RECREATIONAL FLYER

January - February 2007

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

The Incredible Pietenpol

RAA
RECREATIONAL AIRCRAFT ASSOCIATION
RÉSEAU AÉRONEFS AMATEUR CANADA

from the president's desk

Gary Wolf

RAA SGM AND AGM

Mark your calendars early for two special days. March 24th will be a free day for RAA national members to visit the Toronto Aerospace Museum in Downsview (Toronto), courtesy of Paul and Sean Fleming at Aircraft Spruce Canada. There will also be a brief meeting to pass a motion to alter the bylaws to allow RAA to accept donations and issue tax receipts. This Special General Meeting of the Membership (SGM) will be a brief meeting at noon, and we can then get back to touring the Lancaster project, the Arrow, and the other planes on display at this historic Museum.

The July 1st weekend will be the RAA AGM, hosted by Chapter 85 in Delta BC, in conjunction with their fly-in. This will be a chance for our western members to get together at a great weekend fly-in, and have direct input into the operation of RAA Canada.

JANUARY 2007 AVIATION SAFETY LETTER

This issue of the Safety Letter has an article by an RAA member that will affect many of us. RAA Member Brian Kenney is an engineer and a fuel specialist at Petro Canada and he is very familiar with the concerns of private aviators. His Copa article on gasoline containing ethanol (GCE) has been reprinted in the current Aviation Safety Letter, and is well worth a read. Brian's personal plane is part of the Pietenpol feature in this issue of the Rec Flyer, and it is well to note that his own plane has an aluminum tank. Brian has spent much of the past year addressing RAA chapters in Ontario on the subject of GCE, and now the rest of the country can get the straight skinny on this fuel, without the rose coloured government bias.

Pages 24 and 25 are the pertinent pages, and there is an inset with the procedure to test for the presence of alcohol in gasoline. Xerox the article and read it often. Hand out copies to your flying buddies.

AULA and CARAC

Since the inception of the AULA category, Transport has taken a hands-off approach to these planes, despite that they are considered legal for the carriage of passengers. There is no inspection of the airframe unless the manufacturer himself requires one before signing that it is fit for flight. Even the manufacturer's DS 10141 statement is not inspected by Transport, or by anyone for that matter.

The Working Group proposal to Transport included a recommendation that the AULA category be changed so that manufacturer, paperwork would be fully inspected before they could sell any more planes. On this basis, their new production would receive a Special C of A, equal to that awarded to Amateur-Built aircraft that have been fully inspected by MD-RA. Unfortunately when the decision record came out, it included an unexpected clause that would allow the owners of any existing AULA's to receive a Special C of A just by asking for one. No inspection of the airframe or paperwork would be required - just ask and receive. At the January 11th CARAC meeting RAA spoke against this part of the proposal, because it would immediately make it impossible for a pilot or member of the public to differentiate between the old unverified aircraft and the new ones that meet the requirements of the category. RAA has enlisted the cooperation of EAA Canada Council, and we have submitted a joint objection to this aspect of the decision record. Let's keep a clear line drawn between the old and new categories. A Special C of A is not a birthright - it must be earned.

The amateur-built category remained unaffected in the recommendations. It was used as the model of what is right in the regs. The overweight 7000 pound "amateur built" jets will have their own category once the proposals become part of the regs, and they will stop camping in ours.

CLASS E AIRSPACE

For over ten years a segment of the UL community has maintained that Basic UL's are forbidden to enter Class E airspace. This has come about from an ambiguously written reg, and a willingness to misinterpret among a small faction of the UL community. In Southern Ontario there is a large Class E veil that has a 700 ft floor, so UL pilots have been scudding about below 700 ft for years, and have even been using this misinterpretation to enter 1000 ft circuits at 500 ft. The proliferation of cellular towers makes this low flight an increasingly dangerous practise on hazy summer

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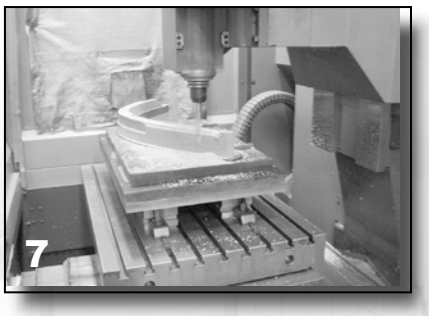
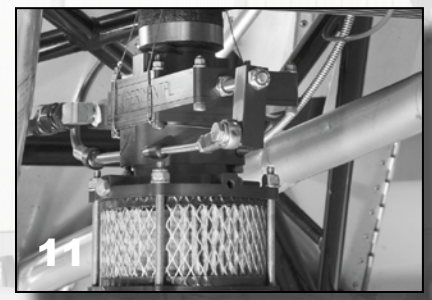
features

Gary Wolf

On the Cover: *Paul Poulin's immaculate Piet.*





The Other Side of

RENO

Story and Photos by Don Souter

WITH ALL THE EXCITEMENT and spectacular racing going on right in front of you, I could forgive anyone for not exploring the many other options for education and entertainment while at the Reno Air Races. But please take a right turn one morning and go down to the East End of the ramp. You can usually see a military C5 tail sticking way up into the blue sky. This is not the only thing to see down here: visit the military ramp too; they always have an assortment of interesting displays. Some are even set up for the kids to get in an look around!

As each year passes on the Reno Air Race east ramp, one quietly sitting static aircraft group is becoming more impressive. Each year at the East end of the Stead Airfield ramp, a group of museum quality *flying* aircraft are put on display for the public to drool over. These fine aircraft are not only spotless, but accurate in their paint and finishing to the nth degree. You see, they are here by invitation to

compete for the honor of the Rolls Royce National Heritage Invitational. Aircraft are judged in three categories: Antique, Classic, and Warbird. The Smithsonian and the National Air and Space Museum, The National Aviation Hall of Fame and Reno Air Racing Foundation all sponsor the event. There is also a Peoples' choice award as ballots are cast by public while walking among the wings of these incredible restorations.

National Aviation Heritage Invitational Vision and Mission Statement

The vision and mission of the National Aviation Heritage Invitational is to encourage the preservation of aviation history through the restoration of vintage aircraft to original flying condition. The National Aviation Heritage Invitational promotes aircraft restoration via friendly competition, bringing valuable aviation treasures together in one venue. This endeavor is a joint effort under the auspices of Rolls-Royce North America Inc., the National Aviation Hall of Fame, the Reno Air Racing Foundation and the Smithsonian National Air and Space Museum. Currently there are two Invitationals - one held at the Dayton Air Show in July (Eastern Region) and one held at the Reno National Championship Air Races in September (Western Region). Check out http://www.heritagetrophy.com/

This year's overall winner (out of a total displayed aircraft of-29) was a flying 1918 Curtis JN-4H (Jenny). It is owned by Frank Schelling, from Pleasant Hill California. Yes, this delicate machine does fly: a crew of four men fussed over it all day keeping it clean and answering questions from interested onlookers from our early "Photographers Only" shooting (at daybreak before 6AM) until the area is secured again around 6 PM. A friendly bunch, they were willingly posed by one of the photographers to

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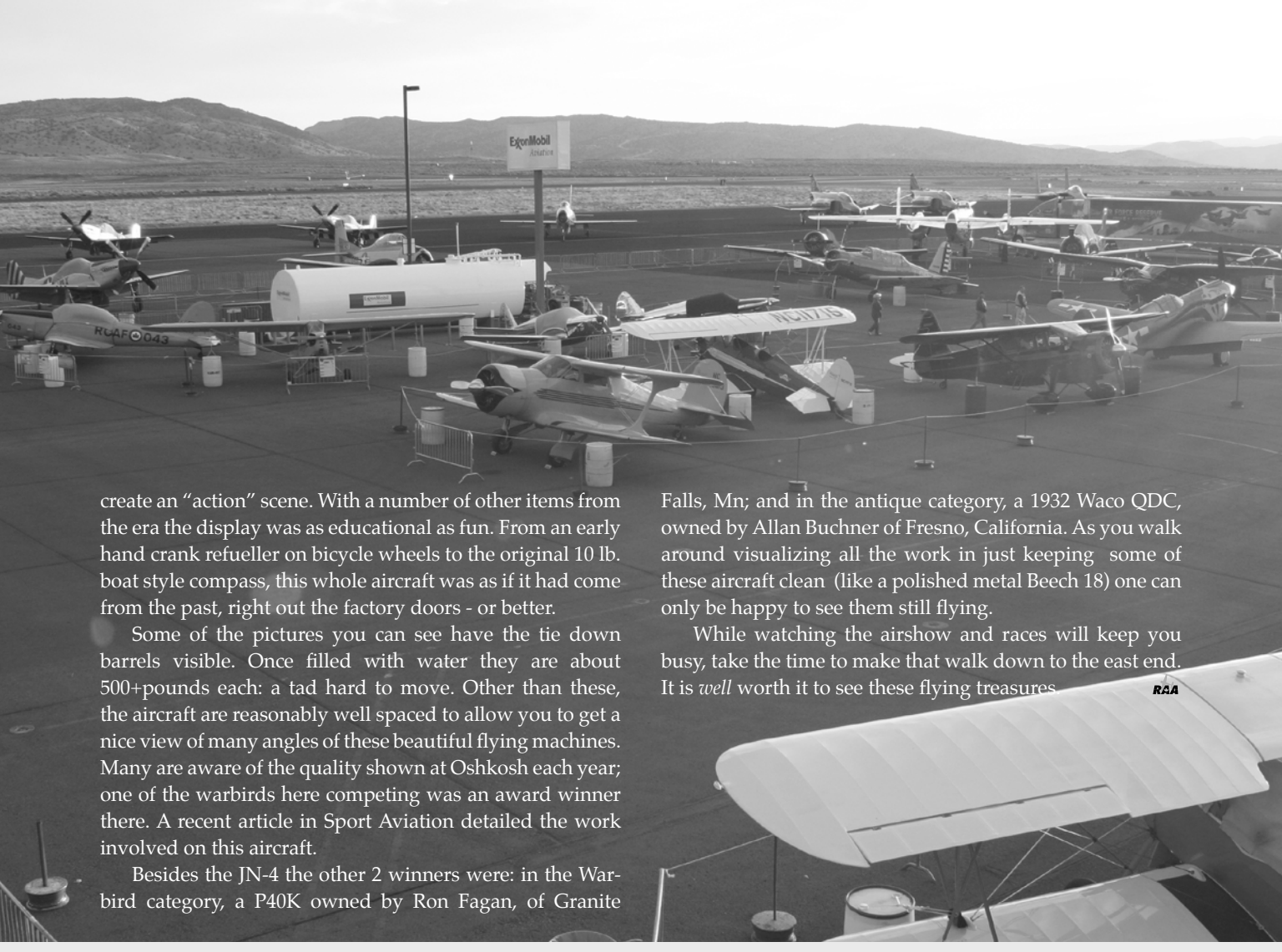


create an "action" scene. With a number of other items from the era the display was as educational as fun. From an early hand crank refueller on bicycle wheels to the original 10 lb. boat style compass, this whole aircraft was as if it had come from the past, right out the factory doors - or better.

Some of the pictures you can see have the tie down barrels visible. Once filled with water they are about 500+pounds each: a tad hard to move. Other than these, the aircraft are reasonably well spaced to allow you to get a nice view of many angles of these beautiful flying machines. Many are aware of the quality shown at Oshkosh each year; one of the warbirds here competing was an award winner there. A recent article in Sport Aviation detailed the work involved on this aircraft.

Besides the JN-4 the other 2 winners were: in the Warbird category, a P40K owned by Ron Fagan, of Granite Falls, Mn; and in the antique category, a 1932 Waco QDC, owned by Allan Buchner of Fresno, California. As you walk around visualizing all the work in just keeping some of these aircraft clean (like a polished metal Beech 18) one can only be happy to see them still flying.

While watching the airshow and races will keep you busy, take the time to make that walk down to the east end. It is *well* worth it to see these flying treasures. RAA

Barrie/Orillia Issues Mail Challange

The Barrie/Orillia RAA Chapter has for many years been responsible for the mailing of the Recreational Flyer. The standard Canada Post cost to mail a magazine (2006) would be $1.78 (+ GST). Due to the efforts of the dedicated volunteers who are required to label, bundle and bag the magazines as per Canada Post ever changing instructions the cost is approximately $.58 per magazine.

Prior to 2004, Heritage Canada subsidized the mailing through their "Publication Assistance Program" (PAP) to the tune of approximately 67 percent, which meant a mailing that would have cost RAA $917.66 was subsidized to the tune of $613.75, leaving RAA with a cost of $303.91 (1528 magazines). In 2004 the criteria for receiving the PAP subsidy was changed dramatically and the Recreational Flyer was no longer eligible for the subsidy. Currently a mailing typically costs around $700.00.(2006)

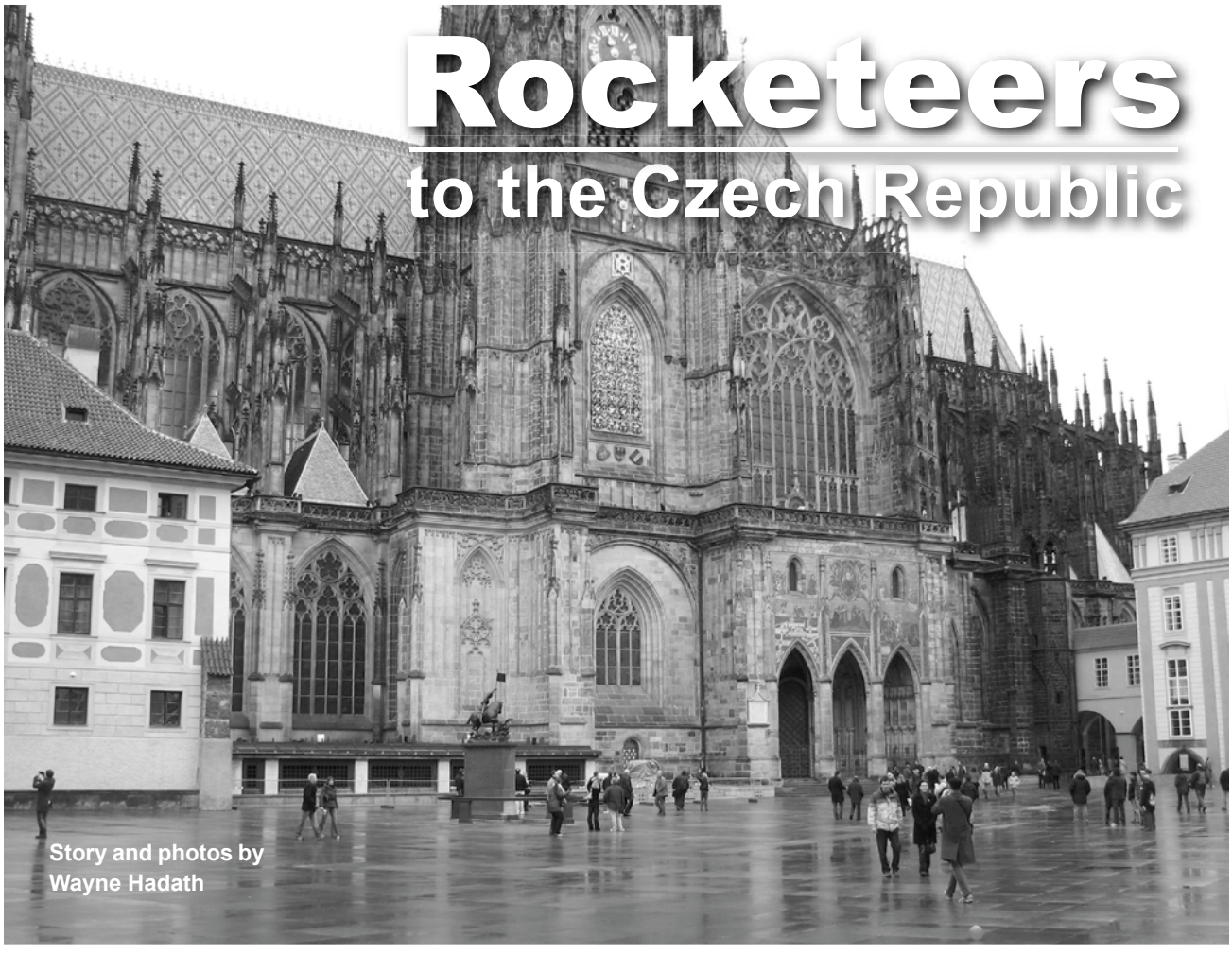
In light of this the Barrie/Orillia Chapter felt that if they would pick up the costs for one mailing and approach other chapters to follow suite, some of the financial strain on the coffers of the RAA National could be relieved. The Jan/Feb 2007 magazine mailing will be covered by Barrie/Orillia. The The Midland Chapter was approached and readily agreed to sponsor the Mar/April 2007 issue mailing.

