RECREATIONAL FLYER

January - February 2008

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

RAA
RECREATIONAL AIRCRAFT ASSOCIATION
RÉSEAU AÉRONEFS AMATEUR CANADA

from the president's desk

Gary Wolf

2008 RAA AGM and FLY-IN TO BE HELD IN WINNIPEG

Harry Hill and the members of our Winnipeg chapter will be hosting the 2008 RAA AGM at their weekend fly-in on the June 6-8 weekend. Members who went to Winnipeg for our AGM in the Fall of 2002 will remember what a great weekend of events the chapter members organized. This time the event will be during the flying season, so we expect a good turnout of members flying in to Lyncrest Airport. Mark your calendars for this Central Canada Fly-in!

CERTIFIED COMPONENTS IN AMATEUR BUILT AIRCRAFT - UPDATE

In mid-November 2007 RAA received the discouraging and unexpected news from Transport that henceforth builders would not be allowed to incorporate formerly certified components into our Amateur Built projects. We called the Transport inspector who handles 51% determinations for MD-RA, and he confirmed that he no longer intended to allow the use of components from certified planes. RAA asked for him to draw a line between the major components to which he objected and the minor parts like gascolators, but he was unwilling to do this. This seemed to be an unreasonable position for a Transport inspector to take, but this was certainly not the first time we have seen unusual behaviour from this inspector.

A call to the Chief of Policy brought more favourable results, and he agreed to postpone the prohibition until the final document had been written. It was business as usual for awhile, and many of our members rushed to open files and have 51% determinations done for projects that were to use parts from certified aircraft. Transport's policy during this interim period was that there would be no credit towards 51% for any major components whether or not they required any rework.

It came out that the reason for this rapid change of policy was that the FAA objected to Transport's 51% evaluations that have allowed a Canadian to dismantle an old certified plane, and to rebuilt it as an Amateur Built. Using the FAA's own 51% list it is possible to do nothing more than dismantle a plane and reassemble it, and this meets their requirement. Every formerly certified plane that underwent conversion to an amateur built in Canada had its 51% approved by the self same Transport inspector who shut the door in November.

Now not many were doing this but a few were, and the FAA did not wish for any of these conversion aircraft to end up being sold into the US. They had asked for an export document from Transport for every Canadian amateur aircraft that was sold to an American, but Transport was unwilling accommodate this request. Instead Transport offered to prevent future conversions by using a very narrow interpretation of 51%. To that end they are proposing to allow zero credit for reused components, even if they were to be substantially reworked or rebuilt. RAA objected to this wording because reworking and rebuilding are exactly the skills that we wish to encourage in amateur aviation. RAA recommended that if their objection is to the dismantling and reassembly of an aircraft, they should say just that, and stop using a sledgehammer to swat flies. It is curious that at no time has safety ever been trotted out as a Transport or FAA concern. This is all about crossed T's and dotted I's. Regulators write regulations - they do not build planes.

Transport's meeting with FAA will be very soon, and as soon as we find out how firmly the US plans to step on Canadian sovereignty, we will be letting our members know first, on the Announce and National email lists. Meanwhile, do not write a cheque for a pile of formerly certified parts unless you enjoy rolling the dice.

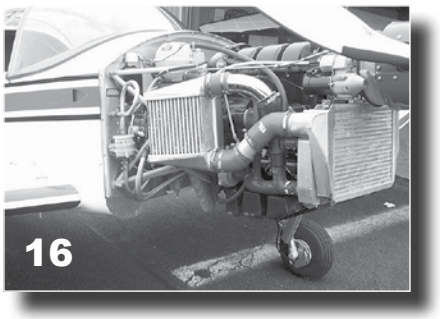
CLARIFICATION OF REC AND PRIVATE LICENSE PRIVILEGES

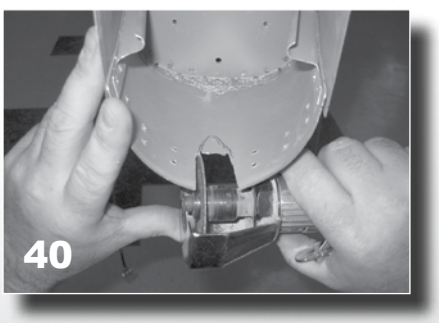
continued on page 34

The Recreational Aircraft Association Canada
13691 MCLAUGHLIN ROAD, R R 1,
Caledon, Ontario L7C 2B2
Telephone: 905-838-1357
Fax: 905-838-1359
Member's Toll Free line: 1-800-387-1028
email: raa@zing-net.ca
www.raa.ca

The Recreational Flyer is published bi-monthly by the Recreational Aircraft Association Publishing Company, Brampton Airport, Cheltenham, ON L0P 1C0. The Recreational Flyer is devoted to the aerospace sciences. The intention of the magazine is to promote education and safety through its members to the general public. Opinions expressed in articles and letters do not necessarily reflect those of the Recreational Aircraft Association Canada. Accuracy of the material presented is solely the responsibility of the author or contributor.

features





On the Cover: Chapter 85's Adrian Cooper zips around the pylons in his Cassutt "Miss T'witchy". Builder was Jack Pomerleau. Photo by Don Souter.

Don Souter

Racing At

Don Souter

Part 1 / This adventure actually started over a year ago, as we watched Jack Pomerleau build, paint and fly his Cassutt. All the while Adrian Cooper was pestering him to make it into a racer; Jack's intention was only to beat the local RV pilots to Chilliwack for pie. Flying it in the Reno Air Races was the furthest thing from his mind.

Reno

Chapter 85's Adrian Cooper and Crew Mix it up in the SouthWest

By Joan Cox / Pictures by Don Souter and Joan Cox

Adrian finally convinced Jack to sell to him and come on board as Crew Chief. In passing Adrian explained what his plans were for the Cassutt and Chris (husband) said that he was awfully interested in helping in the pits, and with lots of experience in fabricating things and fiberglassing, he would be an asset. Adrian said thanks at the time as he'd had lots of offers. Months later Adrian approached us and asked Chris to be part of his crew. I was excited, telling them that they would have lots of fun. Adrian surprised me and said he wanted me along, that they were going to need someone to go for coffee/food at all hours. Go for coffee, Humf! He wants me as a GOFER! I'm much more than that, I thought to myself, feeling honoured and insulted at the same time. A gofer indeed! He doesn't know me that well... in the end I was more the team Mother than the team Gofer!

As the months go by, things changed on the Cassutt, as modifications were made to the airframe to make it more streamlined. Decals were made up to indicate emergency openings and other necessary info. Chris' time was taken up by making landing-gear fairings and modifying the wheel pants, reshaping and repainting the cowl; wheel pants had spacing reduced around the wheels to lessen drag while Jack and Adrian worked on the race engine and secured a new race prop. When possible Adrian worked on his flying maneuvers over Boundary Bay Airport.

