all 025 aluminum sheet, angle and plate - wings skins and fuse sides layed out and pilot drilled, some hardware and tailwheel, Total cost about USD\$6300

plus tax - Save over \$2300 over Sonex cost -Priced to sell quick at USD\$4000 or best offer. Bonus - I will throw in a Lightspeed 20xl Active noise canceling headset in as new condition with case. Email me for more info at airplanes@sympatico.ca or call Chris at 1-866-733-8432.

SPACEWALKER 2 : 38 Hrs. Engine and airframe. Lycoming O-290-D2 135 HP. Full Flow Oil Filter Cyl. Head Temp. Gauge Oil Pressure and Temp Gauge Electric fuel gauge all tanks Electric start Val Comm 760 radio Narco Transponder mode C ELT Fitted Intercomm Fitted 18 Gal Main tank 2 - 5 Gal wing tanks Polished prop and Spinner Absolutely outstanding aircraft. \$23,000.00 CDN. O.B.O. George 403-931-3449 George@ace-aero.com e-mail for pictures

Nice Tailwind for sale,C-90.This plane is too much for me to handle. \$25,000. firm. Ted Strange 1-250-762-492

For Sale - one three blade 68" warp drive prop for Rotax 582 engine, one blade missing Contact Don (519) 372-1383 or kinger@bmts.com.

For Sale: Zenair Zodiac 1996. Cont. 0-200 125 hrs. A/F 340 hrs. Beautiful flyer. Photos available on request. Must sell, bought RV. Asking \$34,000 CDN. 519-442-2962 dorothybenton@hotmail.com

For sale: 3 sets of axles, 1 π" x .120" 4130 steel tube. Mains are 8" long, nose is 9" long. No fittings cut or welded, no holes drilled, just the plain tube. Offers on one or more sets. Proceeds to RAA-Toronto Region. Ken Yates, 905-857-3218, kennan@rogers.com.

Titan Tornado 2 set up for Rotax 912 assembled includes electric flap, hydraulic disc brakes, wheel pants 25 gal fuel tank VFR instruments, primer & paint. No engine.\$22000.00 CDN 418-661-1328 marie_andre@b2b2c.ca

Stolp Starduster II, 200 HP, C/S, Inverted, Canopy, 300 TT, \$35,000, PA22/20 Super Pacer project, wings ready for inspection, fuselage lengthened & painted, every

thing here to complete, 200 HP, 3 pld C/S McCaughey, 2400 Floats \$40,000. Buy both, fly the Starduster finish the Pacer, good deal for both. 1-250-785-6789 Jim. Central Time.

Subaru EA81 engine and redrive by Reductions. Engine 105 hp @ 4500 rpm. Redrive is 2.1 to 1. Run up time after assembly only. \$5000 firm 204 488-0829 or bwkirk@mts.net

FOR SALE

Member of a local RAA Chapter has passed away and widow wants to find a good home for her husband's Luscombe 8A on owner-maintenance. It has the C85 engine with starter and generator. This Luscombe had corrosion inspection of the tank areas in wings carried out before changeover to owner-maintenance. Airframe hours are around 2500, and engine hours are in the mid 1600 and runs well. Aircraft was hangared almost all of the last 10 years. Sacrifice at \$22,500 OBO. For more information call 250-843-7525.

RV-4 project. Empennage finished. Flaps and ailerons finished. Wingspars finished..(Ribs were drilled and attached with clecoes. Now removed, numbered and boxed) Fuselage on the jig. Will try to attach bottom and side skins so it can be removed. All parts primed. Asking \$12000.- (519) 461-1464

Air Strip, new 42'x 40' hanger, trout stream, trout ponds, sugar bush, fruit, newly renovated bungalow, 61 acres. Mt Forest \$359,000 e-mail pennantmanor@hotmail.com

RV-6 Empennage and wing kit. Later version with pre-punched skins. Phlogiston pre-assembled main spars. Both kits in original boxes. Manuals and drawings included. Asking \$ 7000.- (519) 461-1464

Lancair 360 MkII FastBuild. All accessories and all options to completely build the plane except engine, prop and avionics. OutBack gear, Hydraulic gear doors, fuel pumps, bracket kit, Lights/strobes/servo's, epoxy pump, everything. 20% completed. \$35,000

continues



**FOURTH
SOUTHWEST REGIONAL
RAA
GATHERING**

MAY 27, 2006

**CHATHAM-KENT AIRPORT
NZ3**

**FLY IN
Drive in
BREAKFAST**

All aircraft and affiliations welcome.

Breakfast served 08:30 to 11:30 am

Pancakes, Toast, Ham, Eggs, Juice, Coffee

Only \$5.00

Meet your fellow pilots and families from last year!