We are hereby requesting your chapter consider following the examples above and undertake to sponsor one magazine mailing. Understandably not all chapters are in a financial position to do this, but out of the forty some odd chapters, surely there are some who could help.

RAA National was informed of the magazine mailing sponsorship program and offered a free page in the Recreational Flyer to sponsoring chapters in the issue they pay to mail to use as they wish including promoting their chapter with pictures of projects, past or present, social events etc.

Please contact Dave Evans at david.evans2@sympatico.ca or at 32 Newton Street, Barrie, Ontario. L4M 3N3 to reserve your chapters issue.

Rocketeers
to the Czech Republic



Story and photos by
Wayne Hadath

NO SOONER HAD WE RETURNED from the Rocket race in Texas, than Tom Martin called to ask if I would like to go to the Czech Republic to visit the factory that manufactures the F-1 and Evo airframes. Tom has built or been involved in 10% of the flying F-1 Rockets, and lately completed the first North American taper wing EVO, the plane he flew in the Texas event. I am the only private builder to have built an F-1 from parts, rather than from a quickbuild kit, and the factory was interested hearing builder feedback to improve their product. Tom and I were both curious to see how the Czechs manufacture their parts and assemble their quickbuild airframes. The factory was more than willing to help us with our curiosity as long as we were willing to help them gain a better understanding of who their customers were and what they wanted/needed. The offer sounded good to us, so the Rocket Boys booked their Air Canada flights to Prague.

We departed on a Monday evening during an ice storm and sat on the tarmac for 4 hours in Toronto waiting for de-icing and then a mechanical problem, and then waited again to be de-iced. This made a long trip a really long trip with the result that we missed our connection in Frankfurt, Germany. We had no way of contacting the people at HPAI (High Performance Aircraft I) who were meeting us, so they spend most of Tuesday waiting at the beautiful new terminal at the Prague Airport. Fortunately the Czech Customs clearance was the easiest I have ever experienced. They sure make a tourist feel welcome. We Canadians could learn something here.

The HPAI factory is located in the small rural town of Kralupy which has a population of 18,000 and is located 23 km north of Prague. The factory employs 25 people. Two of the people in the factory are Petr Varadi, Chief of design and the person with over responsibilities for the plant and Michaela Volsickova. Both were fluent in English and helped us with translations when hand signs, speaking slowly and pointing were not effective. Curiously the we did not find a single common word between English and the Czech language. But a pneumatic riveter is called a squeezer everywhere. The factory is owned by

Walter Maisch, a German industrialist with a fondness for high performance aircraft. He was briefly at the factory during our visit and we enjoyed a lunch meeting with Walter and his staff.

The staff was extremely welcoming and friendly. They patiently answered all our questions and demonstrated each of the machines, and were obviously proud of their equipment and the products they were able to produce. They have good reason to be proud because some of the processes, tooling and jigging were indeed very innovative. There seems to be a special bond between aircraft builders no matter their nationality or whether they are home builders or trades people. We are all looking for ways to improve and understand. It was fun discussing the skill of operating a rivet gun or the finesse of holding a bucking bar. It was neat watching skilled builders used special hand fashioned tools to tune a jigged wing frame before installation of the skins. The sharing of lessons learned in building of an aircraft by both sides made the long trip very worthwhile.

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The HPAI factory is filled with high quality equipment for the production of tooling and parts. The Czechs are justly famous for their machine tools and this factory has a good selection. There were CNC brakes and shears, milling machines and lathes, and a very specialized CNC pyramid roll for producing leading edge skins and other unusual shapes. Two large presses, one at 800 tons, are used to stamp out ribs and other parts. For complex shapes like wing ribs, HPAI processes the 2024 material in the O condition (full soft) and then heat treats, followed by a coining operation if necessary. The result is ribs with smooth flanges that are not fluted. All of the formed parts are of a very impressive quality, and tolerances are checked on a ground and polished granite surface plate. Many of the assembly fixtures have a machined base to ensure accuracy of fit. The staff is very competent and work together to maintain the standard of build for which HPAI has become well known. Among their product line are parts and assemblies for the ME 109, P63 King Cobra, FW 190 & Stewart Mustang, and of course the F-1 and EVO Rockets. HPAI designed and engineered the wing for the EVO and built the exacting fixtures to produce the 2 degrees of washout required by the tapered wing. As well, they made the tooling to form the double curvature one piece aluminum wing and aileron tips.

There are always secrets at an aircraft plant, and HPAI is no exception. Their skunk works is looking into the future, and they were willing to take us into their confidence. I wish that we were able to tell all, but we did promise to keep secret most of what we saw. One of their non-secret proof of concept projects is well past the drawing board phase, and should be flying this summer. This is the new side by side M1 Speed Cruiser, which answers the question that many have been asking. A new wing similar to the tapered EVO wing has found a new home on the M1. This all aluminum plane has a 45" wide cabin with generous luggage space. The prototype is a taildragger but the fuselage has been laid out for easy conversion to a tri-gear. The M1 has a top speed of 230 kts, a cruise of 210 kts, and a useful load of 800 lbs. The engine options for this plane will include the 540 Lyc, a diesel, a turbine, and even the MP-14 radial. The

Tom Martin checks out an EVO wing skin

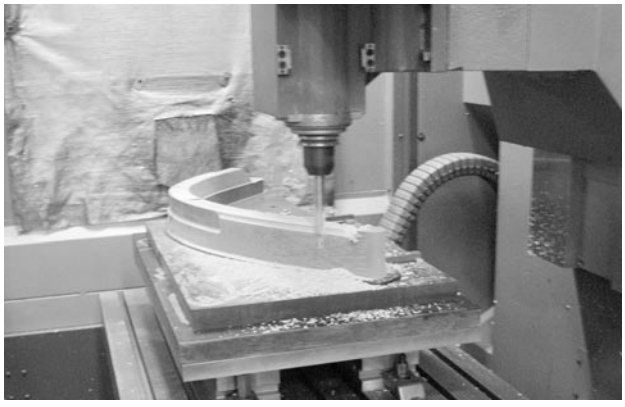
Wayne Hadath inspects the flush riveting of the EVO wing. The Czechs are known for their quality aviation work.

website http://www.hpa-international.com/index.html shows a lot of drawings, photos, and specs of the M1 Speed Cruiser, and other planes and parts that HPAI manufacture.

Tom and I stayed in a local hotel and enjoyed the food and local pilsners. Kralupy is a small town but it is host to a lot of manufacturing plants. Despite this, we found no slums in Kralupy or Prague, or even in the surrounding countryside. The people are friendly but cautious, and were aware that we were not locals. We thought that we fit right in but we were told that we walk differently and have different mannerisms. The fact that Tom had a large Canadian Flag tattooed on his forehead might have been a tip-off too.

The restaurants were definitely not fast food places. The menus ran to many pages and every dish looked as if it had been prepared from scratch. Most of the food I recognized but with some difference. Soups were a thin broth. I had garlic soup for the first time and found it delightful. What we would serve as a thick soup or even a stew was serve on a plate with dumplings which had been sliced. This thick soup or stew could be served plain or with different slices and types of cheese. Many of the meat meals were served with sliced or cream cheese and sometimes with different fruits. The use of salt is a lot more than I have experience in Canada. A lot of the bread has salt crystals spread on top. On the other hand sugar seems to be used far less.

It seems that sports and fitness may be very important to the Czechs. In Kralupy I saw a large swimming and tennis complex next to the hotel. There were many soccer fields or football fields as the Czech called them. The town had its own indoor cycle



track and hockey arena. Bowling seems to be a very popular sport here in the Czech Republic. Two of the restaurants we were in had their own bowling lanes. Both Michaela and Petr were avid bowlers and from what I could determine, very proficient. The Czech diet and physical activity may explain the fact that I did not see one example of obesity while in the Czech Republic. Sadly it is not so here in Canada. Smoking is a habit that the Czechs have embraced enthusiastically. It is expensive and it seems that the choice is either Marlboros or Czech cigarettes. Smoking seems to be allowed most places but there are non smoking areas and non smoking restaurants.

Tom and I left Kralupy Friday afternoon to spend time in Prague before returning home on Sunday. We found that the hotels were incorporated into other buildings, and we did not recognize any chains. Prague is a very old city without any skyscrapers. It is exceptionally clean and in absolutely great repair. The streets are stone, and there must be a vast infrastructure under this old city. All of the eaves troughs go under ground and disappear.

The city of Prague is in such good repair and so beautiful that the only way I can describe it is to compare it to the product of some theme park designer, Walt Disney or such. Yes, McDonalds is there but we did not see any other fast food chain. We saw very few policemen and those we did see were involved in managing parking violations. Even though it was the middle of January the city was full of tourists. Not jammed but full. Who knows what this city looks like in full blown tourist time? There were plenty of shops featuring jewelry, crystal, crafts and women,s footwear, and it was aimed at the high end market. This time of year the shops were not full by any means but they all looked prosperous. Prices in Prague would be comparable to Toronto.

There is a lot to do and see in Czechoslovakia. Most of it is free or at least inexpensive. Too bad it is so far away, I sure would love to take my family.

Tom and I would like to thank Walter, Petr, Michaela and all the fellows in the plant for their hospitality and their willingness to ask for customer input to improve their product.

Top: In-house CNC machining of phenolic form tooling for a contract part.
Below: The Crew. Can you spot the Canucks?

AeroConversions Aero-Carb

Owen MacPherson RAA 3498

WHAT WOULD YOU THINK of a carburetor which can operate without fuel pumps, has only two moving parts, is highly resistant to icing or fuel supply blockage, has an effective mixture control, can be used in inverted systems and cost (new) around $455.00? Such a thing does exist. It is an Aero-Carb from AeroConversions, the same folks who brought us the Sonex.

The Aero-Carb is essentially a POSA-style slide carb. The slide carb is an ancient device (one having been recently found in an excavation near Stonehenge). It is a simple fuel/air metering unit consisting of an orifice/needle combination for fuel regulation and a slide (which carries the needle) for air metering. In its most common form there is no float bowl, low-pressure fuel is simply supplied directly to the orifice. There have been a number of variants of the basic design including the POSA, the Super Carb from HAPI, the RevFlow from Revmaster and most recently the Aero-Carb.

AeroConversions has done a good job refining their slide carb design. The throttle and mixture cable ends are secured directly to the carb body whereas in previous designs this was not the case. This necessitated fabrication of brackets to mount the cable ends and introduced unnecessary complication.

The method in which the Aero-Carb's needle is affixed to the slide keeps the needle in precise alignment to the orifice for more consistent fuel metering. Needle problems in early slide carbs led to engine failures. The Aero-Carb design looks robust and simple.

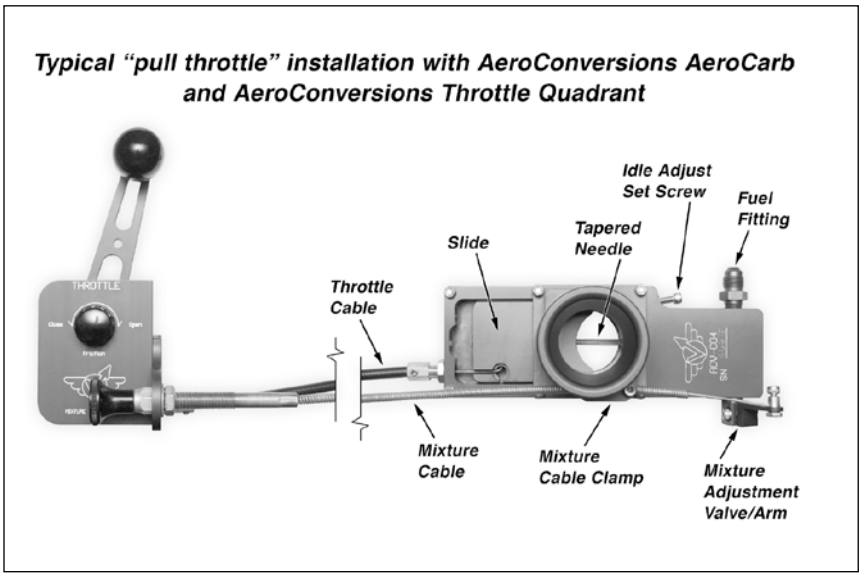
The fuel supply accepts a 1/8" male NPT fitting allowing more installation options than some earlier slide carb designs. This makes it easy to run a 3/8" fuel line right to the carb to satisfy even the most demanding MD-RA inspector.

Fit and finish are excellent and the installation manual is complete and well illustrated.

Aero-Conversions support of this product has been exemplary. My phone and email requests have all been promptly replied to. For several years after my purchase I was receiving service bulletins by mail (although I have not received any recently). The Aero-C onversions web site lists service bulletins in plain view, a feature I would like to see on all supplier's web sites.

Flying the Aero-Carb

For those of you who have been around a while the word POSA may evoke certain emotions. An accomplished home-builder once seriously suggested I destroy my POSA so that it would not fall into the hands of another (unsuspecting) builder. In fact this was not even the least favourable comment I heard about the POSA-style carb back in 1998 when I was installing my engine. Despite the bad reputation, I was committed to the design for reasons other than my limited capacity to accept change.



After over 300 hours flying (and many hours of testing) with 2 different POSA-type carburetors I have come to the conclusion that these carbs, and the Aero-Carb in particular, are a good option in many installations.

Notwithstanding the above all the POSA-type designs share certain limitations which (due to the unusual design) are unique. This carb works differently than the conventional carb and has its own set of operational requirements. Here (in no particular order) are some of my experiences in hopes they may be of assistance. Please note that the following are the results of testing/experience with one aircraft. Significant differences in configuration will likely yield different results.

Carb Icing

Without a venturi or butterfly valve the slide carb seems almost impervious to carb ice. However I am fairly certain I have experienced this phenomenon once. Since my engine is equipped with effective carb heat, which was used promptly to clear the problem, I can not say whether it would have progressed to a serious level. I can say that, at the time, I was mildly pleased with my decision to install carb heat.

Fuel Pressure

Lacking a float bowl, these carbs are quite sensitive to fuel pressure variations. In the simplest fuel systems (no pump/regulator) the venting of the fuel tank can make a big difference in mixture consistency.

Fuel pressure to the carb must be maintained within tight tolerances. As odd as this may sound, it is possible to for a fuselage mounted header tank (without a pump) to supply too much pressure to a POSA-style carb. Concerned with potential low fuel pressure problems (inherent in my aircraft's design) I never considered the possible effects of excessive fuel pressure. Nor did I consider installing a fuel pressure gauge. Now I know I'm no rocket scientist but really, who would consider putting a fuel pressure gauge in a simple gravity system? We are taught to use fuel pressure gauges to monitor the performance of fuel pumps. Low fuel pressure means a possible failing fuel pump and corrective action would involve turning on the backup pump. In my aircraft gravity is the fuel pump. Now let's think about this, if gravity should suddenly fail, do you honestly care what your fuel pressure is?

In my case the "culprit" turned out to be the fuel tank vent. Facing forward, high above the cowl line (a seemingly ideal location) after take off it was pressurizing my tank sufficiently to affect the mixture. A simple alteration to the tube prevents ram air from pressurizing the tank and mixture remains much more consistent.

Adjustment

The POSA-types require periodic adjustment of the metering needle (and possibly a high end throttle stop). An EGT gauge should be considered mandatory for this procedure.

These carbs must be adjusted to provide a correct mixture at full power. This is achieved by turning a screw which moves the needle in or out of the orifice for a given slide (air) position. The common method involves adjusting the needle to produce a full power full rich (cockpit adjust) mixture EGT reading at least 100 deg F below peak EGT. You should then be able to use the cockpit mixture control to lean to peak and reduce EGT back to this 100 deg below peak mark. This is all the adjustment available on this carb other than the idle speed stop.

Temperature

Large changes in temperature have an effect on mixture. In my experience, a drop of 15 deg C necessitates a needle adjustment.