June came all too soon: Adrian flew down to Reno/Stead Airport for Rookie Racing School, followed by Jack with parts and tools. Adrian completed the mandatory ground school and only part of the required flight maneuvers as he is unhappy with the aptly named Miss t'witchie. The rest of the maneuvers will have to be completed before he is eligible to race in September. An opportunity never came up though. Lots of evenings and week-ends were spent working on the aircraft. At a local pub one evening, talk turns to having team uniforms; we are in our rookie year and though it would be nice to have it is another thing on our plates. I figured it's not too hard to come up with a team logo as Adrian's race number is a lime green 9 on a purple Cassutt. No sweat. Within minutes of arriving home that night I had a logo

Don Souter

made up. A company was found and golf shirts and t-shirts for the team were made up.

More modifications were made over the summer months and September came all too soon. A week before the races began (September 4) Jack and his wife Judith head out in their 5th wheel, the next morning (Tuesday) Adrian with a loaded and itemized list drove to Canada Customs at the Peace Arch border crossing to have it certified as being personal property and not for sale. Adrian left the next day (Wednesday) and on Thursday Chris and I began our adventure as we set out for Reno in Adrian's Jimmy, a utility trailer in tow with tools, extra engine and propellers and Adrian's clothing as well as his girlfriend Donna's clothes (she's to fly down on the Sunday, but due to work and home construction was unable to come down and was only able to lend moral support during their night phone calls to each other). So began our adventure to Reno Air Races 2007.

Joan Cox

Joan Cox

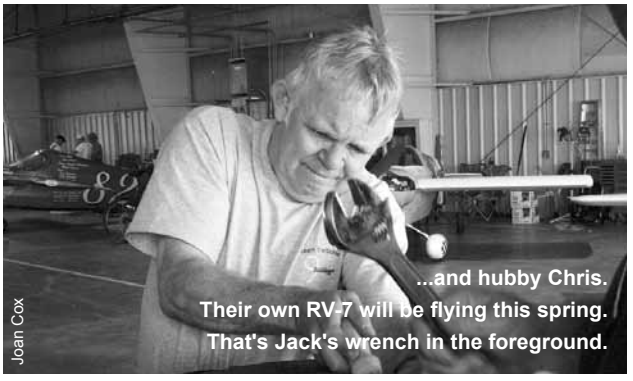
Top: Always time for the public: Chapter 85's Adrian Cooper talks to some young race fans. Above, Jack Pomerleau furrows the brow during tech inspection. When he started building the Cassutt, all he wanted was a way to beat all the RV drivers to Chilliwack for pie.

5:30 am: the alarm goes off at the usual work day time, but today we begin our trip to Reno. We are up, showered and giving last minute instructions to our three adult-still-living-at-home children (can you call them children, when their ages indicate that they are no longer toddlers or teenagers, but many times they act like they are?). Feed the cats and fishes, water the plants, take out the garbage on garbage day, don't let dishes pile up in the sink, no parties, sleep-overs etc.....

That done we are out the door and on our way. Three blocks from home we have to turn around to collect a forgotten item; 20 minutes later we are approaching the Peace Arch border crossing in anticipation of what may lay ahead, as we are driving someone's vehicle and towing a mini-trailer with things that we did not pack ourselves. The worry was for naught as we were through the border with only a couple of questions asked and answered to the satisfaction of the border guard. Our intention was to get to Klamath Falls for the night and into Reno late Friday afternoon. Down the I-5 we take a short detour to Aurora, Oregon and the Van's factory to pick up parts for own airplane that we are building (RV-7), with a quick bowl of soup for lunch, and fuel for the car we again are on our way. We pull into

Chapter 85's very own Newsletter Person Joan "Rosie" Cox...

Joan Cox



...and hubby Chris. Their own RV-7 will be flying this spring. That's Jack's wrench in the foreground.

Joan Cox

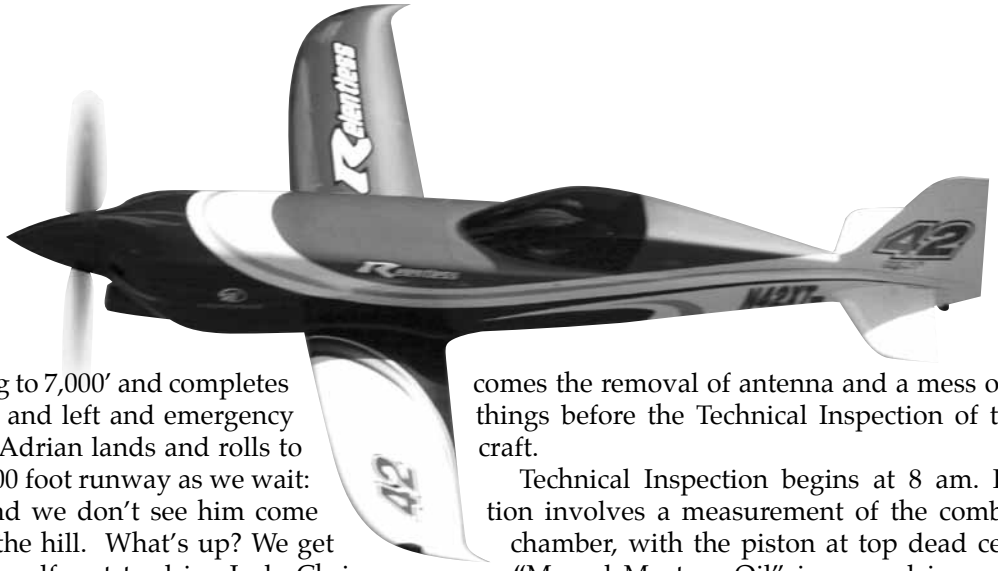
Joan Cox

A fellow pilot has just come down from a practice flight and says it's a little bumpy but manageable. Adrian decides to go and fly

Klamath Falls just as the low fuel light comes on. Perfect timing! We get gas and cross the road to the Super 8 Motel across the street where we check in. Finding out where the best Mexican restaurant is, we plug the name into our Auto Garmin C330, following the directions we pull into to "Sergio's", a tiny place. The margaritas are the telltale sign of what the food is going to be:good drinks usually mean good food! We got both at Sergio's... so if you are every passing through or staying in Klamath Falls, Oregon be sure to have a meal at Sergio's.