Make new friends for 2006!

View interesting aircraft.

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Low key, no pressure event!

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Hosted by KENT FLYING MACHINES, RAA CHAPTER 4975

Contact Mac at 519-692-5309

Rain Date May 28, 2006

firm or trade on truck/camper. (604) 574-8384

Upper wing - uncovered, no apparent damage. Starboard lower wing - uncovered, some damage to two outer ribs and tip bow. Set of wing struts. Misc: Two Hoover prop blades, possibly AvroAnson. Phone L. Katocs 905-725 5719

Wanted

Wanted - 3/32 and 1/8 clecos, countersink

dies, micro countersink drill attachment. Contact Don (519) 372-1383 or kinger@bmts.com

Looking for aluminum extrusions for the keels of floats. any parts or suggestions? r_lewis@nf.sympatico.ca

Wanted to purchase good or rebuild able IO 540 for Steen Sky bolt project, also any airframe or parts for the same. Wanted to purchase FLYING OR PROJECT DR1 Fokker Tri Plane. OFFICE 1-705-653-4525 or davidcarlaw@prototyperesearch.com

Do you have an abandoned project or a non-flying aircraft, Zodiac or Challenger II, sitting in a barn or hangar? I am interested in a low budget project. Ivan, ivank@ca.inter.net

Wanted: Airbox for Rotax 912. Contact Dennis Vogan at 416-606-0753.

Ads run for a maximum three issues depending on space available. Please direct all classified inquiries and ad cancellations to wolfpack@sentex.net

New In Canadian Skies



Vern Little's RV-9A

Vern Little

My Van's RV-9A C-FVRL, completed its first flight on January 24th, 2006. Along with Safety Pilot Mike Langford, we departed Boundary Bay Airport (CZBB) in an awful hurry after a long gestation period of 3-1/2 years and 3,396.6 shop hours.

The fuselage is a Quickbuild, but everything else is a (relatively) slow build. Paint is by Arrow Tech Graphics in Langley, B.C. Interior kit is by Flightline Interiors. I did the avionics and wiring, including the development of several custom circuit boards that I make available through vx-aviation.com. I designed a removable instrument panel for easy maintenance and upgrades. Upgrading the panel should be a lot cheaper than building a new airplane.

Empty weight is 1085 lbs. Engine is an Aerosport O-320-A1AC2, which uses roller lifters and dual mags. The prop is the standard Sensenich metal fixed pitch. This combination provides a 75% cruise speed of 165 knots at 8000 feet, and an economy cruise of 155 knots at 65% horsepower. The panel is night VFR/

VFR OTT with Dynon EFIS, Trutrak Autopilot and TBI, Garmin GPSMap 296, Rocky Mountain Engine Monitor, Garmin SL-40 Comm and GTX-327 Transponder. Traffic Monitor is a Monroy ATD-300 which I highly recommend.

I chose the RV-9A for cross-country use, with the intention of regular flights from Vancouver to the Okanagan valley, where I have a condo on Lake Osoyoos. Climb rate, cruise speed and glide ratio were all important considerations. I calculated that at 8500 feet, it was possible to fly over the mountains from Boundary Bay to Oliver and always be within gliding range of an airport during the trip. My home base is Boundary Bay, at the heart of the most complex airspace in Canada. I'm a member of the Boundary Bay Flying Club and RAA Chapter 85, based at Delta Heritage Airpark.

For those considering building an RV, I recommend the Quickbuild kit, at least for the fuselage. I didn't have ready access to a bucking partner, so this worked well for me. I was able to build most of the kit without help by using special fixtures and long arms. I devised a method for single-person riveting of the bottom wing skins. Details are on my website at www3.telus.net/aviation/flying/RV-9A/rv-9a.html.

The biggest challenge to flying an RV-9A is planning the descent. I begin descent from 6000 feet about 25 miles out in order to enter the circuit at a low enough speed to deploy flaps. To put it into perspective, at 15 miles out, I could pull the throttle to idle at 6000 feet and glide to a landing!

The RV-9A lands like a Cherokee, although the approach angle can build quickly below 55 knots. I routinely land it nose high, and keep the nose wheel off the runway for several hundred feet using the powerful elevator.

The RV-9A is an excellent choice for anyone stepping up from 172's or Cherokees. The performance is addictive, and with a bit of attention to detail, it is easy to fly. At 165 knots, it will also get you where you are going quickly and in style.