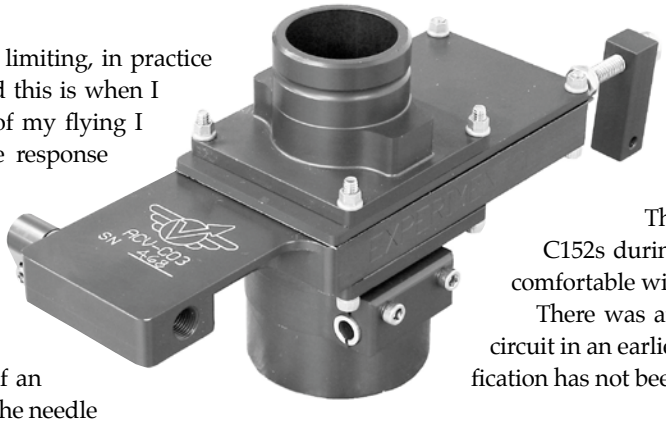
This is especially noticeable on the first cool fall day. A needle setting which has worked well all summer suddenly causes the engine to run lean at full power. I now automatically back-out the adjustor screw ½ turn after a big temperature drop. If the adjustment is more than required the cockpit mixture control easily compensates until the next adjustment opportunity arises. To facilitate this procedure I installed an access door in my cowl.

It is interesting to note that Edelbrock, a company well known for aftermarket performance products, used to offer a slide carb for Harley Davidsons. Their design incorporated a remotely adjustable needle. While the utility of this feature would be desirable the additional complexity in the device to support it would not.

Throttle Response

The carb should not be expected to respond to rapid throttle increases as well as a conventional carburetor incorporating an accelerator pump.

While this may sound limiting, in practice the only time I have noted this is when I was testing for it. In all of my flying I have never found throttle response lacking.



Basic design

An important difference between a POSA-type and a conventional carb is the former's lack of an idle circuit. The profile of the needle is critical here since we are only able to adjust the needle for full power. If the needle profile is incorrect for the engine, operation at other power settings may be rough.

A common complaint with this type of design is that the mixture can be set up at one end of the power band but will be off at the other. I find my mixture, once set for full power, is rich at idle. I simply use the cockpit mixture control to compensate while taxiing. This tactic was quite common with C152s during my early flying days and I am comfortable with it.

There was an attempt to create a type of idle circuit in an earlier slide carb design but that modification has not been used for years.

The POSA "burp"

I hesitate to mention this final item for fear of being branded superstitious but I feel compelled to do so because, while I can't explain it, I know its there (I also wear an aluminum foil beanie while sleeping).

An Interview with John Monnett

The following is a transcript of an interview with John Monnett, founder of Sonex/Aeroconversions. Mr. Monnett was inducted into the EAA Homebuilder's Hall of Fame in 2001 and his designs are on display in the Udvar-Hazy National Air & Space Museum and the EAA AirVenture Museum.

Rec Flyer: We know the slide carb design has been around a long time and seems to have garnered a bit of a reputation. What made you choose to stick with the design going forward?

John Monnett: Most of that reputation is unwarranted, usually by people who don't understand the carburetor. The basic slide carburetor design goes back all the way to the LeRhone rotary and the concept is pretty sound. Basically it's a simple metering device. I was the first to fly with a Lake injector carb in 1971 and I've been sold on that type of carburetor for a long time.

Rec Flyer: You have switched from a Delrin slide in the earlier models (of the Aero-Carb) to an aluminum version. Can you provide some insight for the change?

John Monnett: That was simply due to some fellows over-torquing the needle set screws, stripping out the Delrin threads. So we replaced it with an aluminum slide. Some of the other improvements we have made include a Derin gasket on the engine side of the carburetor because there's a lot of suction on it. We have also adapted the carburetor for a pull carburetor so it can be set up either with a push cable or a pull cable and that's the preferred way to do it.

Rec Flyer: Any insight into what's coming up next at AeroConverions?

John Monnett: There's a lot in the mill. We are constantly improving the conversion and probably by the time you get to press we're introducing our own ignition system. It's a replacement for the secondary ignition we now have and is a much more efficient unit with higher power to the coils. It's going to be pretty neat and eventually we're going to have a trigger device that has an automatic retard feature allowing individuals without starters to start on the electronic ignition which has a lot hotter spark.

Rec Flyer: The Aero-Carb seems pretty well matched to the VW/Jabiru type of engine. Any unusual engine installations you could tell us about?

John Monnet: Right now we have hundreds and hundreds of them out and there's so many different applications from Rotax to 160hp Lycomings and of course the smaller Continentals. Eventually we will have even bigger carburetors and some interesting developments along the way.

Rec Flyer: To sum it up could you give us an idea of the number one error you see in the installation of the Aero-Carb?

John Monnett: The number one error is not following the installation manual and not having an adequate throttle cable. That's why we have developed our own Throttle Quadrant. That eliminates about 99% of the problems.

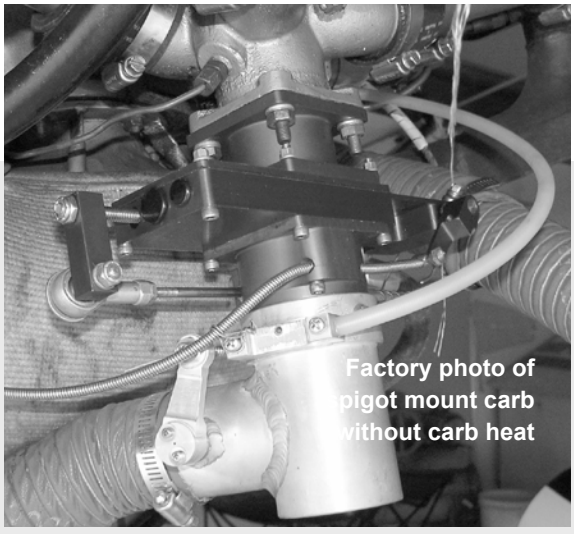
In normal flight it is possible to lean the engine quite aggressively with the cockpit mixture control. In all the factory-builts I have flown the engine simply becomes rough with over leaning and so will my Aero-Carb equipped VW. There seems however a lean mixture setting which will not immediately exhibit rough running but cause the engine to, for lack of a better description, skip a beat. This then causes all sorts of other strange beating noises in the cockpit.

The miss seems to occur whenever the engine is leaned very close to or past peak EGT. I have never seen it happen when leaned 100 degrees or so below peak and there I stay, happily.

The Aero-Carb has been delivering fuel to my engine for more than 300 hours now over 5 years.

In an age where single lever FADEC systems are coming into the GA mainstream the slide carb may seem more like an FFFMS (Fred Flintstone Fuel Management System). But for those of us who value simplicity, robust design and reliable operation the Aero-Carb offers a viable solution.

For more information check out www.aeroconversions.com.



Factory photo of pigot mount carb without carb heat

GERRY YOUNGER, eight times Canadian Aerobatic champion, is an RAA member who has installed an Aerocarb on the O-200 of his non-certified clip wing Cub. This engine has an inverted oil system good for 20 seconds, and a flop tube in the fuel tank. He was looking for a carb to replace the original Marvel Schebler, and took Owen's advice to try the Monnett Aerocarb. The 2005 price of about $350 US was attractive, so he ordered one. There was a questionnaire to fill out first, so that the manufacturer could determine which unit to supply and which mixture needle to install.

The Aerocarb arrived complete and in good shape. Included were 3 mixture needles, with the one recommended for the O-200 already installed. The O-200 model is manufactured with a 4 bolt flange mount that is a direct fit to the O-200 intake manifold.The manufacturer says that carb heat is not required, however Gerry machined and welded his own carb heat box with a close-fitting butterfly just over 2" diameter. This is operated by a cable and lever. Gerry has two reasons for preferring carb heat. In cold moist weather, when performing a touch and go, the engine may balk a bit when the throttle is opened. With carb heat applied, this does not happen. Gerry also used the carb heat as a mixture control for very cold days when the air is dense and the engine tends to run a bit lean throughout the whole range, Gerry just applies a bit of carb heat to reduce the air density and correct the mixture. Until he does this, cold day EGT's will be on the high side, and pulling carb heat will lower them to the acceptable range. This is a nice feature, however he recomends a seasonal adjustment, as per manufacturer's instructions (it only takes 1/4-1/2 turn of mixture adjust screw). Gerry says that an EGT&CHT are essential to get a good setup with the Aero Carb. He does not really trust the actual EGT number; he just leans until the temperature reaches the maximum figure, then enriches by 50 degrees Fahrenheit.

Gerry has been very pleased with the Aero Carb as installed on his O-200. He uses the following starting and shutdown procedures, and recommends that a checklist be used:

-Startup: fuel off, mixture to idle cutoff, throttle closed. Ignition on left mag, master on. Crack throttle, fuel tap on with mixture full rich. Hit the starter button immediately, and the engine will fire immediatley. Go to both mags, and set rpm with throttle.

-Shutdown: Stop engine by pulling mixture lean with idle cutoff. Immediately shut the fuel tap off, as the carb may tend to dribble if fuel is left on. Mags and master off.

RAA, COPA AND CASARA Sponsor Winnipeg Recurrency Seminar

January 25 Winnipeg Man Recurrency Seminar/Rust Remover sponsored by RAA-COPA-CASARA: Refresher Course for Pilots and Aviation Enthusiasts held at CASARA at St. Andrews Airport. Starts at 7 pm everyone welcome. Bring your RAA, COPA, MUA, CASARA etc dues as membership dues will be collected for all aviation organizations present!! Pete Firlotte of Transport Canada and Aaron Doherty of Harv's Air Service. Topics will be: "What's New for Safety in 2007", "An AccidentRecap for the Past Year" and "Other Frequencies Used In and Around Winnipeg and St. Andrews". THANK YOU Aaron + Pete!

February 10 Winnipeg Man. - RAA English Wheel workshop - there's room for about 5 more registrations - contact jill_oakes@umanitoba to register. THANK YOU EARL CALVERLY for agreeing to do the demo!

Downsview Symposium to Celebrate History of Famous DHC-2 Beaver Bush Plane

TORONTO - On Friday, May 25, 2007 the Canadian Aviation Historical Society (CAHS) and the Toronto Aerospace Museum (TAM) will host a full day historical symposium at Downsview Park, Toronto celebrating the famous de Havilland Canada DHC-2 Beaver aircraft and its pioneers.

The Beaver is considered Canada's most successful aircraft design and was recognized in 1986 as one of the top 10 Canadian engineering achievements of the last century. The Toronto Aerospace Museum building is the original birthplace of the prototype Beaver, CF-FHB-X, which made its first flight at Downsview on May 16, 1947. Sixty years later, the Beaver is still in widespread commercial use in northern Canada, the Pacific Northwest and Alaska.

The Symposium program will include a slide show on the Beaver and presentations by former de Havilland test pilots, salesmen and engineers; and panel discussions featuring Beaver pilots, mechanics, owners, operators and re-builders, past and present. Anyone with an interest in the Beaver and Canadian aviation history is invited to attend.

The Beaver symposium comprises the second day of the CAHS national convention. The CAHS is Canada's oldest and largest aviation heritage organization, established in 1963.

The symposium is being held a day prior to the Toronto Aerospace Museum's 2nd annual Wings & Wheels Heritage Festival at Downsview Park on May 26-27, 2007. The festival includes a fly-in of dozens of vintage and modern aircraft at Downsview and a rally of hundreds of classic cars, motorcycles and military vehicles. This year's Festival will feature a 60th anniversary homecoming of Beaver bush planes and between 10 and 20 are expected to be on public display at the museum site Downview Park.

Pilots will be able to fly in to Downsview airport to attend the Beaver Symposium and Festival. Advance reservations are required to land at this private airport, which is used by Bombardier Aerospace to flight test new Q-Series Dash 8 airliners and Global business jets. The Beaver symposium is the fourth organized by the Museum and the Toronto Chapter of the CAHS to highlighting Toronto's role as an leading aircraft manufacturing centre. The DH 98 Mosquito fighter-bomber was featured in December 2004, the Avro Lancaster bomber in May 2005, and the DHC-1 Chipmunk trainer in May 2006.

In October 2006, the museum celebrated the 49th anniversary of the rollout of the Avro Arrow with an unveiling of its own full scale replica of the Arrow, Canada,s first supersonic aircraft. The replica Arrow and the museum's Avro Lancaster Mk X restoration project will both be on view during the Beaver Symposium.

For further detail on the 60th Anniversary DHC-2 Beaver Symposium, the CAHS National Convention, or the Wings & Wheels Heritage Festival, visit these web sites:
www.cahs.com and
www.torontoaerospacemuseum.com
Ken Swartz
Toronto, Ontario Tel 416-836-7094

Zenith Gathering

Dear fellow Zenair CH200/250/300 owners,

We are planning a Zenair CH200/250/300 Fly-in on May 19-21 at the Brampton airport, Ontario, and we want you to join us! Brampton was selected for its capacity to accommodate a fairly large gathering and for its facilities such as BBQ, tie-downs, clubhouse, hangar, etc. We are pleased to coordinate with the local chapter of the RAA and the Brampton Flying Club who have kindly offered their support. Brampton is also home or central to several Zenair owners.

Come and celebrate with us your passion for your airplane and for aviation!

We also want to promote participation to the Yahoo CH200-300 builders/owners group on the Internet. This forum is an absolute must for builders and owners to exchange technical information, operating experience, problems, resources and just good flying stories! There is a wealth of information in our community that we can all benefit from. Sign up at the following address: http://groups.yahoo.com/group/CH200-300Builders/ I also encourage all members to use the email notification feature of the Group so that any posting also gets sent to your regular email address. This way, you keep in touch with any activity on the forum and can reply to any posting through your regular email, without having to log on to the Group. What you need to do:

-Join the Yahoo Group, and indicate your participation to our Fly-In in Brampton, May 19-21. We also welcome any suggestion for activities that you would like to see and/or help organize.

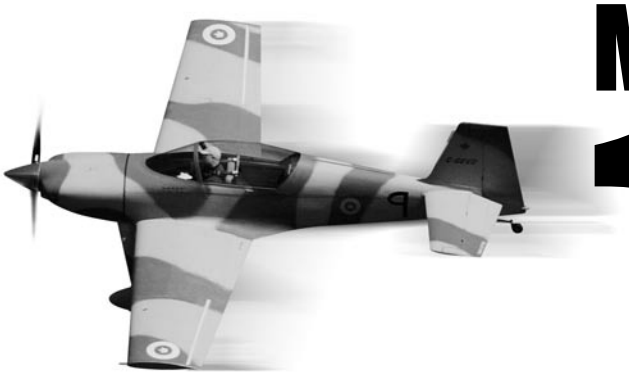
Or: Send me an email at pierre12@magma.ca indicating your intention to participate to our gathering, with your name, phone number & airplane registration.

Or: Call me at (613) 687-0037.

We will post updates on the Yahoo group and send email notifications should there be any changes. We are looking forward to seeing you at Brampton on May 19, 20 and 21!

Happy Flights To All

Pierre Tanguay CH300 C-FNQI Petawawa, ON



Macho Grande 100

A PLACE WHERE MEN ARE MEN AND ….well it's Texas where everything's done big and as I learned fast, really fast.

The F1 Team Rocket Corporation over the years has held a barbeque at their facility just outside Taylor (T74), Texas. Its long grass strip, copious amount of aircraft parking, several large hangars, traditional bunkhouse and Rocket building facilities are opened every year to all visitors from far and wide.

This year's open house and fly-in hosted by Mark and Cheryl Fredricks included an invite to race a 100-mile triangular course, open to all aircraft type and make. The coordinates, pictures, and an outline were posted on the Team Rocket site to help pilots prepare and to help lure potential racers.

It didn't take me much fishing (having 2 friends with big egos and fast Rockets,) to hitch a ride to Texas. Tom Martin with his New Evo Rocket had the pleasure of carrying myself (with my superior navigational skills that was put to the test on the trip home) and my luggage (all 5 lbs) went with Wayne Hadath in his traditional F1 Rocket.

Leaving St. Thomas Municipal with 1000 foot ceiling we zig zagged our way into Texas airspace. Spectacularly, the skies over Texas were a clear deep majestic blue and the brushy landscape gave way to patches of oil fields interspersed with sprawling ranches. It was hot. Did I mention it was hot, really hot! How could it be so hot this late in the afternoon? Getting into Taylor late would mean there wasn't enough time to get a trial run of the course or even familiarize ourselves with the starting line. The staff from Team Rocket transported pilots all day long from Taylor Municipal delivering them to the Macho Grande airfield where hostess Cheryl Fredricks greeted all pilots with a tradional fajita dinner.