After a good night's rest we are on the road with the GPS programmed for Reno/Stead and our arrival there to be at 1:24pm. That's straight driving time, but that won't happen as we need to eat and gas up which will add about an hour. Shortly after 11am and 15 miles out of Susanville we encounter smoke. Fog-like smoke with just about 1-1/2 to 2 mile visibility. Jack & Judith came through later and said that it was black smoke and dark; a forest fire near Honey Lake was the cause. We get a call from Adrian about the same time asking what our ETA is as he has broken the tail wheel assembly while taxiing to the fuel pumps. His wait will be a couple of hours; it's 2:30pm before we roll up to a smiling Adrian at the gate near the Formula 1 hanger. We have arrived! There is little time to take in my surroundings since as soon as things were unpacked Chris and Adrian set about putting on the non-steering tail wheel assembly. Once completed we push the airplane out of the hangar (our spot is the last bay on the second row) up to the no-prop zone (a white chalk line that no running props can cross) so that Adrian can do his final maneuvers.

4:45 pm: It's windy and Adrian is given the option of doing it tomorrow. A fellow pilot has just come down from a practice flight and says it's a little bumpy but manageable. Adrian decides to go and



fly, after ascending to 7,000' and completes a roll to the right and left and emergency mayday pull-up. Adrian lands and rolls to the end of the 7,000 foot runway as we wait: minutes go by and we don't see him come over the crest of the hill. What's up? We get a tow driver in a golf cart to drive Jack, Chris and I towards Adrian. He is stuck. With the jerking motion needed to turn the aircraft the roller-blade wheel had torn apart so it was necessary to tow him back, Jack and Chris sit on the back of the gold cart holding onto the tail and with Adrian, myself and Ed the tow driver up front we roll slowly back to the "no prop line" Kirt (pylon school judge) informs Adrian when we get there that when the Formula One office opens in the morning he will submit the required paperwork so that Adrian will be officially registered. Yippee! He then can get all the wrist bands, banquet tickets that he had paid for, as well as the freebies and other goodies in the pilots bag. By 7:30 we are checked in to our hotel at the Holiday Inn with a dinner in our bellies and a short walk down memory lane (last time for us here was 1985, a lot has changed), we both decide that if it was not for the Air Races we would not have come to town. We are off to bed as we had decided to get an early start in the morning.

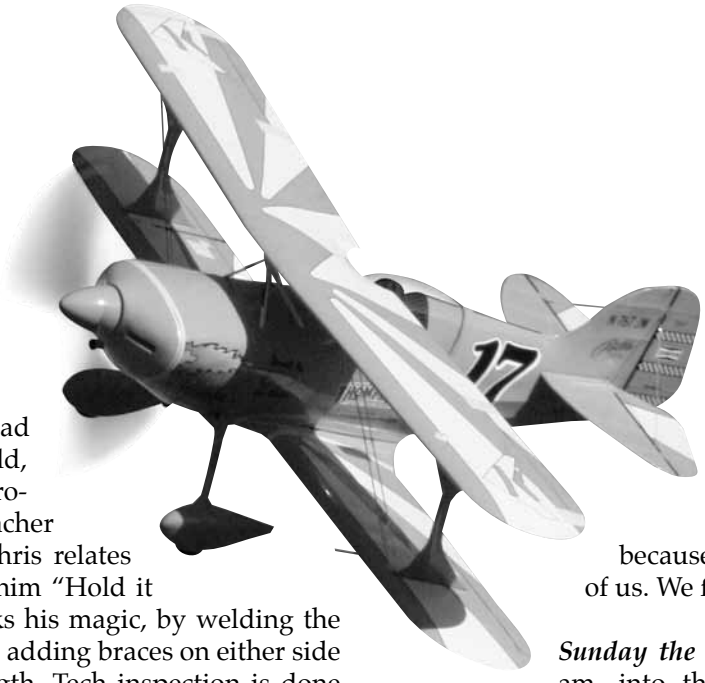
Saturday Sept. 8th - We are up and meet Adrian in the lobby (we are at the same hotel) at 6am. We head to the airport and make short stop at a grocery store (where we bump into Jack) to pick-up ice and some munchies. We pull into the parking lot beside the F1 hangar at 6:30am with lots on the agenda. First order of the day is to drain the fuel tanks, during races all participating airplanes must use fuel supplied by the airport (but paid for by pilots). That done, next comes the removal of antenna and a mess of other things before the Technical Inspection of the aircraft.

Technical Inspection begins at 8 am. Inspection involves a measurement of the combustion chamber, with the piston at top dead center, a "Marvel Mystery Oil" is poured in and measurements taken, minimum capacity is 135 cc, ours is 136cc) Cam lift profile inspection, weight and balance (with and without the pilot, our is at least 100 lbs over the limit) as well as overall airframe inspection. I take a lot of pictures, most of them looking over the tech inspectors' shoulders. Chris tells me to quit getting in their way, but I tell them that because this is our rookie year I want to document everything by taking as many pictures as I can (over 500 in the week we were there). The tech guys were great about it, answering all the questions I had about what they were doing and why. They said that they were there to help us stay safe and that engine and aircraft must conforms to the rules and regulations: the engine must be a Continental 0-200, overall wing area must be no less than 66 square feet., fixed gear, a pilot with a weight of 165lbs (with or without ballast) or more. And those are just *some* of the rules.

At 9 am Kirk rides by on his bike and lets Adrian know that the paperwork is filed and Adrian is set to register. Yippee, we can fly! The last part of the tech inspections involves Tech inspector Frank doing a visual inspection of the aircraft and then sitting down with Adrian and going over paperwork to may sure all documents are in order. About this time Chris leaves with a guy named Gordon who is a master craftsman who will fix our broken tail wheel. (When he was in the

Joan Cox

Left: Team T'witchie poses for the cameras. Left to right: Chris and Joan Cox, Jack Pomerleae (builder) and Adrian Cooper. Standing behind is Alex Fuchs.



third grade Gordon's dad taught him how to weld, and becoming more prolific than his shop teacher by the ninth grade). Chris relates later how Gordon has him "Hold it steady, Jed" as he works his magic, by welding the two pieces together and adding braces on either side of the stinger for strength. Tech inspection is done by late morning and I begin polishing the airplane. Adrian had used gas to wipe off the grease from a previous flight and it had left a cloudy film on the aircraft. As I am polishing, other aircraft are coming in and setting up. Tools, planes, chairs, coolers, food, banners and the likes come out. Interesting watching and noting what other teams bring. I've got a lot to learn. Who would have thought that a broom and dustpan are necessary tools?

2:30 pm: with lunch in our bellies, we are back in the pits ready to put the rebuilt tail stinger back on. Getting the brake cable set just right took some work, but its finally on. By 4pm Jack leaves to take Judith out for dinner, wine and some casino. While Adrian relaxes, Chris & I spend a little time taping up drag inducing edges, after a short bit we wash-up.