Send us Photos of your completed projects

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

13691 McLaughlin Rd, RR 1,

Cheltenham, ON L0P 1C0

...or email us the information and a high resolution digital picture to: raac@inforamp.net



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 Ilerville, 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. President Jacques Genest president@raa415.qc.ca (450) 447-9042

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

ASSOC DES CONSTRUCTEURS D'AVIONS EXPERIMENTAUX DE QUEBEC (QUEBEC): Third Monday 7:30 pm at Les Ailes Quebecoises, Quebec City Airport. Contact Pres. Ray Fiset, 418-871-3781. rayfiset@qc.aira.com

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: Fourth Monday 7:30 pm, Lake Simcoe Regional Airport. Contact Treas. Gene Bemus 705-325-7585 gene@encode.com

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

COLLINGWOOD AND DISTRICT: The Collingwood and District RAA, Chapter 4904, meets the first Thursday of every month, at 7:30 p.m. except July and August, at the Collingwood Airport or at off-site locations as projects dictate. For more information, contact Keith Weston, 705-444-1422 or e-mail at kcweston@sympatico.ca

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 Editor Frank Ball fdmneball@sympatico.ca 905 822-5371

HAMILTON: Second Friday 8:00 pm Months of Feb, April, June, Aug, Oct, Dec, at Hamilton Airport. Contact Pres. Brian Kenney, 905-336-5190

KENT FLYING MACHINES: First Tuesday 7:30 pm at various locations. Contact President, Mac Mazurek 519-692-5309 macmaz@mnsi.net

KITCHENER-WATERLOO: Meets the third Monday of each month in the upstairs meeting room of the cadet building at CYKE, except during the summer months when we have fly-ins instead. Please contact arankadd@rogers.com for information, or call 519-885-1155.

LONDON-ST. THOMAS: First Tuesday 7:30 pm. At the Air Force Association Building, London Airport. Contact President Angus McKenzie 519-652-2734 angus@lweb.net

MIDLAND-HURONIA: First Tuesday 7:30 pm Huronia Airport. Contact

Secretary, Ted Aldred 705-526-4909 wings@csolve.net

NIAGARA REGION: Second Monday 7:30 pm at Niagara District Airport.

Contact Pres. Len Pettersen swedishcowboy29@aol.com

OSHAWA DISTRICT: Last Monday at 7:30 pm at Oshawa Airport, 420 Wing RCAF Assoc. Contact President Chris Gardiner 905-668-5703 cgardn628@rogers.com

OWEN SOUND: Contact President Roger Foster 519-923-5183 rpfooster@bmts.com
OTTAWA/RIDEAU: Kars, Ont. 1st Tuesday. Contact: Secretary, Bill Reed 613-831-8762 bill@ncf.ca

SAUGEEN: Third Saturday for breakfast at Hanover Airport. Contact: Ed Melanson 519-665-2161 meled@weightman.ca

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 pm at Ch 41 Hangar on north end of Brampton Airport Contact: President, Earl Trimble 905-787-8524 northerntrailwind@aol.com

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

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

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. Contact Jill Oakes 204-261-1007 raa_wpg_executive@yahoo.com

SASKATCHEWAN

NORTH SASKATCHEWAN: Third Monday 7:30 pm at Westwind, Hangar #3. Contact President Garth Pippin for info at 306-666-4476

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 Calvin Thorne at 403 932-4325 or email: cbthorne@telus.net

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

780-485-7088

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

MEDICINE HAT: Last Thursday of the month 7:30 pm RAAC Club Rooms, Airport. Contact Secretary, Boyne Lewis 403-527-9571 handblewis@thehat.ca

BRITISH COLUMBIA

ABBOTSFORD: Third Wednesday 7:30 pm Abbotsford Flying Club, Abbotsford Airport. Contact President, John Vlaka 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 RAACHAPTER 580: Second Sunday 13:30 pm Sechelt Airport Club-

house, sometimes members homes. Contact Pres. Gene Hogan, 604-886-7645

CHAPTER 85 RAA (VANCOUVER): First Tuesday 8 pm Delta Heritage Airpark Clubhouse 4103-104th St., Delta, 596-3694. Contact Tim Baker 604-588-0333 timbakerzot@hotmail.com

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: Third Wednesday of the month (except July & August) at 7:30 PM, alternating locations: even numbered months in Fort St. John and odd months in Dawson Creek. Phone Richard Lawrence for location, details at 250-782-2421.

Chapter executives please advise of changes as they occur. For further information regarding chapter activities contact RAA Canada, Brampton Airport, 13691 McLaughlin Rd. Cheltenham, ON L0P 1C0 Tel. 905-838-1357, Fax 905-838-1359 or call toll free 1-800-387-1028

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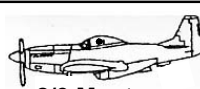
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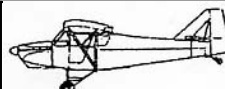
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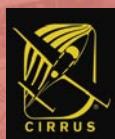
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