Surprisingly cold weather had moved in over night and groups of racers, dressed in winter attire, had already started to gather at Taylor for fuel, to remove extra weight, tape over gaps and make any other speed mods they had lost sleep over that night before. A race briefing outlined the 100-mile course marked by large water towers, the white ones, not the blue ones. The start line would be over the Macho Grande strip a few minutes away. The aircraft would depart Taylor in 3-minute intervals (fastest to slowest). All pilots were reminded that safety was foremost and all aircraft operation and navigation rules applied at all times.

As part of the official timing crew we hustled over to the starting line and waited for the start. Within minutes the first aircraft passed over the starting line. One after another the planes passed over. Some with low accelerated starts and some taking higher starts perhaps having local knowledge or betting on winds aloft. After the final aircraft passed over the starting line, the timing crew raced to the finish line and met up with the marshalling crew. In the cold wind all waited in anticipation for the results. Much like a horse race, everyone verbalizing their bets. The air was tense and serious.

Out of the clear blue sky the first plane could be seen as he jockeyed toward the finish. It was a Rocket, travelling at a speed that was unfathomable. The crowd waited, had all the pilots found the towers? Who would be next? Then spotted over the trees another plane, a Lancair. Beyond that, two more rockets and then to our surprise came an aircraft that finished on the wrong side of the tower. At that point Mark Fredricks remarked humourously "this is a little like herding cats". After it was over, some 21 pilots had put their aircraft through the course and bragging rights were to be had.

All pilots returned to Macho Grande to await their results and to feast upon a real old fashioned Texan barbeque. First place went to US air force pilot Greg Nelson also a veteran at the Reno Air Races. Second place in class went to Tom Martin at an average speed of 236.24 mph and a close third was awarded to Wayne Hadath.

The cowlings came off and pilots weren't afraid to show their secrets from supercharging to wheelpant

Aircraft	Pilot	Speed MPH
F1 Rocket	Greg Nelson	248.01
F1 Rocket	Tom Martin	236.24
F1 Rocket	Wayne Hadath	229.18
F1 Rocket	Ray Edministon	228.78
F1 Rocket	Wolfgang Meyn	213.12
Lancair	Larry Henney	240.37
Glasair II	Don Saint	227.48
RV-8	John Huft	216.01
RV-6	Robbie Attaway	203.3
RV-6	Mike Thompson	201.28
RV-6	Damon Berry	198.08
RV-7	Kevin Jackson	195.65
RV-6	Bob Japundza	194.69
RV-7A	Jum Hard	163.47
RV-3	James Hogue	181.81
Glastar	Mark Kiedrowski	139.89
Bonanza	John Albury	191.33
Bonanza V35	Jim Huff	190.14
Piper PA24	Terry Wills	180.09
Bellanca SV	Dewy Elsik	164.35

skirts. The afternoon finished with a formation air show for the US Veterans' Day Ceremonies. At times of uncertainty in the world it felt good to see old friends and to make new ones and enjoy a sport that is as much about sharing and friendship as it is about building and flying. RAA

BEWARE of VERBAL APPROVALS

A brief note here to let people know that verbal approvals are not worth the paper they should be written on.

A gentleman in southern Ontario spent many years restoring a WW2 training aircraft to C of A status. His workmanship appears quite satisfactory.. He worked for many years under the supervision of a very well known AME in the Toronto area.. This AME would nod his head in approval and say to go ahead with more work. Some of this work involved the closure of box sections where subsequent inspections are not possible. With the project well underway with lots of verbal approvals the subject AME passed away quite suddenly, a grave misfortune not only to this aircraft restorer but to all of aviation in Southern Ontario.

The aircraft restorer now has a dilemma on his hands. He has no written approval for any of his work and words from the grave carry very little weight with the authorities.

Owner maintenance was suggested to him he rejected this proposal. The amateur built category seemed to be the only logical solution, with the 51% appraisal being well and truly met.

Unfortunately the same problem as before has arisen. No box section inspections have been recorded. Not a scrap of paper anywhere, not even a signature on the assemblies said to have been inspected and approved with the nod of the head. What will happen to this project? We really do not know at this time but it is not beyond the realm of possibility that it could become a very nice museum piece.

The moral of this story is that if you have a part inspected that is impossible or difficult to inspect after assembly, have the inspector sign a piece of paper, whether an official piece or not.. Even a signature on the structure itself is better than nothing.

Just remember, none of us know how long we are destined to be on this earth and any of us could leave at anytime without notice. Knowledge in the grave will not help you one iota!

Bill Tee

President's Message (continued from page 2)

days, and it can take a year before a tower appears on the new chart. The recent Industry meeting with Transport in January brought forth the news that this ambiguously written reg had been dealt with back in June 2000, and the revised wording makes it clear that any plane with an airspeed indicator, an altimeter, and a compass can use the airspace. However the revision has been sitting in an inbox at Justice for seven years, and no one, and certainly not the UL community, has thought to give them a push. Immediately after the January meeting, RAA Canada began the process to get this revision of the regs moving forward and into common knowledge.

It is interesting to note that in the past 25 years, not one UL pilot has ever been violated for having flown in Class E airspace. I tried to get myself charged for this by flying in the Class E and making the calls at 1500 ft to come back into the CYKF zone. The calls are on the tower's recorder and I was on radar, but NavCanada and Transport refused to lay a charge. Too bad, it would have made a good test case. However when I did this last summer I did not know that the revision had already been made to the reg. At the January meeting it became clear why Transport was not interested in UL's and Class E.

BARRIE ORILLIA RAA CONTRIBUTION

Our Barrie Orillia chapter has very dedicated members. These fellows handle the organization of every issue of the Rec Flyer to obtain the best mailing rate for our members. The Barrie Orillia fellows are now issuing a challenge to all RAA chapters. They are paying the mailing costs for the next issue of the Recreational Flyer, and they are challenging each chapter to do the same. Thanks fellows, for all that you do for our members.

STATUS REPORTS

Most chapters have by now had their annual chapter elections. Please update your status reports with Marina at the RAA office to retain your seamless insurance coverage under the RAA's Chapter Liability Policy. If your chapter has not yet sent in its 2006 donations to assist with the cost of the policy, now is the time. 2007 is here and the premium is due.

RAA WEBSITE AND EMAIL FORUMS

We have been having some difficulties with the RAA website, and the email has been interrupted by the collapse of the relay tower during a winter storm. If you have been emailing to raa@zing-net.ca and have not been receiving and answer, that is the reason.

By the time you read this, the problems will have undoubtedly been corrected. Please then go to the www.raa.ca website and register for the RAA's Announce and National email forums. There will be a lot of time-sensitive information to go out this season about the AGM and AGM, also about changes to the regs, and these forums are the best way to receive the news. If you are having difficulty registering, just send an email to garywolf@rogers.com and it will be handled for you.

When often asked how much it costs to learn how to fly, we have just as often replied...."About a hundred bucks. Learning how to land will cost you $7,500.

When in doubt, hold on to your altitude. No one has ever collided with the sky.

Across Canada

RAA Chapters in Action

Niagara Members Charlie Boudreau, Ben Bartell, Dave Gladman, and a guest look at the Stinson, Tiger Moth, and a high altitude relay aircraft, used as a telephone link.

RAA Niagara

Seven RAA Niagara members drove through the January snow to the Toronto Aerospace Museum at Downsview Airport in Toronto. This was the original home of the DeHaviland Company of Canada, and the building is now filled with historic aircraft, some restored and some under reconstruction. The copy of the Avro Arrow is massive, and an interesting subject to study. I used to work for the company that forged the turbine blades, so it was especially interesting for me.

The restoration shop is well underway with the Lancaster that used to be mounted on a post at the Toronto waterfront. They are in full swing, but many more man-hours are needed, and volunteers are welcomed.

The displays include Chris Heintz,s original CH200 pro-

totype, and a very nicely restored Stinson with perfect rib-stitching. The old aircraft factory,s machine shop is there and it is humbling to consider the close tolerances the machinists held on such simple machines. . Our museum visit was followed by lunch and a trip to the new Aircraft Spruce "candy store." We had a good time, as friends have when they share a common interest.
Len Petterson

Oshawa Chapter

HAWKE FIELD - September 7, 2003:That was the place and the day when Ross Ferguson's magnificent replica Spitfire was publicly unveiled. It was our 8th annual Barn Yard Fly-In, one that many visitors and members of Oshawa District RAA members will remember in the years to come. A "tip of the hat" goes not only to Ross but to Fly-In Chairman Wayne McCarron, the Fly-In team leaders and the hard working group of members, assisted by some wives and several COPA members. They took our annual Barn Yard Fly-In to a new level this year and the weather cooperated.

Our Fly-In log lists 117 aircraft lining the aircraft parking area at Hawke Field, among them two replica Spitfires, two gyrocopters, a helicopter, and at least a dozen show quality homebuilts, war birds and restored aircraft along with the many other homebuilts, certifieds, ultralights and trikes. A powered parachute arrived by car but as the day wound down there were so many airplanes still to leave that the pilot decided not to fly. Seeing so many planes was a great site but to me the most satisfying part of it all were the comments from visiting pilots as they were preparing to leave. Several praised both our hosts, Karen and Hannu Halminen for the beautiful site they provided at Hawke Field, and the daylong dedication and enthusiasm of the chapter's "on field" crew - from our eagle eyed radio staff with their new base radio in their new tower and the marshals with their new fluorescent paddles who guided the planes to their parking area, to the members who had the sometimes difficult job of pushing the planes back into their parking spots.

"It was the best ever," said one pilot. Others asked where we found so much good help and several mentioned the new feature this year – runway markings painted on the grass by Reg Gardner and Rudy Riss which were highly visible from the air. Reg also supplied the radios that kept the ground crew in touch with each other.

Help Kinettes Projects

Everyone seemed to enjoy the free corn, and food thanks to the Kinettes of Bowmanville. And we can feel good knowing the proceeds will help finance the Kinettes good works. The corn cookers were provided by Eastman Steeves and Hannu.

Security worked unobtrusively but well, which is the way it should work There were only a few problems -- the most worrisome being a couple of children unaccompanied by parents wandering into the aircraft parking area and, in two or three instances, groups of adults talking and walking with their backs to aircraft taxiing out, ignoring the waving and shouting of marshals and security.

The Chadburn Squadron Air Cadets did a great job of keeping automobile and motorcycle traffic from blocking the driveway entrance area around the hangar, sometimes a problem in previous years, and getting drivers to go all the way back to the car park area. And with so many "drive in" visitors this year it was often a long way back.

Fortunately they were not needed but we felt reassured by the presence of professional Fire Fighter Tony McCraw, Paramedic Ed McDiarmid, Danielle Richards who looked after our First Aid Station and Doug Millson who brought a large farm tractor with fork lifts to be used in the rescue if any one should become trapped in an overturned aircraft.

A special thanks to those members who came early to set up tents, chairs and tables for the RAA's seminar held in the hangar and for the RAA booth where we sold hats and magazines. Many where still there at the end of the day to put things away and help clean up.

Winner of the draw for a ride in the Waco was Kyle Vowles of Bailieboro.
Don Dutton

Thompson Valley Sport Aircraft Club (Kamloops)

President Dick Suttie reports that his Beaver UL is running but one carb has been giving trouble. Switching all of the internal parts to another Bing body corrected the problems, so the conclusion is that there might be porosity in the casting. Camille Villeneve has been putting the hours on his new Proton UL. Dick and Bill Huxley have been busy hanging doors on the hangar using Bill's "patent pending" operating mechanism that includes a chain fall and a rail. The members have certainly been enjoying the new deck on the clubhouse during the chapter barbecues. Camille has received a request from an Englishman living in France. He is looking for information on a Canadian twin engined ultralight from the eighties -the Toucan. If you know anythng about these rare planes, please contact t.br@free.france . The

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 :

Recreational Aircraft Association
Brampton Airport, RR#1,
Caledon ON L7C 2B2
Telephone: 905-838-1357 Fax: 905-838-1359
Member's Toll Free line: 1-800-387-1028
email: raa@zing-net.ca

TVSAC chapter newsletter may be read online at http://www.ocis.net/tvsac/

RAA Calgary

President Calvin Thorne reports that he has been busy with the preliminary weight and balance of his amateur-built Vision, and that he has found an very good online weight and balance spreadsheet at www.kcdawnpatrol.com/wghtbal.htm <http://www.kcdawnpatrol.com/wghtbal.htm> . This may be downloaded and is customizable for individual applications. It is possible to test extreme conditions to see how they affect weight and balance, and the minimum and maximum conditions may then be determined.

Paul Swift reports that in New Zealand there is a group that has found a PBY Catalina and is actively restoring it to flyable status. Paul feels that there many large aircraft are left to rot because of the expense of moving, hangaring, and restoration. His plan is to visit the Shuttleworth Collection in England where all collected aircraft are maintained in flying condition. www.airchive.com <http://www.airchive.com> is a website with links to an extensive collection of lists that deal with scrap and salvage aircraft, including a Boeing 747-100 for $15,000.

Calgary Chapter has two local builder assist centres. Shane at Innovative Wings operates one of them. The other

Continued on page 36

A Tribute to Colin Walker

On January 10, 2007, renowned prop maker Colin Walker of Vancouver's Chapter 85 passed on. Bruce Prior gave this eulogy at Colin's memorial service:

Thank you all for coming to this celebration of Colin Walker's life. Colin would have said it more simply: "Good on ya!" I think Colin was already a member of EAA Chapter 85 when I joined in the early 70s. He always sat front and center at the meetings where he could keep the executive on course. The Chapter facilities at Delta we have enjoyed for the past 35 years have Colin's mark all over them. He was the chief carpenter in the 70s when the clubhouse was erected and the hangar was built. Then for many years he was the Buildings Committee Chair and managed all the repairs and modifications that kept the buildings functional. He also helped plan the Christmas Wine and Cheese parties. During Chapter meetings in the winter months we could always get a rise out of Colin by complaining that the clubhouse roof was leaking. It became such a joke that we would complain even on dry Summer days. But Colin had the last laugh. He found a manufacturer rubber membrane roofing which we all dutifully installed under his direction. The roof has never leaked since. For his many years of service to the Chapter Colin was made an honorary Life Member of the Chapter in 2003. Colin was a cabinet maker by trade as well as a hobbyist craftsman. He could turn wood into works of art, and there are many examples of fruit bowls, furniture and other carvings in his home. He also built components for other people's airplanes, like the wings on Les Mitchell's advanced Stevens Akro sport plane and the gorgeous rosewood instrument panel in George Spence's Glasair. Of course, his best known woodworking was propeller making. And not just for homebuilt airplanes--He made propellers for airships, radiocontrolled airplanes and swamp boats as well. He started his propeller business in 1982 and crafted more than 700 propellers for customers all over North America. Pilots often claimed that Walker props gave much better performance than metal ones. And as far as I know, no Walker prop has ever failed in flight. I did see him do the rough cutting and planing once, but it remains a mystery to me how he found the final shape that gave his propellers their legendary performance. I do know there was some science to it because he once asked me to calculate a table of attack angles for him. I calculated the table on my Commodore 64 and you can't get more high tech than that. In the late 70s the Chapter bought a Cessna 170 so that members could learn to fly. Colin was one of the dozen or so graduates of that project. He was building his Super Emeraude then, inspired by his friend Ted Hendrickson who was also a prop maker and who had built an Emeraude a few years earlier. He completed it in 1980 and painted it in the same colours as Ted's. The matched pair of Emeraudes were a familiar sight at northwest airshows and fly-ins. Colin loved to fly and attended all the Chapter fly-outs and all the Pacific Northwest fly-ins for over 20 years. He was often asked to be a airplane judge at the Arlington Fly-In, in recognition of his woodworking expertise. Colin always maintained that wood was the ultimate construction material for an airplane. He had nothing but scorn for tin airplanes--in fun, of course although we were never quite sure. Colin's insistence on the superiority of wood did, of course, generate much ribald discussion. It was often suggested that his engine was also carved from wood and that it probably had teakwood pistons. Colin maintained that it was all true. He even claimed he used wooden rivets. He loved the banter that went on in the Coffee Shop at Delta and that may be what I'll remember most when I think of him. So today, let's enjoy our celebration of Colin's life as I know he would have us do. And whenever you can, remember to "Hoist a pint for a fine bloke!"

SHOW ME A PILOT who doesn't fall in love at the sight of a Pietenpol, and I will show you a pilot who cheated on his last eye test. This wonderful plane has charmed several generations of pilots who, as young Balsa Boys down in their parents, basements, imagined that someday they would build a real plane. A Pietenpol is just a scaled up Balsa plane. Instead of a few weeks, paper route money for balsa, it would have taken a few months at a high school summer job to buy the spruce and fabric for a Pietenpol. At that time a Model A engine was easy to find; under $50 anywhere. We could all have built our own Pietenpols but for most of us, cars and girls, then university and marriage got in the way, and we put aside our Pietenpol dreams.