Coming back from the bathrooms we spy Adrian at a green and white Cassutt with Canadian markings. Hot from the flight, Adrian helps remove the cowls. Pilot Larry Mashowski from Calgary is tired, I offer him a Gatorade which he gladly accepts. We leave him to wait for one of his pit crew that was coming in by car. Tom Watkins arrives about an hour later. 6pm, We're at Walgreens to get the pictures I took put onto a CD and we all have a light dinner at Denny's. I'm learning to order smaller portions while in the States. Senior sizes for me, or Chris and I will share a meal if we are feeling like eating the same thing. Back at the hotel, we watch a little Discovery channel and fall asleep before 11pm because we have a big day ahead of us. We fly to qualify tomorrow.

Sunday the 9th. Wake-up call at 5:30 am, into the shower and down to the lobby to meet Adrian at 6. By 6:03 we are rolling down the road, our usual stop at Scolari's for ice, fruit and snacks. Jack's smiling face greets as we walk up to the airplane, we have time to finish the tape job before we take a walk with Adrian to the far end of the flight line for his pilot's briefing (morning pilot meetings are mandatory).

Chris and I wander through the Harvard (T-6) pit area on the way back to our own pit area. Arriving early to the races and having pit access gives you the opportunity to explore areas most people never get to experience. It is quiet and peaceful walking through the flight line. Pictures are taken of airplanes with the sun coming up and no one around. Wonderful! We wonder at the money that is spent on these and other high maintenance machines. Amazing. Back into the pits, Jack, Chris & I walk the Cassutt to the run-up line to reset the timing. Jack can't see the marker; we try using the only thing handy, my red lipstick. No good, too dark. Now what? Looking around I see that the 'no prop line' is actually a chalk line: perfect, that should do the trick for the time being. It works for the most part. Note to self: bring white out next year, 'cause you never know! Adrian walks up from his meeting as we are replacing the last screw to the cowl. Good timing. We push the plane to the end of the line of airplanes waiting to practice or qualify. No flights before 10am and

Don Souter

Joan Cox

Canucks redux : Canadians from Calgary -Tom Watkins the pilot - second owner Larry Mashowski hopes to be flying next year also.
Below, Chapter 85 member Shona Hirota helps the crew while Chris relaxes

Joan Cox

we are number 8 on deck, so I have time to walk back to the pits and get sunglasses, wipe rag and camera. I snap some pictures of the practice line. Adrian's turn, he starts the engine, Jack holds the tail with Chris on a wing-tip, more pictures taken. Jack hand signals Adrian the A-OK. Adrian is then given the all clear to taxi and take-off by the ground crew chief.

By 10:15 Adrian is off the ground. He, like others before him, have only allowed five laps around the race course. Adrian is flying wide of the pylons on the first two laps, the last three laps were much better, low and tighter. It turns out that two of the six pylons were not lit up so it was difficult for Adrian and other pilots to get a track on the course.

11:30 am: Pilot and Crew meeting that all must attend, practice went well, a few minor issues ironed out and with the passing on of a number of flying and safety tips we disband.

Chris and Jack remove the plugs and Adrian sets off to see if he can buy a new set. Success: with a new set in the plane and the old ones being cleaned, Adrian is off again for more cash for a second set of plugs and to get lunch for us. Chris wanders off to snap some pictures of other Cassutts and Sport planes while I have a cat nap. (I did a lot of that, daily naps in the afternoon).

4:00pm - Pilot of #17 Cassutt racer unloads his fuselage from his trailer which is parked in the hangar and in front of us. We are planning on doing another practice flight when Jack & Chris finish with their meeting; hopefully he will be out of our way. #17 is still in our way, so a bunch of us give him a hand as he had began assembling his plane in the walkway. With more hands his plane is out of our way and we walk ours out where Jack checks the timing once more before Adrian practices. Don Souter stands with us as we watch Adrian round the circuit, with radio to his ear he hears Adrian call a "Mayday". Adrian safely lands

Other modes of transport: Top, the always impressive Thunder Mustang. Cheaper than the WW2 variety and almost as fast. Right, top, "Cruzin' Coolers" an important alternative way of getting around. Right bottom, Delta Airpark's Tony (standing) and Mary Swain hitch a ride on a golf cart. Beats Walking! Joan Cox Photos.

and after a lengthy debriefing with Adrian, Jack and Chris we roll the plane back to the pits.

6:15pm - Jack & Chris with the cowls off are sitting below the engine discussing the options, as Adrian is having a problem with the idle mixture. A new carburetor is the answer, but they have a problem removing the old one: a screw breaks in a little bracket and the guys are having trouble removing it with no vise to hold it. It ends up getting broken, great! We are in luck as Curtis Weinman (other pilot) says he has one bracket we can have. Adrian orders a new one and has it shipped directly to Curtis when he gets home. What a great helpful bunch of guys and gals we were lucky enough to meet. Always there for support, an engine part or broom and dust pan, a cup of tea or coffee. Next year we will be more prepared.

By 8 pm we are done for the day. Why are we one of the last ones out of the hangar? Rookies! You sure can spot them in the hangar: and like us there is always something to tweak. The long time fliers have well-oiled, polished aircraft; all they have to do jump in and fly. They are nowhere to be seen.

Maybe that will be us in five years.