One fellow who lived the dream is Jim Armstrong of Brussels, Ontario. With the support of his wife Leona and his children, Jim finished his first Pietenpol CF-UKA in 1968, when he was teaching physics at a high school some twenty miles from his family farm. Jim's students are now grown, but when he bumps into them at social events, they still remind him that always managed to use aviation when illustrating the equations of motion. During the spring and fall seasons, Jim even commuted to work in his Piet, using a bit of spare ground near the school for his strip.

Why choose a Pietenpol rather than one of the many other wood designs available in the Sixties? Jim and Leona both went for Pietenpol rides in Wisconsin in 1961 and were impressed. He wrote to Paul Poberezny for his opinion, and it came back as favourable. Bob Whittier's articles had inspired him, so with Poberezny's assurance Jim's mind was made up. He ordered a set of the plans that Warren Hoopman had drawn for Bernie Pietenpol, and got started. Everything came on six sheets, and every detail was covered except for the size of the thin strips used on the turtledeck. Jim said that the original Modern Mechanics plans have been reprinted in the Glider manual, but they are only for the original heavy Model A engine. Most use a much lighter Continental nowadays, and the firewall must be moved 6" ahead.

The first step was to find a supply of spruce. Jim and the kids made a trip to Oliver Lumber in Toronto to buy five 2 x 6 planks of spruce 16 ft long, and some birch and mahoghany plywood. When they got home, they first ripped the wing spars and made longerons and ribstock from the rest. A rib layout was made the same way that we all built in balsa. Ribs

The Incredible Pietenpol

80 Years Young

were made one at a time on the kitchen table until some thirty were done. Cap strips were steam bent in the kitchen with a piece of tubing and a teakettle. Jim used Weldwood plastic resin glue because this was in the sixties. It is water resistant but not waterproof. The plane has been kept inside for forty years, and the glue is still like new. The assembly of the 29′ 2″ one piece wing was accomplished in a spare bedroom at his Mother's house in the winter.

When it came time to built the fuselage, Jim managed to get some space in an outbuilding and build it in the summer. There was some welding to do on the fittings and Jim was not a welder. Jim McNeil, the local garage owner in Brussels, welded up Jim's parts with oxyacetylene. Jim used thin galvanized steel sheet from the local heating supply to cover the wood firewall. The steel fittings that carry the engine loads to the upper longerons were lengthened because the original Model A carried most of the load into the lower longerons. Jim originally used a Lycoming 65, then in 1990 switched to a Continental 65.

Jim did make one change to the plans. Originally the cabanes had an "X" wire across the right side of the cockpit. Instead Jim fitted steel tubes that go forward from the front cabanes to the firewall, and besides providing better rollover protection, this improved accessibility to the front cockpit. The cowl was adapted from a J-3, and the cylinder heads were cooled with Cub-inspired ears.

Irish Linen was used to cover the wing, Grade A cotton covered the tail, and dacron is on the fuselage. Rib stitching was done with the assistance of friends from Goderich. Leavens supplied the aluminum undercoat and the yellow dope, which Jim applied himself, initially with a vacuum cleaner spray gun, then with a friend's farm compressor for the finish colour. The final coats were done outside, and if you look closely you can see a bit of 1968 dust in the paint.

A Pietenpol has most of its cables on the outside, and Jim recalls that he bought about 150 feet of 1/8″ cable and 34 turnbuckles. Even the Taylorcraft brakes on UKA are cable actuated. He fitted 600-6 rims and tires, and a solid tailwheel with a spring from a John Deere cultivator. The plane was transported to Goderich for its DOT inspection in 1968, and the only snag was that Jim had used nails as hinge pins for the elevator. He changed these and the successful first flight was made in June of that year. The hours were flown off and Jim began 24 years of Pietenpol commuting to school that

The open cockpit seems to fill your head with the romanticism of the golden era of aviation.

Top: Shaun Wolk's CF-RAZ, sporting wheels.
Bottom: Brian Kenney's Piet at the 'balsa model" stage

fall. His kids were all interested in flying, and every one knew how to control a plane before they got to high school. Most of them proceeded to take flying lessons at the local flight school.

Jim and his 16 year old son Robert decided to make the pilgrimage to Oshkosh in 1975, with some of the camping gear in the tiny baggage compartment, and the tent on Robert's knees. The Lycoming began misbehaving occasionally on the way but they could not determine the cause. For the trip home their friend Norm Beckham took their gear to lighten the load, and Jim remembers his son debating whether or not to keep his toothbrush. They nursed the engine for the two day flight home, and the next day made a test flight at their own farm. On that flight a valve seat came out while they were in the circuit. The head was soon repaired and stayed together until the engine was replaced with the Continental.

C-GLMA: The "New One"

Robert Armstrong was bitten by the Pietenpol bug and shortly began construction of his own. Again all wood was sourced from Oliver Lumber, and Jim helped with the ripping of the stock. Robert built the one piece wing and the fuselage using epoxy glue but then got married, moved away, and never found the time to finish. By this time the Armstrongs were holding annual Pietenpol fly-ins, and Robert put a "for sale, $3500" sign on his project. His mother Leona took the sign down because the Piet was family, and Jim bought Robert out. By this time Jim had a decent heated shop at the farm. By this time his son Bruce had become a proficient welder and fabricator, so he made and welded up the metal fittings, while Jim did the assembly. Jim had retired from teaching and this was a good retirement project. Although he was retired from teaching, the farm still needed working, so the second plane took more than 10 years to complete.

Jim had a few changes in mind and raised the new wing up on cabanes that were three inches higher, to provide better access to the cockpit. Robert prefers the look of the older one but the new one is easier to enter. This new one has a breezier cockpit and is a little faster with its Continental 85. It cruises at 85 instead of 75, and has possibly a bit more lift because of better airflow under wing. It floats on final, but they cut throttle right back and sideslip to lose altitude. On UKA they

just cut throttle back and it sinks.

On both planes the fuel tanks are aluminum, a very fortunate choice in these days of ethanol fuel.The early plane holds 11.5 imperial gallons, and the new one holds 14.7.Jim and Robert used Stits 2.6 fabric for this plane and finished with the Polyfiber System and a HVLP compressor and gun in their own paint booth. There are 13 coats in all, and it took an entire winter including three days of taping for the stripe. The landing gear and struts were masked and painted while installed, to prevent nicks during installation. The engine in LMA is a Continental 85 from a Taylorcraft, and the 600-6 wheels have Cleveland hydraulic brakes. Upholstery is four cushions that were sewn up by a local Mennonite fellow. The early plane has bungee on its Cub gear, and the new one has die springs and shock tubes from Wag Aero. Both systems work well on the farm strip, but it is a lot easier to install the die springs than the bungees, which required hours of block and tackle work.

What is it like to fly a Pietenpol? Well, if you go to the Armstrong's annual Pietenpol fly-in any Father's Day weekend, you can certainly find out. This has been an annual event since 1990. There are normally 35 planes, and a there will be a lot more people who drive in. Usually 200 meals are served, and payment is by donation. Most of the planes that attend are Piets, but others are welcome too. Many of the fellows are willing to take a newby up for their first ride in an open cockpit plane. Shown up at this event and you could get hooked on Pietenpols yourself.

Jim says that the older 65 hp plane climbs at 400 fpm, while the new plane with it C85 does 600. Jim has a friend in Brazil with a Model A-powered Pietenpol and it gathers altitude very carefully. For both planes, Jim chocks the wheels, gives three shots of primer, and hand props. They don't call him Armstrong for nothing. The Continentals start on the second pull and idle happily at 700 rpm. The new plane has more thrust and a sensitive throttle so he ties its tail to a tree with a slip knot, and then leaves the line behind. Full throttle means that he can lift the tail immediately and he is off the ground in 2-300 ft. He climbs the C-85 at 2250 rpms and the oil temperature will normally be 170-180; on hot days it can get to 210. At circuit height he pulls back to 2000 rpm and cruises at 75 mph. If he wants an 85 cruise he raises the rpm to 2250. The plane is slow in roll, and moderate in pitch

Top: Summers (come on, its not that bad!) in Winnipeg can get pretty cold...
Left: LMA's panel is simple Day VFR. Note the bar protecting the mag switches.

Like Father, like son. Jim and Robert Armstrong with the family's new Piet. Below: Classic Pietenpol. Bernie Pietenpol says that the undercambered airfoil is similar to the Eiffel 36. "X" wires between the lift struts and the forward cabane stays keep the wing in place.

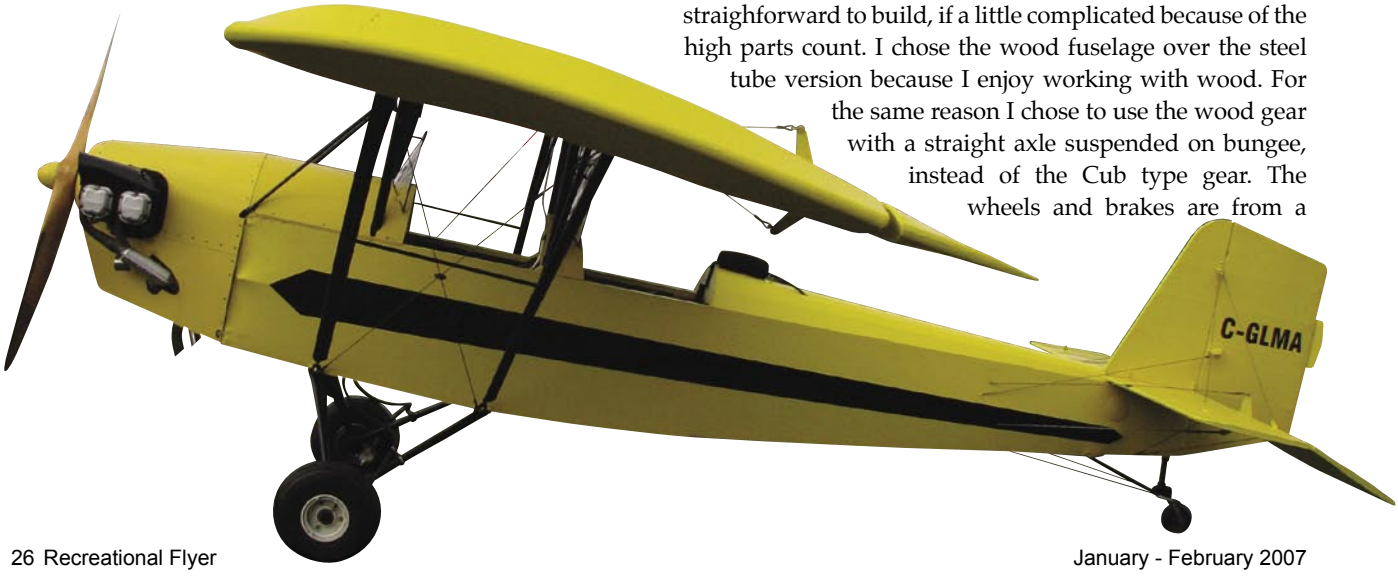
and yaw. Although there are differential ailerons, he leads with a bit of rudder. Turning base he pulls back to 1000 rpm, which produces 65 mph and a 500 feet per minute descent. The plane has plenty of rudder and sideslips well. Jim then throttles back to idle and goes over the numbers at 45. The wheels touch the ground at 40, but he can fly as slow as 28 indicated if he carries some power. Jim tends to do a wheel landing because the Piet does this so nicely. Rollout is 600 ft, and an 800 ft strip would be usable if the ends are clear of obstructions. Jim has flown the Pietenpols in crosswinds of 15-20 mph and says they bounce around a bit like an ultralight, but they handle it well.

The Armstrong clan has now grown to include nine grandchildren from age 8 to 18, and six of them already know the basics of flying a Pietenpol. A third Piet is now under construction, so the next generation of Armstrongs will have plenty of Pietenpols to fly in Brussels.

Gary Wolf

C-FAUK: Brian Kenney

This summer will mark the twentieth year that I have been flying my Pietenpol. I chose this design because it is like owning a WW 1 fighter but a lot more practical, and straighforward to build, if a little complicated because of the high parts count. I chose the wood fuselage over the steel tube version because I enjoy working with wood. For the same reason I chose to use the wood gear with a straight axle suspended on bungee, instead of the Cub type gear. The wheels and brakes are from a



Quebec member Paul Poulin's lovely Pietenpol, C-GZHT.
Below, left: Brian Kenny's ride, C-FAUK.

Honda 450 motorcycle to give a period look and work well over the bumps. I used an A 65 and a wood prop. The engine is one of the few changes that I made from the plans. I also made a luggage compartment in the wing and put a fuel tank in the forward fuselage. The cabanes were raised 2" from the plans. If I had it to do over, I would make it 5% bigger in every dimension and use a 85 or O-200 with electrics, plus raise the cabanes another inch. I would definitely keep the straight axle gear again.

The covering on my Piet is 1.6 oz dacron with white dope, and enamel was used for the green section. Altogether the plane cost me $6000 and a lot of years of work. George Opacic did the inspections and C-FAUK is registered as Amateur-built at 1175 pounds. The empty weight is 588 and I have taken up three passengers in the 240 pound range. The fuel capacity is 14.7 imperial gallons and the engine consumes 3.5 gph. Most of my flying is to local fly-ins, with the occasional cross country. I have flown to Oshkosh four times and have a reasonable luggage capacity in the 20 x 40 x 6" locker.

With the A-65, the Piet takes off within 300 ft and cruises at 75mph for a range of about 300 miles, depending on wind. When landing, I approach at 70 and land at 40 mph in a three point. Because the Piet has low momentum there is a three second window to land, or I must add power and try again. It took a full season to feel comfortable with the landing. The Piet has excellent crosswind capabilities - I have landed in a 25 knot crosswind at 60 degrees. If the strip has clear approaches, I can use 1000 ft. If not, I want 1600 ft.

Flying a Piet is more fun than you could believe; it is a great passenger aircraft, nimble and responsive, easy to operate, and it gets a lot of attention. It is the perfect cross between an ultralight and a Cessna 150 - I am planning to fly it to Wisconsin for the fifth time this summer.

C-IOVC, Harvey Rule

My Pietenpol has a steel tube fuselage. George Urinick originally began the project but he passed away, and Bob Greyham took it over. Bob had done almost everything to finish the plane when he sold it to me. I made one change to the wing to hinge the centre section of the trailing edge, so that it could be flipped up to make it easier to enter the rear cockpit. This is where the PIC sits, and most Piets have done this to the wing.

This Piet has a Franklin engine, and Bob Moorhead and I installed an electric starter because I do not want to hand prop. The battery is mounted in the front seat area. Tom Bennate did the tinwork to make the eyebrow airscoops to cool the cylinder heads. Bob, Tom, and I moved the engine controls and did a lot of detail work. I installed the carb heat unit on the exhaust pipe and the pipes leading to the carb heat box, as well as the carb heat controls. I also installed an emergency shut off control cable for the main fuel tank.

My engine is a Franklin 80 hp AC-176-F2-F3.Max on engine is 2500 rpm, 2300 at cruise. The engine weighs 227 pounds and has a new 72x 42 Tennessee prop with a crush plate. Any fuel 80 octane or better will do with the 7:1 compression ratio. My engine runs a bit cool at 160 F (max is

240), so those eyebrow scoops really do work.

Although I have registered the Piet in the Basic Ultralight Category, which does not require even carb heat, I added a gascolator and fire extinguisher and did a weight and balance (also not required). The empty weight of my plane is 777 pounds, with 365 on the left wheel, 370 on the right, and 33 pounds on the tailwheel. The CG works out to be 14.6" which is well within limits. So far I do not have a lot of time on my plane but I am certainly looking forward to the summer.

Harvey Rule

CF-RAZ

(Originally registered as CF-AUK, owned and rebuilt by Shawn Wolk)

My Pietenpol was registered initially in 1937, as confirmed by Brian Kenney. I have anecdotal evidence from the original builder's son (Robert Thompson) and Gerry Arnold of Arnold Bros. Transportation of the aircraft flying before this date. Initial registration was CF-AUK. The new registration the aircraft received in 1958 has it as CF-RAZ.

The aircraft was built by Harold Thompson initially in the 30's, and it was initially registered in 1937. It was rebuilt in the 50's by Chuck Sava, and both of these fellows are listed as the builder on the registration. There is no documentation of the original inspector in the 30's. In fact the file at Transport Canada has a half sheet of paper at the bottom of it. This sheet is dated in the 50's...confirming that it was previously registered in the 30's by Industry and Commerce. The current logbook goes back to '61.