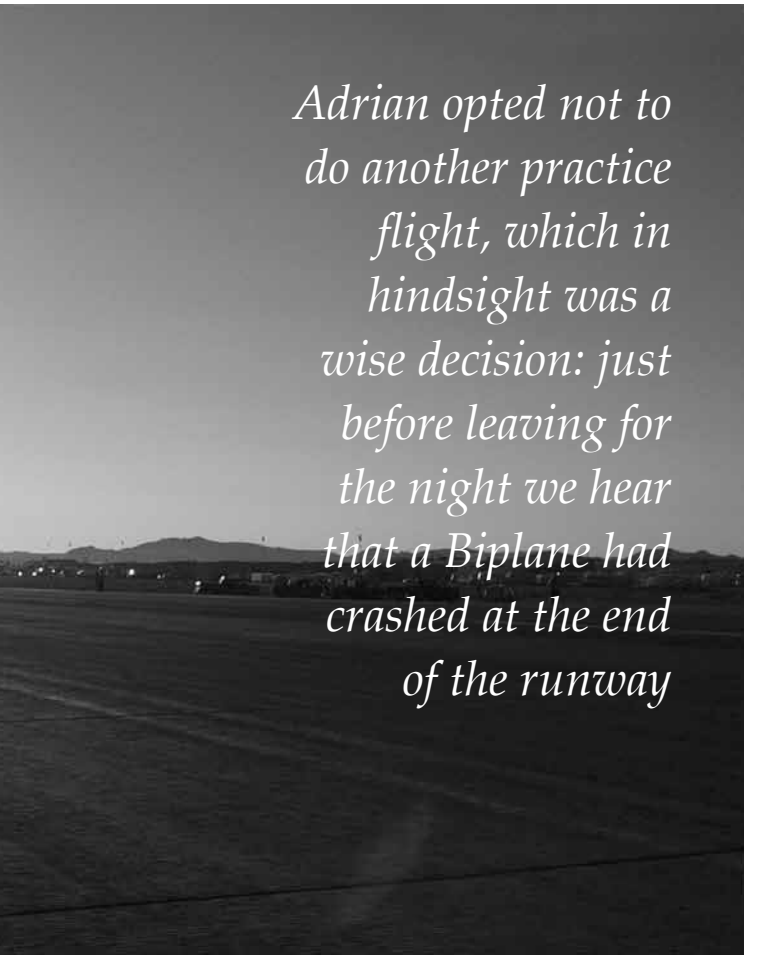
Monday Sept. 10th, 5:30am - Time to do it all again, meet in lobby, drive to store, drive to airport, but today we must park in a designated parking area and have parking pass visible and pit-pass wrist bands on. It is now mandatory to wear our arm bands when we are on the apron, taxiway or runway. No arm band, no access! (ours are orange -denoting Formula 1, other colours were assigned to the other divisions purple, red, yellow, etc). The airplane is pushed out and a run-up is done in the designated area and after a few gallons of gas in tank we roll out to the already long row of planes wanting to practice. We are number 14 on the line. Adrian is up at 8:25 and puts in a good practice flight. He's happy with everything, that's it, after a quick oil change preformed by Adrian (we let him do it), then a little more taping of seams, we are actually done for the day by noon!

1:00pm - I head out to the front line to watch the Harvards practice. Wandering down through the pits, snapping pics as I go check out 'Glacier Girl's' booth and pick up a poster of her coming out of the ice. Very few people around so nice to be able to wander without a crowd. Back at our pit area a couple of hours later to find Alex Fuchs has moved in beside Jack and Judith. Alex becomes our tow driver. Alex & Chris spend an hour polishing.

Around 5 pm, Chris decides to make some ramps

for the air intake to cut down on the eddies just inside the cowl. Good thing he suggested we bring down some aluminum, because you never know. (I have a box labeled just that because 'you never know' when you might need it.) Even though we didn't do too much on the airplane it is still late when Adrian, Chris & I hook up with #78 Limelite's crew chief Tom Watkins for dinner at the Grand Sierra. Too long of a wait at the Steakhouse and being tired and hungry we opt for the buffet. After dinner we walk around the 'Pylon Lounge' which after the races this year will be revamped into a Western theme bar. Too bad, a lot of history there, planes hanging from the ceiling, including one of the first Cassutts to win Gold and Reno. The Murals on the walls and ceilings are cool too. Almost 11pm when we retire for the night. Adrian is going to try and qualify tomorrow.

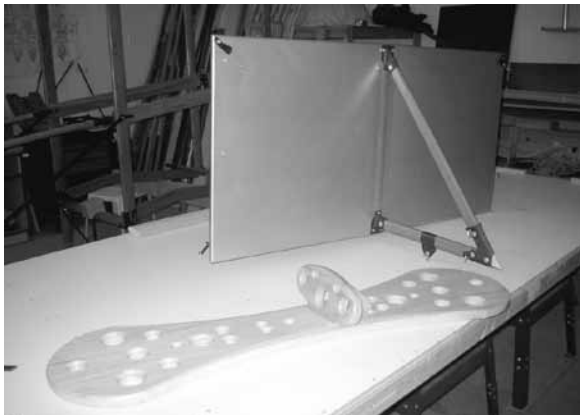
5:30am Tuesday 11th - Up and on the move. Pilot meeting as usual and we push out the plane with others that want to qualify. No flying before 8am, so we wait. Adrian is in the air at 8:14am and does two practice laps, and passing the last pylon (#6) he

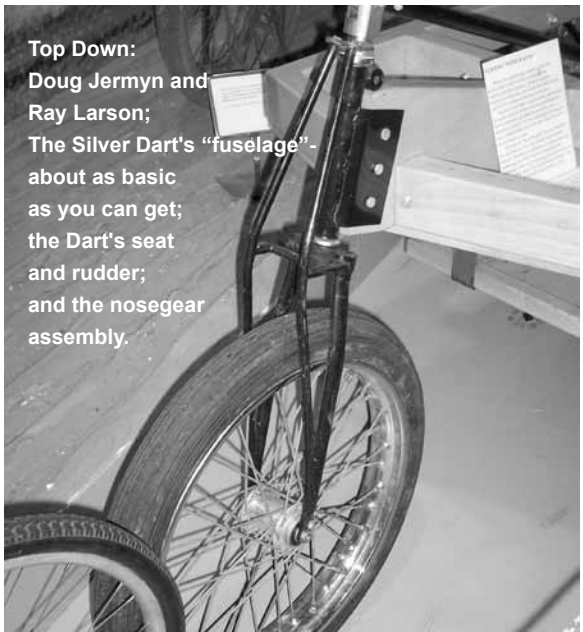


rocks his wings to indicate that he is ready to have his next two laps timed, and to have that officially entered as a qualifying time. Timing starts at Home Pylon located in front of the Grand Stands, with flaggers on the ground waving a huge green flag to start you, and a checked flag waves when finished. His lap time of 182.977 mph is posted. Next year if there are more planes than spots available (24 places) 8 in 'Gold', 8 in 'Silver', and 8 in 'Bronze' we will have to be much faster.

9:30am - After I share a huge breakfast burrito with Chris, the guys do a nuts & bolts (hardware) run while I relax and write. By 11am the boys are back and are adding washers to the engine mount; next the starter comes off as 'Miss t'witchie' needs to go on a diet. Chris makes a new bracket for the timing pointer (no wonder it was off). Jack, Chris and Adrian spend over a hour refitting the cowl over the engine because of the adjustments made to it earlier. Time to do more roaming and picture taking before going to the meet and greet set up in our hangar for Formula One pilots and crew. We spend a few hours relaxing, as Adrian opted not to do another practice flight, which in hindsight was a wise decision: just before leaving for the night we hear that a Biplane had crashed at the end of the runway and the pilot was killed. Awful way to start the races. The airport is shut down till midnight.

Next Month: Part 2.





Top Down:
Doug Jermyn and
Ray Larson;
The Silver Dart's "fuselage"-
about as basic
as you can get;
the Dart's seat
and rudder;
and the nosegear
assembly.

Silver Dart Replica

For three years a garage beside a Harold Avenue home has been housing a piece of Canadian history. Not a piece of history, exactly, but a replica of it that marks Canada's first successful powered flight.

By Derek Swartz

A dedicated group of aviation enthusiasts has been building a full-scale replica of the Silver Dart, Canada's first powered flying machine.

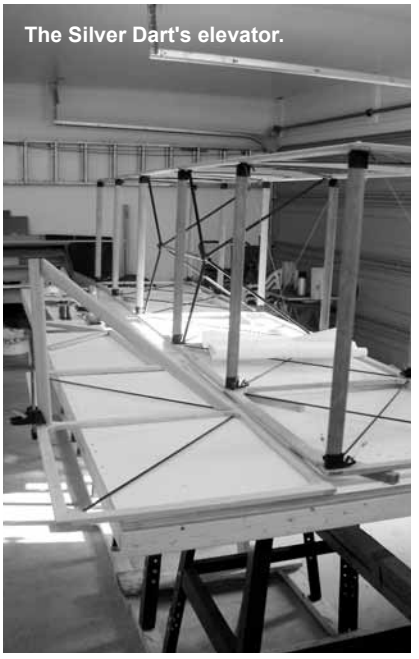
The Silver Dart Centennial committee is building what is to its knowledge the only full-scale replica to commemorate the 100th anniversary of Canada's first powered attempt to reach the sky.

Ray Larson, a Fonthill resident and vice-president of the Silver Dart Centennial committee, says his group intends to fly it at the centennial celebration planned for Baddeck, N.S., on Cape Breton Island, on Feb. 23, 2009.

Getting this Silver Dart airborne is only one reason they've spent so long on the project. Education is another.

"We're a group of airplane enthusiasts," Larson explains. "We got together and asked ourselves what do Canadians know about their aerial heritage. The answer was not much."

The Silver Dart is the starting point in Canada's ascent


The Silver Dart's elevator.

to the sky. Together with Alexander Graham Bell and his wife Mabel, who bankrolled the venture, engineers Douglas McCurdy and Casey Baldwin, Glenn Curtiss and U.S. Army Lieut. Thomas Selfridge formed the Aerial Experiment Association (AEA) in 1907. Bell, who is best known for having invented the telephone, was an early believer in powered, human flight. From his lodge in Baddeck, the AEA designed and built various prototypes before developing the Silver Dart.

Built out of wood and wires, and using a V-8 engine that produced about 35 horsepower, the Silver Dart incorporated a number of designs that are now standard on airplanes.

On Feb. 23, 1909, the Silver Dart became Canada's - and the British Empire's - first, powered human flight, when McCurdy took it on a half-mile flight in front of a stunned audience of hundreds on Baddeck Bay.

The Silver Dart had some 300 successful flights in and around Baddeck and Hammondsport, N.Y. With McCurdy piloting, the Silver Dart made the first one-mile (1.6-kilometre) flight in North America, and eventually made a 21.5-mile (32-kilometre) flight.

The plane is believed to be the first to incorporate ailerons, or flaps, on the wings to reduce roll and possibly the first to go airborne under its own power. (The Wright Brothers' planes bent the wings in order to combat roll and required a catapult to provide the initial runway propulsion.)

For three years Silver Dart Centennial members have spent two mornings a week inside the Harold Avenue garage, building their replica.

"What else are we going to do?" asks Jaro Petruck. "We don't drink beer - on the job. All we smell is shellac."

It's a job made all the more challenging by the fact that the plans appear to be reverse engineered. Thousands of parts have had to be handmade - pieces like turnbuckles, which are threaded and welded pieces of metal used to anchor the wires in the wooden frame. The wires keep the entire structure under tension, a key design feature. "Everything you see is wood in compression. It makes for a very strong, rigid structure," Larson says.

It's a faithful reconstruction, but with a few modern updates. In addition to using bamboo, the crew - which also includes Doug Jermyn and Bill Manuel - have used sitka spruce and ash. RAA

Jodel Diesel

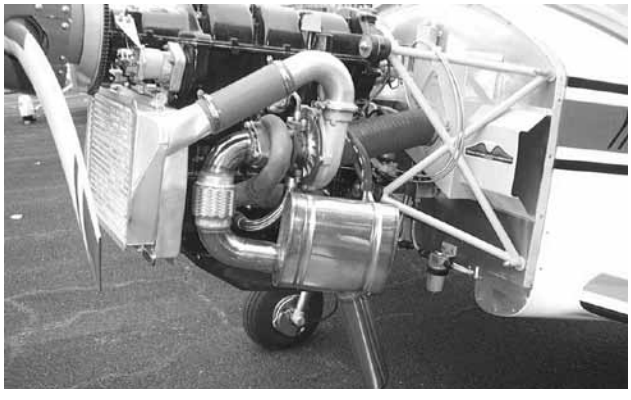
I FIRST SPOTTED THIS UNIQUE AIRCRAFT in the Popular flying magazine of the UK LAA [formerly PFA]. I immediately contacted the owner Mr. Peter Fines, a retired scientist. During a recent visit to England I was able to locate Mr. Fines at the Strubby airfield near Mablethorpe on the east coast of Lincolnshire on a cool 6 degree C day. The aircraft, a D153 Jodel Mascaret serial #148 and registered as G-RIVE, shared a hangar with a couple of other aircraft and looked outstanding in finish and details. The interior was delightful. Obviously a brand new aeroplane.

The one thing that really made it stand out was the slim streamlined nose enclosing the 120 horsepower Wilksch three cylinder two stroke inverted diesel engine. This resulted in the fuel label at the fuel tank filler stating "JET-A1". How many Jodels do you see with this declaration?

I enquired of Peter why he chose a diesel engine for his home built project. His reply was that he had done a reliability assessment into the record of avgas fueled engines versus the diesel and the diesel won out as 50 percent safer than the 'petrol' engines. His research showed that the safety record of avgas engines was compromised by such things as carburettor icing, vapour lock, magneto failure and the old bugaboo of hand starting with the throttle too far advanced causing the aircraft to depart on its own without proper supervision. An additional safety factor is the reduced volatility of jet and diesel fuel over that of avgas meaning that it there is less chance of an inadvertent fire compared with avgas.

Of course fuel injected engines do not have the carb ice problem but can have the other items listed as liabilities. The reduced volatility of diesel type fuels greatly reduces the chance of vapour lock. No magnetos means no mag failures. The dangers of hand starting is eliminated due to the fact that it is impossible to hand start this diesel engine, a feature it shares with turbine engines. In turning the engine the starter also pressurizes the crankcase in true two stroke fashion by means of a gear driven supercharger. The crank case pressure forces air into the ported cylinders which are exhausted via poppet valves driven by a camshaft situated in the oil sump and continually running in the engine lubricating oil which also lubricates the fuel injector pump so that it will withstand the rigours of low lubricity jet fuel.