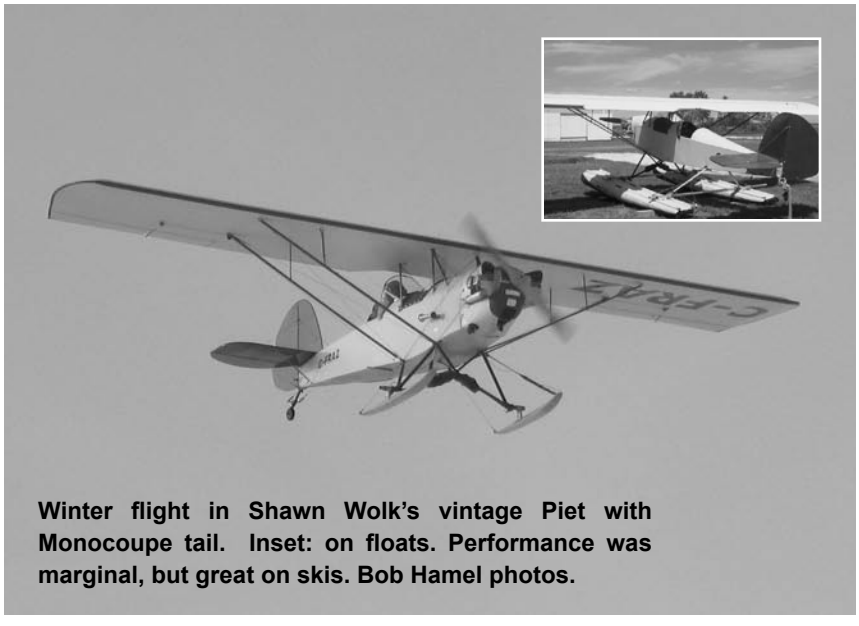
Harvey Rule's plane certainly attracts the young crowd. Note the set-in step for rear seat entry, and the flip up trailing edge of the centre section.

I traded a Sonerai I for the Piet from a fellow in Gravelbourg SK and brought it back to Manitoba in 2002. The tail was already apart, and the wing and fuselage had many layers of paint. The last recover was in 1963 and it was Irish Linen. In 2002 the tail was recovered in 2.7oz. ceconite fabric using the HIPEC system from Falconaravia. And the aircraft was reassembled and flown. In 2003 the wing was removed and given a complete overhaul. There were signs of repaired damage to multiple ribs, sustained in the 70's when a pickup truck drove into the wing. (or the plane drove into a pickup truck...the truth will likely never be known) The wing was glued in the 50's with Casein glue...and there were many loose glue joints, and split or broken ribs from the excessive tightness of the old fabric. In fact the wing 'sprung' when the fabric was removed. The worst glue joints were in the aileron spar area. With all the gussets and joints to the spar being loose, the fabric was really holding the wing together. The only water damage or rot was on the inside rib of both ailerons. There was warpage of the aileron trailing edge but the wood was in excellent condition. The spars are rather unique, with a 24" scarf in the center section. They started life as 1 1/4" thick slabs of Sitka spruce and the center sections were dadoed out on some type of table saw in to an I-beam shape. The wing was recovered in 2.7oz. ceconite using the HIPEC base coat, then spraying on top quality latex exterior house paint. To allow better rigging, (it had pulled considerably to the right) the rear lower struts were modified to accept barrels and J-3 style strut mount forks. Another unique feature of this plane is that every wingstrut was a different length. Not like both fronts the same, but all different. The struts themselves are made of 3 spliced sections of a unique extruded 4-rib teardrop style steel. I have traced their origins to materials manufactured by the Heath Aircraft Company in the 20's & 30's.

In 2005, the fuselage was recovered. The fuselage on this Pietenpol was built using rather large diameter (3/4") mild steel tubing. I suspect that 4130 wasn't available back then. There was a tube at the rear of the fuselage that connects the top and bottom longerons, and acts as the forward mount for the vertical stab. It looks as if it was never welded. It was also cracked off at the bottom longeron cluster. The fuselage also has a distinct twist to it from about 2 feet behind the rear cockpit to the tail. The tail on this aircraft was from a 1929 Monocoupe. And the evidence of how it was fitted were revealed. There are actually bracing tubes that lead nowhere, as the tail was likely 'chopped off' and large 1/2 moon gussets had been used to adapt it. The fuselage was recovered again in 2.7 oz. ceconite with the HIPEC base coat and latex top coat.

This Pietenpol started life with the Model A engine. Performance from anecdotal evidence is..."glad they didn't have towers in those days". Chuck Sava installed the A-65 in 1965, and then he said fences were no longer an issue. The original engine is still around and is sitting in a garage in Oakbank, Manitoba. Since the fuselage has been extended for the lighter Continental, it would require extensive reconstruction of the fuselage to revert to the Model A engine.

Another unique feature is the original wing tank. When I purchased the plane it was removed and was quite rusty. I took it to a repair shop that specializes in radiators and fuel tanks. I told them of its early origins and suspected unique metallurgy. (ternplate?) They assumed it was galvanized metal of sorts at the time...until I went to pick it up a month later. They had quite a challenge to find the right type of procedure to work on it.



Winter flight in Shawn Wolk's vintage Piet with Monocoupe tail. Inset: on floats. Performance was marginal, but great on skis. Bob Hamel photos.

The Piet originally had a fixed gear, but after its early life mishap (before it was registered in 1937) the gear was replaced in a J-2 style gear. (had to be J-2...there was no J-3 yet) When the aircraft went to Gravelbourg, Cleveland wheels and brakes were fitted with Honda Goldwing master cylinders.

I initially dismissed the Piet after I looked at it. When I returned home, some of the old timers at our club started to tell me of the flights they had in this aircraft over the years and that it

Jesse Beauchamp is the owner and pilot of the scale Pietenpol powered by a 2SI 35 hp engine. He reports the plane is very docile and light on the controls. He also said that it is very stable in light wind condition. Built by Rick Sunley, it's a Roger Mann UL version and is flown from the front seat. The aircraft is based at Collingwood. Cruise is 55, stall 28.

was a good flyer. I looked past the disassembled and ratty looking contraption, and somehow its inner beauty. Since at the time I was a very low time pilot, I wanted an aircraft that I could fly without wrecking, (hence why I traded off the Sonerai 1)

With the A-65, performance is quite acceptable. 4.4 US gallons per hour at 2300 RPM and 66kts (76MPH) with 9.6 US gallons in the fuselage tank and 12.6 US gallons in the wing. The range is a reasonable 340 miles, and endurance of 4 1/2 hours plus reserve. I removed the old wooden Sensenich prop in 2004 when I fitted the Piet with a set of Full Lotus 1260 floats, and installed a 2 blade Warp Drive ground adjustable composite prop. Well, the float version of the Piet wasn't too successful as I only was able to get it to fly off the water once. But to this day... I believe that it is the very first Pietenpol to fly from floats. The Piet weighs 710 pounds empty, and is registered at 1180 pounds gross.

The aircraft has flown much better on skis. And I have flown over 60 hrs. on skis over the years. I have actually flown the Piet for about 375 hours since 2002, 160 of these in the last year. Now that I have become quite use to its characteristics, I have a lot more fun with it and have flown it to many locations throughout the prairies. In fact...cross country by Piet has become the norm with trips to Alberta, SK, and Northwestern Ontario. Most of the flying in the Piet is solo. Cross country legs would be substantially reduced if I were to carry a passenger. Also, most passengers don't quite have the resolve to sit in the breeze that long. My longest leg surprisingly was in the winter on skis at 3 hours and 25 minutes. I consider myself a cold weather flying clothes expert and staying warm isn't an issue. In the summer I prefer to fly at flight level 70....that's 70F. If airspace allows, will try and climb to a comfortable temperature. In the winter, hunting for a possible temperature inversion is common. And always above all I trying to find lesser headwinds (sometimes I can beat the trucks on the highway).

The aircraft has a few flying characteristics that take getting use to. First of all it is very draggy and falls like a rock with power off. This creates quite a challenge to 3-point, as flare height must be judged perfectly. If even slightly high, without a burst of power, the Piet will slow down and drop... like right now! So I typically wheel land it now. Both climb and approach are about 55 mph, and the power off stall speed is around 45 mph. Actually at 1500 rpm and 45 mph, the Piet will maintain altitude as the nose bobs up and down in & out of stall. Another unique point is the authority of the tail. As my Monocoupe tail wasn't designed for the Piet, it has incredible control authority. Even at low speeds, the elevator and rudders never really get mushy, and crosswinds have not been an issue. On pavement I once landed the Piet with a 15kt gusting 20, 90 deg crosswind. (didn't enjoy it... but sure surprised the audience) And the Piet could easily operate from a 1000' strip. Take offs in a no-wind are about 500' solo and 700' loaded up or dual. landing can be 500' or less. In a normal takeoff I typically will let the speed build with the tail up until about 55 mph before lift off. Again on landing, airspeed is not really an issue because of its dragginess. Even with the power off and the nose pushed steeply down, it will only go about 80 mph, so slowing it down on final is never really an issue. Flyers of less draggy aircraft will quickly find themselves dragging the aircraft in with power, when they realize it likely wouldn't make the runway, so very tight circuits are the norm.

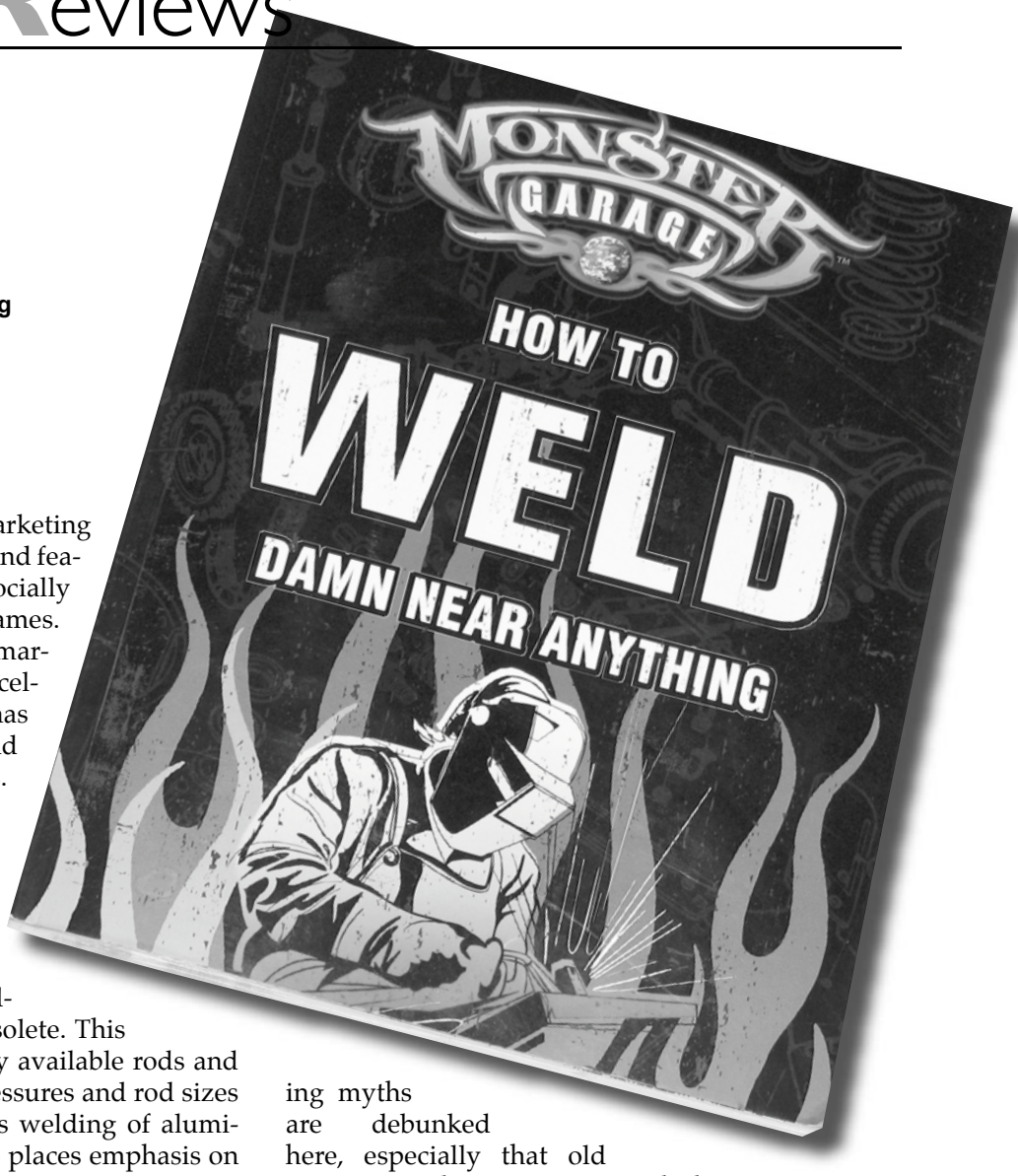
About the only feature I wish the Piet had is aerobatic capability. Although never the intent of the design, the open cockpit seems to fill your head with the romanticism of the golden era of aviation. One of the best benefits that the Piet does provide is plenty of free coffee, food, and conversation.

You can also see the Piet in action on History Channel on April 9th 2007. My Pietenpol starred as an allied spotter plane in a documentary on the Battle of Vimy Ridge. It was recently filmed at the Shilo, MB Military base and artillery range.

For more information on Pietenpols, check out http://users.aol.com/bpanews/www.html

Product Reviews

by Gary Wolf



How to Weld Damn Near Anything
Monster Garage, no author given
Motorbooks International
ISBN 0-7603-1808-S
29.95 CDN

This book appears to be a marketing tie-in with Discovery Channel, and features on the frontispiece that socially dysfunctional egotist Jesse James. However once past the initial marketing pages, this book is an excellent manual for anyone who has some welding skills already and wishes to expand his horizons. Most of the photos are credited to Richard Finch, and I would guess that he is the unnamed author.

Most welding manuals reprint old 1930's information about oxyacetylene welding, and a lot of this is now obsolete. This manual deals with the currently available rods and torches, tells you the correct pressures and rod sizes to use, and deals well with gas welding of aluminum, stainless, and 4130. It also places emphasis on the use of premium and flux cored rods to be certain of the metallurgy with which you will end up. Proper cleanup procedures figure prominently in the section, to be certain that the fluxes are completely removed after welding.

Tig and Mig Chapters are up to date and discuss the current crop of inverter and square wave machines that are now commonly available. The author goes so far as to recommend the cup sand tungsten size for typical Tig welding applications. For aluminum and stainless he explains back purging methods to prevent oxidization of the back side of the welded zone. Copper backing bars are also discussed as a shielding method, and as a support for thin aluminum weldments. Mig welding of 4130, stainless, and aluminum are discussed in detail. Stress relieving myths are debunked here, especially that old saw about reheating a joint with the rosette torch. These two chapters are worth the price of the book, even for someone who has been welding for years.

Plasma cutting gets a whole chapter, and so does stick welding. Neither has much application for what we do in aviation, but they do make good reading to see what the heavy steel fabricators do in real life.

The book ends with several more pages of photos of the Monster garage crowd fabricating useless toys like a Ranchero converted to a bucking bronco. It is too bad that a great welding manual has to resort to this to sell to the knuckledragging doublewide market. In a perfect world this manual would be packaged for the aviation building market.

Power Fist Air Body Saw #8058869
Gary Wolf

If your shop has an air compressor, this of course can be used to justify a whole raft of air tools. Why have a compressor just to blow dust away and fill bicycle tires? One handy tool for plastic and metal projects is a small reciprocating body panel saw, essentially a one-handed sawzall in miniature. The Princess Auto panel saw is a near copy of the Milwaukee unit that costs four times the price. I had been borrowing Wayne Hadath's Milwaukee, but then the Princess copy went on sale for under $40. How could I resist? I also bought a bag of five spare blades for six dollars and went back to the hangar.

The first test was to saw some rather heavy fibreglass from a race car body. The fine blade loaded up a bit but it did do a pretty good job. The stroke of the blade is abut 1/4" so fibreglass near that thickness makes the fine pitch blade a bit difficult to clear. Still, it was a lot better than a hacksaw blade in one of those little cantilever holders. It even worked better than a 3" abrasive zip wheel in a die grinder. For tight curves, this saw has no match. A radius of 3/4" can be cut without much trouble, the kerf is only .025", and the dust produced is much less than when using a zip wheel. The zip wheel will abrade a slot nearly .100" wide, even though the wheel is 1/16" thick, and throw a lot of fibreglass dust into the air.

One other handy use for the reciprocating saw is to cut out tack welds when you change your mind about the placement of a tube during fuselage building. In this case a zip wheel is faster but there is always the chance of cutting too deeply and damaging the tubing. Here the .025" width of the saw blade is a real advantage. The fact that it cuts slower is a benefit too as it is easier to prevent a gouge, once through the weld.

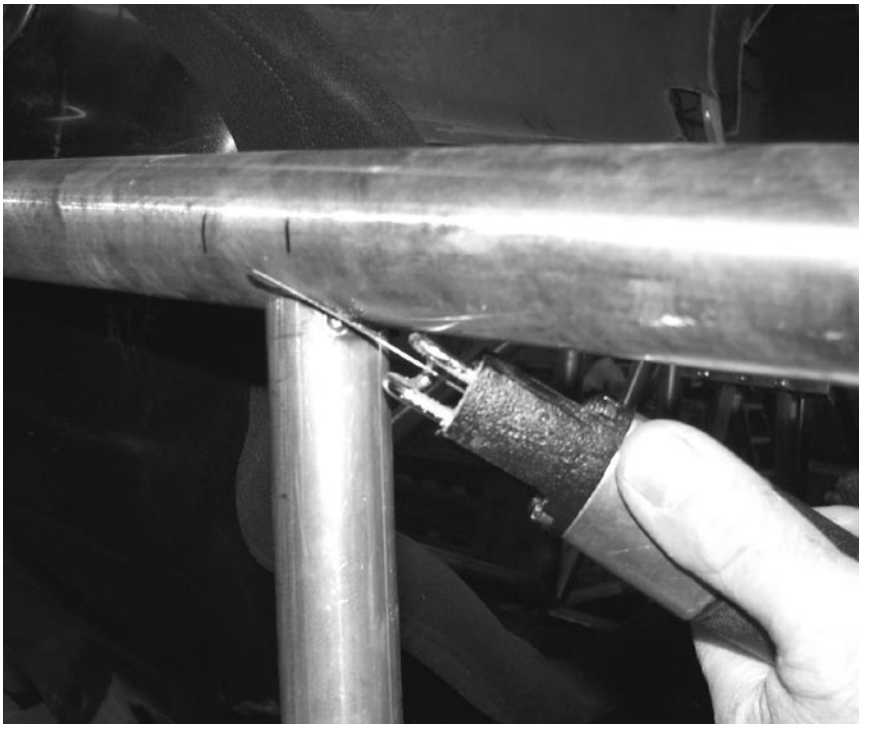
The saw blade may be reversed and the air lever may be actuated by the thumb or by the fingers. You can cut towards yourself or away, and the chrome nose rest may be laid right against the workpiece. The rest is relieved so that the saw may be inclined both towards the operator and away. An over-centre flip stop prevents accidental starting of the tool. It is well designed for thumb operation, and less so for the other fingers.

I had to return the first saw that I bought because three of its tiny allen bolts vibrated out almost immediately. They had been stripped during assembly at the factory, and Princess replaced the saw without any question.

There is one problem that several of us have encountered the local Princess store, namely that the sale price does not always come up at the point of sale register. At first I thought that the price might not have been entered properly, and I went back to the service desk at the rear of the store to have the price scanned. On that machine the correct sale price

Saw and blades, under $50, but check your invoice to be sure

was displayed, but at the checkout the full price was being charged. This has happened several times over the past six months, and each time the manager has said that the problem will soon be fixed. Last week he told me that the correction might take another six months. I would recommend that you watch the cash register display as your items are being scanned, and that you check your invoice.



Right:
The thin blade excels at nipping tack welds without scarfing the tubes. Very controllable.

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(Especially owners & lovers of the Murphy Rebel)

These fun flying trips are much like LIFE - the object is NOT to get to the end, it's TO ENJOY THE TRIP ! We don't always get to the place we expected , but we DO see interesting places, meet interesting people, and share a lot of fun. Fly along with us, learn a bunch, share lots of experiences, and create some happy memories !

Please call & get on the Mailing List. Don't be shy ! Acey-Ducey, Bonanza, Champ - - to Extra, Yankee, & Zenith - (and everything in between !) Everyone can fly along - and we'll ALL have FUN !!

July 2 - Monday - Brampton - Evening kick-off BBQ !

July 3 -Tuesday - Gore Bay-Manitoulin, ON (CYZE) R.O.N. (Remain Over Night !)

July 4 - Wednesday - Manistique, MI (R.O.N.)

July 5 - Thursday - Ashland, WI (R.O.N.)

July 6 - Friday - Thief River Falls, MN (R.O.N.) Fly in for lunch at Grand Rapids, MN, then on to TVF. Super 8 motel, steak house next door - rest up for Saturday.

July 8 - July 12 - Rambling Enroute to B.C. Possible stops at Brandon, Killarney, Carlyle, Moosejaw Municipal, Swift Current, Maple Creek, Medicine Hat, High River, Okotoks, Golden, Revelstoke, Vernon, and on to Chilliwack. We'll try to have a Murphy Aircraft Mfg. Ltd. factory tour (& maybe a party !)

July 13 & 14 - Fri. & Sat. - Arlington, WA - (R.O.N.) EAA Western Regional Fly-in. Fun & Camping !

July 15 - 20 Rambling Back, to Brampton (or OSH) We'll head back east, possibly Rambling by the southern route, with a Side-Trip to "Cicely, Alaska". It's MUCH closer than you imagine! Then to Sandpoint, ID, and Libby, MT, visiting the Montana Float Co ., & on HOME ! Depending on the group, we might just go to Oshkosh, WI.

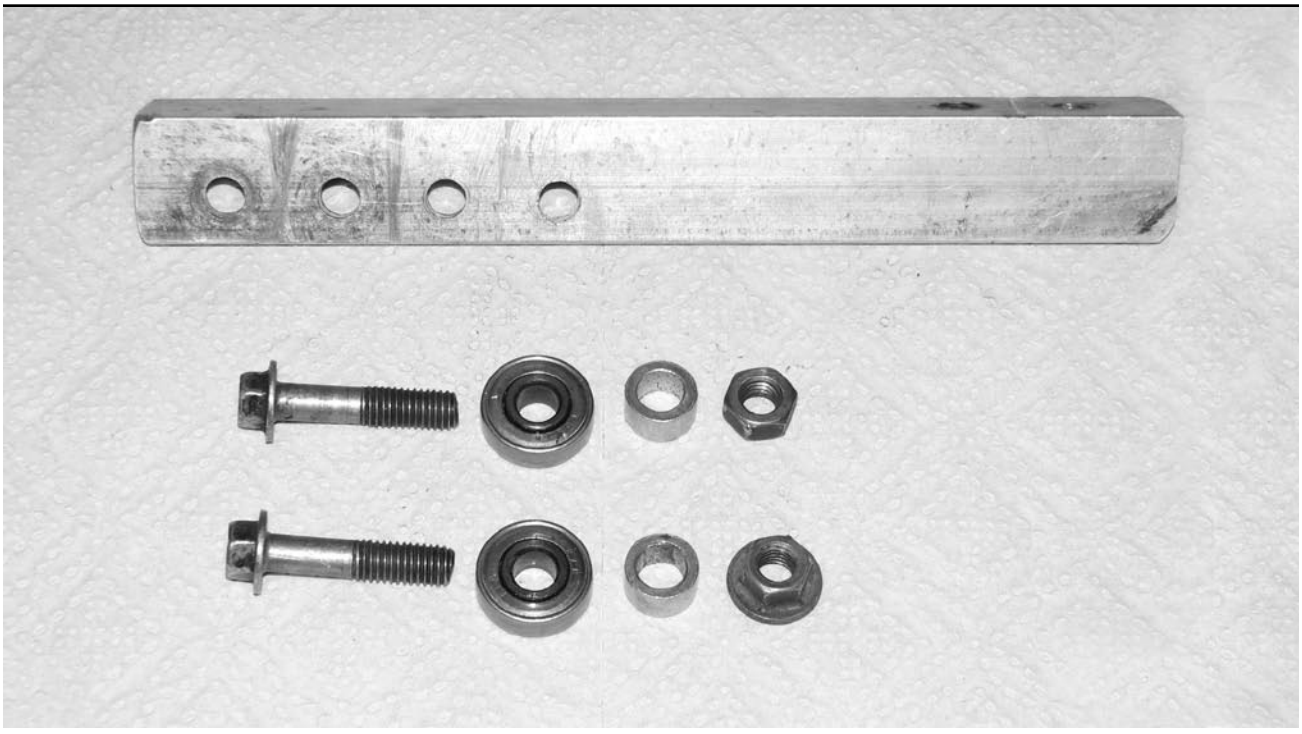
This is a casual, low-key, semi-disorganized FUN trip !! (We'll be Winging It all the way !) Suggestions welcome - navigation by consensus !!

Planning meeting on June 3rd. at Brampton RAA.

We will organize the group purchase of maps, enroute mountain flying briefings, and anything else you suggest. There will be a small daily collection to cover tie-downs, camping fees, etc. This means only ONE person dealing with airport staff - makes their life easier! (Of course, your fuel & oil (and beer !) are up to you....)

-Please register for the Ramble NOW ! Send $5 cash and we'll add you to the special Rebel Ramble mailing list - you will be kept up to date, and it will help us with planning ! THANKS!

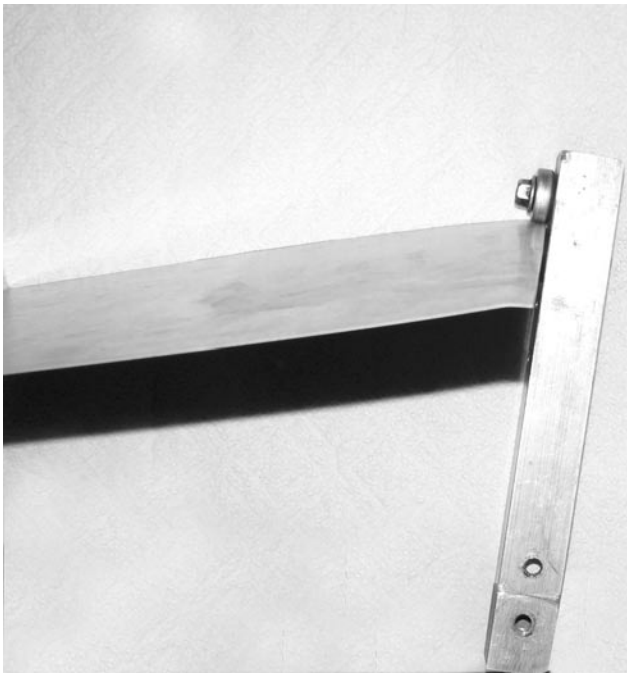
Bob & Anna Patterson (905) 457-5238
Ontario Factory Rep. - Murphy Aircraft Mfg. Ltd. 22 Baronwood Court, Brampton, Ont. L6V 3H6 email: bob.patterson@interbiz.ca Please shop at our store: http://bpatterson.qhealthbeauty.com



Edge Finishing

Did you or your kids get new rollerblades for Christmas? Before you throw the old ones out, steal the wheel bearings. You can use them to make an effective edge finishing tool for your aluminum panels. The bearings will probably be 8mm ID, just three thou over 5/16". Drill two holes in a scrap of aluminum angle and bolt the bearings on. There is not even any need to do a careful layout. Just drill one hole and mount the first bearing. Then take a snippet of your aluminum sheet and use it to set the distance between the two bearings. Drill through the second bearing and you can bolt it on. Fifteen minutes, tops, plus whatever time it takes to find and steal the old rollerblades.

To finish the edge, cant the tool about twenty degrees and pull it towards you along the edge of the aluminum panel. This will leave a 1/4" wide edge at about a ten degree angle. When you fit the panel to your plane, it will then fit tightly to seal against water and dirt.

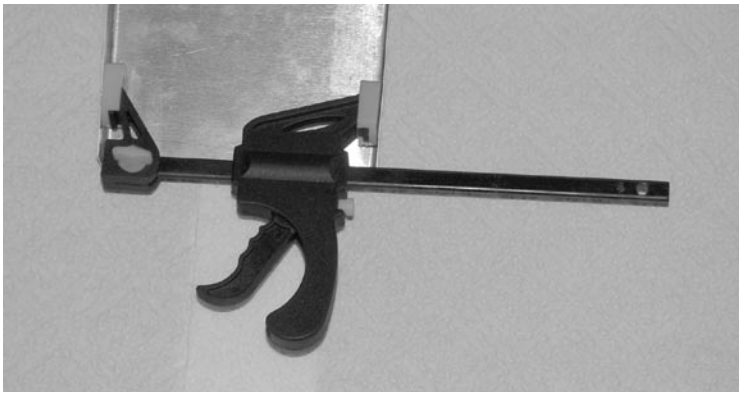


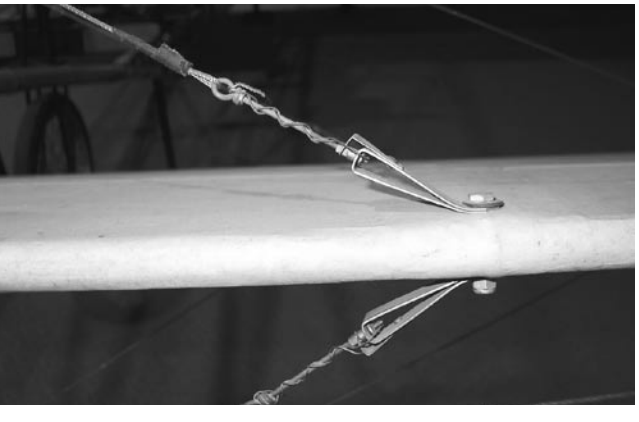
Top: 2 bolts, 2 bearings, 2 spacers because the bolts were too long, two nuts, and a piece of 1" angle. The extra holes are so that the bearings can be remounted to accommodate various thicknesses of aluminum sheet.
Above: tip the tool and pull it towards you.

Cheap Stuff

Who would have thought that Dollarama would be a good place to find tools for building airplanes? They import their own version of the Stanley clamp and sell it for - you guessed it - one dollar. These are very handy for positioning parts prior to drilling, and for clamping wood and composite parts while the epoxy sets. The jaws have serrated plastic pads that are removable. If necessary, a belt sander will smooth the serrations so that epoxy does not build up in the grooves.

Below: right: Here is the other trick the clamp can do. Remove the fixed jaw and install on the other end of the beam. It can then be used in reverse.





How they Did it Then:

Right: Early aileron control did not use a mixer. Instead the pilot sat in a seat with a parallogram seatback. The aileron wires were attached to the top of the seatback, and the pilot shifted left and right to induce a bank. Imagine if he got an itchy back when landing in a crosswind.

Lower right: This is how Glenn Curtiss and A.G. Bell tensioned their flying and ground wires a century ago, using the available motorcycle spoke technology. A spoke was heated and bent into a loop for the end of the wire. The spoke nipple adjusts tension and is kept clocked by the notched spring riveted to the shackle. The spoke itself is kept from twisting by a safety wire from the loop to the nipple. Anyone building a WW 1 type plane might consider making his own replicas of these early turnbuckles, both for the authenticity and for the savings.

Chapter News *Continued from page 21*

DHAP. What has happened is that the Eastern end of 25/07 at Boundary Bay has been extended to accomodate light jet aircraft on a now longer runway . (Actually accomplished by de-displacing the threshold; these were 5000` runways in ancient times) The problem now is that these airplanes have a very flat approach profile which would necessitate them being rather lowish right over our air field - about 1000 feet - not at all a problem as long as they stay there! One possible solution is for their final for Runway 25 to be begun on a heading of 220 degrees then correcting to 250 degrees after crossing 96th street and thus are now out of our lives. Doubtless much more to hear about all this business .

For those unfamiliar with the air-

TAIL SURFACES / Mike Davey

Much has been discussed regarding loads on the wing. By comparison, the tail surfaces receive less attention from the homebuilder, probably because these are designed using the minimum practical material proportions and thus are unlikely to be critical in load-carrying capacity. Nevertheless, one must ensure that the connections to the fuselage and the hinging of the rudder and elevator are sensibly designed.

First, a few words about the function of these surfaces. The tailplane, nowadays called the horizontal stabilizer, does exactly what its name suggests - the wing, left to itself, will pitch nose-up, a tendency that gets stifled at birth by a correcting upload on the stab. This load is small, simply enough to continuously prevent the wing from pitching. It gets larger temporarily when a gust causes the nose to rise or fall, decaying once again when equilibrium is restored. A correctly proportioned aeroplane will recover from such a bump on its own, though in practice the pilot assists in this recovery by a small movement of the elevators.