In light of compulsory electric starting one must ensure that the battery is always up to snuff or one simply does not go flying. Of course the rigours of diesel



Top Down: The Jodel's uncharacterisically long, sleek nose; the port side of the engine reveals some of the plumbing; Peter Fines, who chose the diesel engine for its superior reliability and worry-free operation: no carb ice, vapour lock or mag issues. Besides, it's great fun having a fuel port that says "Jet A".

engine starting means that the starter motor must be a sturdy one. With the high compression of the engine it has its work cut out for it!

In addition cold weather starting [+6C] meant a bit of extended cranking to get things going.

Peter was informed by Wilksch engineers that he has been using an outdated throttle setting for a cold starting. The engine should normally start in 2 to 3

{ ...he had done a reliability assessment into the record of avgas fueled engines versus the diesel and the diesel won out as 50 percent safer than the 'petrol' engines.

seconds of cranking at ambient temps down to 0 C . Peter's engine has been meeting this at ambient temps of 13C and above. Longer cranking at 0 degrees C or better may be the fault of tired glow plugs. Perhaps the operator's familiarization with the engine is also a factor. The factory has started these engines at down to –10C without pre heat but with much higher fuel settings

This new aircraft had flown off nine hours of flight testing with a LAA approved test pilot and was now waiting for its permanent flight authority. That meant that a demo flight would have to wait until my next trip over. What a wasted perfect flying day!

However the most obliging owner generously offered to wheel the aircraft out, despite having to move a C172, to do an engine run for me. I moved into the right seat to observe and get the feeling of the starting procedure. First the master switch was turned on. The key lock was turned to the first position to light up the glow plugs and left until the sophisticated glass engine advisory screen indicated that they were up to temperature. With the fuel shut-off [also useable as a crude throttle in an emergency] in the 'on' position the next procedure was to turn the key to its next position which activated the starter causing the sturdy starter to engage a Lycoming style starter ring gear. After 20 to 30 seconds of cranking the engine showed no sign of running. The key was released for a few moments to again heat the glow plug and presumably to cool down the starter motor. The next turn of the key to the start position was much more successful and the engine roared into life, idling at about 20 percent RPM with the exhaust driven turbocharger taking over the duties of providing pressure to the crankcase and maintaining full power to a much greater height than normally aspirated piston engines.

It is interesting that the tachometer is calibrated in percent of max RPM, just like the modern turbine engines with 100 percent being 120 horse power.

With its constant speed MT propeller the engine does achieve this for take-off.

However for the first flight the fuel shutoff valve control cable had slipped its casing at the firewall and the fuel valve was not fully open despite the button being firmly pushed all the way in. Estimates are that the engine was producing only 100 HP which proved to be quite adequate to fly the plane quite successfully with one up.

Being a liquid cooled engine one has to consider radiator cooling. Unlike a similarly powered RV9 at Netherthorpe airfield the radiator was left in the position set by the factory, right on the nose. The next challenge was to design and build an attractive cowling with adequate intake area and design to cool things down. This was inspired by exploiting the design of the air intake of a WW2 fighter, the Hawker Tempest. This design was scaled down and has been quite successful since unlike the RV9 the Jodel had no overheating problems on its initial flights. A NACA scoop has been installed on the right hand side of the cowl to provide cooling air to the turbocharger intercooler. This too was successful.

During the 10+ years of construction Peter amused himself while not working on his pride and joy by designing an altitude warning device. This all solid state device started life as an aneroid driven item but was redesigned by a son-in-law who was more up to date on the latest technology. This most professional looking device on the instrument panel has lights top and bottom to indicate an altitude deviation of + or – 100 feet. This signal is also accompanied by an appropriate audio tone in the heads sets, one tone for too far up and another for too far down. The theory here is that one can concentrate on traffic outside the cockpit and spend less time looking at the instrument panel. You know if you deviate too much [+ or- 100'] without looking.

{ When asked about the weight penalty... the whole installation including all fluids was about the same as a Lycoming O-235

When it came time to install the stall warning device Peter was disillusioned at the price of the commercially available items. He just thought that they were not worth the money. The PFA-approved one available had a lot of baggage on the outside of the wing, being intended for retrofit on existing aircraft. Peter did not want that so he designed and built his own. Instead of a couple of hundred American dollars this original item cost him 8 UK pounds [C$16:00]. Half the money went to items that he bought and tried and rejected. He says that he could now build one for half that amount of money. The biggest challenge was finding the right micro switch but he did it and it works great.

All in all, seeing this unique aircraft was a great experience. It is beautifully built and is economical to fly in that it uses lower price jet fuel [or diesel or vegetable oil]. Fuel consumption at an economy cruise of 105 knots is a meager 17 litres per hour. Max gross weight is 720 Kilograms. When asked about the weight penalty of the diesel engine he responded that the whole installation including all fluids was about the same as a Lycoming O-235.

Being a scientist in real life gave Peter a head start on a system of monitoring what goes on in his aeroplane. All temperatures, pressures, speeds and times of everything and then some are recorded on chips, and then transferred to a computer where it spits out a record in graph form of almost every thing that went on during a flight, everything except maybe what the pilot had for breakfast. Even the length of time the starter cranked the engine over is recorded. Several hours were spent reviewing this fascinating data in the comfort of a typical English classic country pub over food and beverage. I asked Peter if he enjoyed collecting all this data that the majority of us would never think of and he said "yes". Why am I not surprised?

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

Across Canada

RAA Chapters in Action

A sold out crowd of more than 80 turned out for the annual Oshawa RAA Awards Dinner, followed by a dance in the Officers' Mess at the local armory One of the areas most active female pilots, Cheryl Marek, presented the chapter's 2007 Certificates of Recognition to those who during the past year made significant contributions to the chapter and recreational aviation. Left to right are Don Dutton, Dan Tomlinson, Ed McDiarmid, President Jim Morrison and Chris Gardiner who is both a member of the chapter executive and the RAA national executive.

Oshawa

Oshawa RAA paid tribute each year to those who helped make the chapter activities a success by awarding Certificates of Merit at the Awards Night Dinner and Dance. The 2007 Awards Night Dinner and Dance held in the officers' mess at the Oshawa Armoury, was sold out again. Cheryl Marek, (right) pilot and dedicated aviation enthusiast, made the presentations to (left to right) Don Dutton, Dan Tomlinson, Ed McDairmid, Jim Morrison and Chris Gardiner. Winners not present when the certificates were handed out were: Peter Morrison, Art Stevens, Darwin Witty, John Colven, Doug Wood, and Wayne McCarron.

Oshawa RAA member Dave Douglas was photographed recently as he worked on the formers for the fuselage of the Mystery Ship. The plane, which won the Cleveland Air Race in 1929, is being restored under the supervision of Mo Nesbitt at the Corporate Aircraft Restorations at Oshawa Airport.