This ability to self-correct is diminished if the tail is already carrying an upload, as is the case in an aft C.G. condition. The recovery requires a greater contribution from the pilot - in other words the aircraft becomes less stable in pitch. This, of course, is why the designer will specify a maximum aft limit for the centre of gravity.

Add to all of this the loads that the pilot may deliberately apply to enter a manoeuvre, and the effects that lowering the flaps may have on the tail surfaces, and one can see that any attempt to calculate tail loads is a complex task and likely to be beyond the capability of the homebuilder. Again, comfort can be drawn from the likelihood that the tail surfaces are inherently over-designed simply because of commonsense usage of minimum practical materials. While this is not a promise, I suggest that a nice round number of 500 pounds is a typical maximum value of the limit load on the horizontal tail of a small conventional homebuilt.

Earlier in this article I emphasized that the details such as surface hinges must be thought out carefully. In my new project I decided that the elevators would each have only two hinges, one at each end of their spar. While one might argue that this results in more bending deflection at the mid-span point than a 3-hinge arrangement would experience, it avoids any cut-out in the spar and permits the spar to be located on the hinge line, reducing the amount of mass balancing required.

The outboard hinge shown in this figure features a brass flanged bushing which is clamped up tight with a stopnut. Rotation occurs only between this bushing and the aluminum hinge arm. If the proportions of the rib and spar surprise you, I should explain that my design is of wood construction.

A fetish of mine is the protection of control surfaces against impacts from a forward direction. These can be from bumps into the hangar door opening, or from an encounter with a bird, or a lump of ice shed from the wing or propeller. This may be unlikely but things do happen, and a jammed control surface is not a pleasant prospect. I personally do not favour the designs that dispense altogether with the fin, leaving the entire rudder vulnerable to impact damage.

In conclusion, the tail surfaces are little wings, though far less efficient in developing lift than the full-size version. For this reason they can be simple, often slab-sided with a simple rounded nose, often a tube to which a few ribs are attached. Their design is relatively simple - just pay attention to the details.

space around Delta Heritage Airpark, its circuit operates within a cutout of Boundary Bay Airport's control zone; DHAP is 3 miles east of its larger sibling and uses a 600' circuit. Jets using the westbound runway would fly very close to Delta's circuit with only a few hundred feet of vertical separation.

Scarborough/Markham

We owe a real vote of thanks to Wayne Jeffery from the RAA Oshawa Chapter who addressed our January meeting about ski flying with his Piper PA-12. Wayne took the trouble to bring some of the important pieces of equipment which he uses for us to see. His talk was beautifully understated, but he drove home a number of important points. Many of these underlined the necessity of being very well prepared. It is clear that ski fliers have to anticipate a variety of scenarios that could spell trouble for the uninitiated. We are indebted to Wayne for giving us the benefit of his experience and enthusiasm for this challenging kind of flying.

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Ads can be emailed to :raac@inforamp.net

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

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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

SPACEWALKER 2 : 38 Hrs. Engine and airframe. Lycoming 0-290-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

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: 3 sets of axles, 1 1/4 " 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.

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 McCauley, 2400 Floats $40,000. Buy both, fly the Starduster finish the Pacer, good deal for both. 1-250-785-6789 Jim. Central Time.

AIRSTRIP, new 42X40 hangers, trout stream, stocked trout ponds, sugar bush (with marketable timber) Fruit trees for U-pick, newly renovated bungalow with gorgeous views of the ponds, bush and runway. 61 Acres, $359.000.00 Ayton On. pennantmanor@hotmail.com

For Sale: Hush-A-Com 2-place intercom with 2 headsets and boom mics. Voice-activated, operates on 9V or acft power. Has its own PTT

switch. Exclnt cond; no tears, breaks, or corrosion. $250 or B.O. Ken Yates 905-857-3218, kennan@rogers.com

Rotax 912 80 hp rebuilt from a Diamond Katana core, by a fully qualified Rotax factory trained technician. $10,000. Please call Jake at 519-648-2044

McCauley fixed pitch prop 1C1601 CTM 7553, from a 150 hp C-172, 75" pitched to 53". Included prop logbook. Asking $900. Contact Adler Aviation 51-648-3886

2006 Challenger 2. 15 TTSN Rotax 503 elec. start, full enclosure and most options. All flight and dual Engine instruments.Priced well below replacement cost. Great fun flyer. Built by experienced builder. Why wait - fly now. $25,000 Cdn. Call 905 892 9649 or rjohnson18@cogeco.ca for additional information or pictures.

1 Set of Zodiac 601 Wings HD complete with wing lockers and joiner plates. Total time 450 HRS. No damage. Asking $1950.00 CN. 2 New Zodiac series Canopies grey tinted, still with flanges and paper covered. Asking $ 550.00 CN each. Please contact Erwin Hornemann @ 905 457 3716, ore Email me @ erwin. hornemann@sympatico.ca

CF-VML (Classed as "Amateur built") 1968 Taylor Mono Plane Aircraft legal to return to flight. 150 hours TTAF (flown with VW engine), One owner ago removed VW engine. A75 with very low time slick mag's 150hours SMOH added and current owner and signed off by Ministry. Currently based at CYKF (Waterloo)Too many projects on the go this one needs a new home. Willing to part out. Call Darren Pond 519-651-2522 or pilotpond@rogers.com for details.Asking $4000 for engine and $3000 for fuselage or best offer. I have over $12k invested.

EA81 subaru engine by NSI, 110 hp. model .complete firewall forward. Presently flying on a kitfox model 5, includes a in-flight adjustable propeller, (model cap 140). Total time since new 70 hrs. Asking $ 14500 or best offer.call yvon at 1-705-967-5311 after 6 pm. or at work 1-705-897-3333

Warp Drive 72 in , 3 blade RH prop.,"HPL" hub good for 912/914 or Subaru. New in box. New price $675 US, Sell for $450 Can. OBO bwkirk@mts.net or 204-488 0829

Avid Catalina complete kit. Purchased in 1999 for $22,900, will sell in a weak moment for $15,000CDN. 613-756-3815 or 613-281-7027

1995 Buzzard Special, registered in ultralight category extremely stable performer 80 hp Rotax 912 with 200 hrs 80 mph cruise at 75% power, 6 month written warranty, $32,900 or $9,900 less engine and equipment, also has mount for Rotax 582. Call Mac at Macpat Rotac Service Center 519 848 3392 or macpat@bellnet.ca

2 Zenith 300 projects 30% completed. Excellent workmanship. Price of materials only. $3000 Ayton On pennantmanor@hotmail.com

1941 Taylorcraft with Lycoming 65, approx 500 hours on engine, about 2400 on airframe. Cream with red trim excellent condition, in annual until June 2007. $18K OBO. Owner recently deceased. Please contact Glen Morrison at 519-837-1068.

1996 Zenair Zodiac, Cont. 0-200 161 hrs. A/F 374 hrs. Beautiful flyer. Photos available on request. Must sell, bought RV-9a. Asking $28,000 CDN. 519-442-2962 dorothybenton@hotmail.com

1975 Cessna 150M C-GEBX. 5006 TT, 1671 SMOH Continental 0-200A. Annual completed July 2006. Wheel Fairings, Nav/Com intercom. Mogas STC. $26,000. Markham Airport.
Call John Parker @ 416-444-3015 or e-mail to john.lynn.parker@sympatico.ca

Modified A-75 Continental, balanced, no electrical , 64 hours AMO , dual advance magnetos , cross exhaust, price: CD$ 10 000 Call for details: (905) 484 - 0804 Rob

Aeronca Champ, 1946 3500 total 1200 eng. C85-8F complete restoration May/05, new spars, new mags, 5 gal wing tanks, New tires,Scott tail Wheel, Handbrake,Stitts covering,White, New interior,Everything replaced with newparts, Immaculate. $35,000.00 CDN, located, Calgary. 403-931-3449, George

Zenith Tri-Z project. All aluminum and 4130 steel for Tri-Z, including stainless steel firewall, and fibreglass cowling. Includes a pickled zero time C-145 6 cylinder built by a certified engine mechanic. Many parts are already fabricated including wing spars and ribs, elevator assembly and wheel parts. Plane and engine manuals are included. $17 K OBO. Call Bob Higgins at 905-827-0204

For Sale - Lycoming 0-320H2/160HP engine. All logs, certified, cylinders 2 and 4 overhauled, 1900 hrs. $8000. Contact Don 519-372-1383 or

continues

kinger@bmts.com

Modified A-75 Continental, balanced, no electrical , 64 hours AMO , dual advance magnetos, cross exhaust, price: CD$ 10 000 Call for details: (905) 484 - 0804 Rob

C-85 cylinders complete with pistons, rings. $800.00 phone for details. 519 323-0026

For Sale: Pair of C150 flat spring landing gears. Delcom 960 portable Radio. Red Dragon engine pre-heater Cessna 300 Nav/Com as removed from C150 For more detail contact by email: rudyhane@rogers.com or phone 519 648-3006 FEB 07

RV-7 Empennage. Prepunched with 0.020" skins, rudder taillight fairing and electric trim kit. Orndorff videos included. Approx. 80% complete with assistance from Kitplane Builders. CDN$1000.00 firm. Located in Stouffville, ON. Sean at (905) 640-4278 or sean@fungfamily.com FEB 07

Falco F.8L Parts For Sale
Complete tail section from frame 8 including empennage. (Slight damage) $1,750
IO-320 B1A (prop strike) 854 hrs. $8,000 with mags, starter, alternator.
Manifold Pressure/Fuel Pressure Gauge Instrument Flight Research $200
David Clark Isocom two place $200
Davtron M881B chronometer $100
Accelerometer $200
Airspeed in knots $100
King KI 206 $600
Davtron OAT $100
Apollo Flybuddy GPS $200
Edo Aire Turn & Bank TSO, C3a, Type II $500
Fuelgard $250
EI engine analyser Model US-8A-4 $500
Stabilizer/Elevator $900 with fittings
Fin & Rudder $500 with fittings
Flaps/Ailerons $1500
Falco standard canopy/windshield $1,500
Front spar $200, Rear spars $400, Control sticks assembly $200. Can be seen at Burlington AirPark
Contact: Mike Schuler 416 274 7467 email: mschuler@cbci.ca or Bob Trumbley 416 258 1424 email: bob@trumbleyhampton.on.ca FEB 07

For Sale: RV-4 project. Empennage finished. Flaps and ailerons finished. Wingspars finished..(Ribs were drilled and attached with glecoes. 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. Reduced $11000.- If you are in the London area a deal could be worked out on a heated shop. Call for more details or pictures (519) 461-1464 or contact ed@solairecanada.com FEB 07

For Sale: Eastern Electronics model E50 magneto synchronizer. Like new condition, still in the box. $40. Proceeds to RAA-Toronto Region. Ken 905-857-3218; kennan@rogers.com FEB 07

0320 cylinders, complete. $1,000.00 OBO Phone 519 -323 -0026
Wanting to buy a 150 hp Piper Pacer. 604 536 5155, or email ddanylyshyn@hotmail.com

Wanted

Wanted to purchase good or rebuildable 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

Ads run for a maximum three issues depending on space available. Please direct all classified inquiries and ad cancellations to garywolf@rogers.com

RAAC has sets of electronic scales that are available to members across the country for doing the weight and balance calculations on their aircraft. Here Member Gary Walsh uses the scales to verify the C of G on his amphib Kitfox. Only $30 for weighing. Contact the RAA office at 1-800-387-1028 to reserve a set.

On The Internet:
http://www.ocis.net/tvsac/buyandsell.html -more ads from our Kamloops chapter
http://www.lyncrest.org/sfcclassifieds.html -more ads from our Winnipeg chapter

New In Canadian Skies

Bruce McDermid's Original Design

Bruce McDermid is flying the time off his one-of-a-kind homebuilt aircraft from the Collingwood,Ontario Airport. C-FATY is built from 6061T6 aluminum sheet and stock commercial extrusions. His own design incorporates techniques and methods used in other aircraft such as various Zenith designs, Murphy Rebel, BD-4 and Whitman Tailwind. The airfoil of the wing is a riblett GA30U-A415. The airfoil used on the tail surfaces is a symmetrical version of a GA30U-A10. The wing cord is 48 inches with no flaps and the horizontal tail cord is 36 inches. He made the main landing gear from a spring made of cold, bent 2024T3 aluminum bar. It is two piece attached to a cross-member made of 2 x 2 x .125 aluminum tube. The nose gear is a direct steer type of steering that is sprung by a steel coil spring. The aircraft frame and longerons are made from aluminum angles, tubes and gussets. The engine is a Subaru EA81 with a PRSU designed by Dave Johnson of Manitoba that has been slightly modified but otherwise built from his plans. Using a cherry bomb muffler and long exhaust pipe suspended under the fuselage the aircraft is very quiet and smooth. Stalls around 50 mph and cruise speed is approximately 95 mph.

RAA Chapters and Meetings Across Canada

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

ATLANTIC REGION

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

QUEBEC REGION

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

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

MONTREAL (LONGUEUIL): Chapter 415, Meeting in French second Wednesday at 8 pm, at CEGEP Edouard Montpetit 5555 Place de la Savane, St. Hubert, PQ. President Jacques Genest president@raa415.qc.ca (450) 447-9042

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

ASSOC DES CONSTRUCTUERS D'AVIONS EXPERIMENTAUX DE QUEBEC (QUEBEC): Third Monday 7:30 pm at Les Ailes Quebecoises, Quebec City Airport. 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 fdnmeball@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 CYKF, except during the summer months when we have fly-ins instead. Please contact arankaddd@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 Jim Morrison, 905 434 5638, jamesmorrison190@msn.com

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

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

SAUGEEN: Third Saturday for breakfast at Hanover Airport. Contact: Ed Melanson 519-665-2161 meled@wightman.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 northerntailwind@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 CanadianFlight/Roof Top Cafe at Wiarton-Keppel Airport. As there are sometime changes, contact Brian Reis at 519-534-4090 or earlycanflight@symptico.

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@yahoogroups.com

SASKATCHEWAN
NORTH SASKATCHEWAN: Third Monday 7:30 pm at Kelsey SIAST Institute. ContactDwight Young (President) 306-242-2473 for info.
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, Chandelle 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 Vlake 604-820-9088 email javlakeca@yahoo.ca
DUNCAN: Second Tuesday 7 pm members homes (rotating basis). Contact Pres. Howard Rolston, 250-246-3756.
OKANAGAN VALLEY: First Thursday of every month except July and August (no meetings) at the Kelowna Yacht Club. Dinner at 6:00pm, meeting at 7:30pm Contact President, Cameron Bottrill 250-558-5551 moneypit@junction.net
QUESNEL: First Monday/Month 7:00 p.m. at Old Terminal Building, CYQZ Airport. Contact President Jerry Van Halderen 250-249-5151 email: jjwvanhalderen@shaw.ca
SUNCOAST RAA CHAPTER 580: Second Sunday 13:30 pm Sechelt Airport Clubhouse, sometimes members homes. Contact Pres. Gene Hogan, 604-886-7645
CHAPTER 85 RAA (DELTA): First Tuesday 8pm, Delta Heritage Airpark RAA Clubhouse. 4103-104th Street, Delta. Contact President Gerard Van Dijk 604-319-0264, vandijkg@yahoo.ca. Website http://raa85.b4.ca.
VANCOUVER ISLAND AVIATION SOCIETY (VICTORIA): Third Monday 7:30 pm Victoria Flying Club Lounge. Contact Pres. Roger Damico, 250-744-7472.
THOMPSON VALLEY SPORT AIRCRAFT CLUB: Second Thursday of the month 7:30 pm Knutsford Club, contact President - Dick Suttie Phone 250-374-6136 e-mail - richard_suttie@telus.net
ALASKA HIGHWAY: 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, 13691 Mclaughlin Rd., RR 1, Caledon, Ontario L7C 2B2 Tel. 905-838-1357, Fax 905-838-1359 or call toll free 1-800-387-1028 email raa@zing-net.ca

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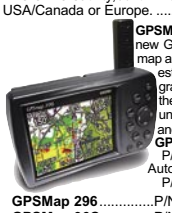

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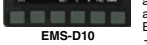

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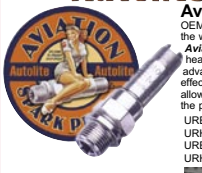

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