The first of five built, it languished in a museum, partly repaired after a hard landing. Mo heard about it and thought the plane was too important a part of aviation history to sit covered in dust in the back of a hanger. He offered to repair it at his hanger at the Oshawa airport, and after searching out copies of the blueprints work on the repairs are now under way.When completed, including a paint job in its racing colors, it will be returned for display in the Staggerwing Museum Foundation of Tulahoma, Tennesee.

Art Stevens

Winnipeg

It was another great potluck dinner on Saturday December 8, 2007. Approximately 30 people attended and there were lots of laughs and interesting talk about aviation. The varied selection of food provided lots of choices for everyone. Nobody went away hungry. Thanks to the volunteers for cleaning the hangar, setting up and taking down all the tables and chairs.

Jill Oakes

RAA Vancouver

Chris and Joan Cox reported in the chapter newsletter their trip to Reno as pit crew for member Adrian Cooper, flying Jack Pomerleau's Cassutt Miss T'witchy (*see article this issue*).

At the January meeting we enjoyed a presentation by Jim Lovelace, the host of the cable show "Wings Over Canada" who discussed the disappearance of aviator Steve Fossett. This will be the subject of an upcoming show.

Chris and Joan's RV-7 is near completion and should be flying as soon as weather permits. Look for it soon in the New In Canadian Skies section.
George Gregory

Scarvorough/Markham

At our January meeting, Brian Kenney, Senior Advisor, Fuels and Additives, Petro-Canada (bkenney@petro-canada.ca) talked to us about aviation fuels for our light aircraft with emphasis on ethanol as an additive. Brian's remarks made it clear that the presence of ethanol can complicate our use of mogas for aviation fuel considerably; e.g. phase separation of a water layer can occur as the temperature decreases. It is worth noting that premium (91 octane) fuel from Petro-Canada, Esso and Shell does not contain any ethanol at the present time. We wish to thank Brian for giving us a very interesting, informative and lively talk.
Bob Stobie

Saskatchewan

For the past couple of years RAA, North Sask Chapter 4901 and COPA, Flight 10 have been attempting to grow GA in this part of the province (Saskatoon,Sk.). In doing so we have purchased a Club hangar at Richter Field, Martensville. It has since been remodeled with the addition of a clubroom and storage space for project parts as well as space for final assembly, annuals etc. We have seen the addition of Sunday Morning breakfasts during the summer and have held club meetings and seminars in our new clubroom. Although the hangar/clubroom is a work in progress and is not completely finished we envision a lot of usage in the coming years.

Our motto is "Advancing Aviation through Cooperation" and thus far has been a huge success.
Marc DeGirolamo

Upcoming Chapter Events

Kent Flying Machines will be holding their annual fly-in breakfast at Chatham Airport (CNZ3) on Saturday, May 31,2008 starting at 8:00 am til 11:30 am . Cost is $ 5.00 per person and all fly-in pilots eat for free.

March 1st, Kars, ON: Winter flyin; same good food as always. Fly, drive, walk or run but get there for around 11 am until finish around 4 p.m. See you there!. Located N45 06 W75 38 3S 14 deg W UTC-5(4) elev 286' A5000 A5002 F-2. Rwy 08/26 no winter maintenance/land at your discretion. No glider activity at this time. Radio frequency is TFC 123.4 5nm 3300 ASL. For more information please contact Harvey Rule at 613-739-5562, email harvey.rule@bell.ca or harvey.rule@rogers.com.

Top, Laying the laminate in the new clubhouse; above, Putting up wallboard. Ed Zelko (second from left) project foreman.

Alaska Highway Chapter's **Second Annual Rust Remover** Saturday April 26, 2008 Breakfast at 7:00 – 8:30 hours MST. At the YXJ-1 Hangar just east of North Cariboo Hangar At the Fort St John, B.C. Airport. Presentations will start at 9:00 hours in the North Cariboo main Hanger. Lunch will be served on location.

Presentations should end around 15:00 hours. Presentations by Nav-Canada, Transport Canada, Dan Wuthrich of North Cariboo, Joseph Villiger, ME. Pilot maintenance. Cost for the day will be $ 20.00/person. Hosted by The Alaska Highway RAA Chapter .

Aircraft tiedowns just to the north of YXJ-1 Hanger on the grass.
Contacts:Richard at 250-782-2421, Heath at 250-785-4758. e-mail Heath at htanner@bluenova.ca

Reno 2007

Text and Photos By Don Souter / Chapter 85's Adrian Cooper took a crew down to Reno last September. He FLEW his Cassutt down, one of only two pilots to do so; everyone else trailered their aircraft down.

After 2 days practicing the starter was removed (in favor of Hand propping like the rest). The crew would not let him near the plane unless he was dressed to fly and on;only for flying --no working on the plane for the pilot!

Adrian flew a slow line, but proved himself consistent and worthy: he kept a consistent line around the pylons and was able to make the faster aircraft have a clean pass when they came by. T'witchy was the only" brand new" F1 to race this year that I know of; the others being repeat offenders or older aircraft that had been painted, refurbished and/or tweaked in various ways.

This year the annual Reno Air Races were the ultimate roller coaster of emotions. From the saddening and tragic events where three pilots lost their lives, to a storybook ending of a perfect landing under no power by Rare Bear. After declaring a Mayday shortly after taking

the chequered flag because of a stuck throttle - and unable to slow below 300 knots - pilot John Penny planned the approach and made the squeaker landing look like it had been rehearsed.

Many great races and entertaining airshow acts have come to be expected, but the Big Show is still the high speed and exciting racing 50 feet above the ground. From a "slow guy" doing around 180 mph, to the nearly 500 miles per hour that the Unlimited Gold racers fly, no one is going to sleep here!

There are also many museum quality restorations on display here. In the Heritage Cup sponsored by Rolls Royce (and judged by no less than the Smithsonian), the invitational competition has absolutely spotless aircraft fly in to the airport to be looked over by all at the races. As part of several classes you may choose to look at "Cripes-a-Mighty", a P-51 -D in the warbird class, an exquisite Culver Cadet, a retractable 85 horsepower airplane from the post war era, to a wonderful J-3 Cub in Piper

Of COURSE the Snowbirds were there.

Something for everybody: An Unlimited Class Bearcat - Rare Bear - being prepped for the race; a biplane (Pitts?) rounds the pylon in pursuit of glory; T-6 winner--Dennis Beuhn--using Tony's "barn Engine"

Yellow. All represent many hours of research and elbow grease to be brought here for display in top condition. Always better than they left the factory floor, these planes are a joy to look at.

This year during the races there were 2 deaths that occurred during racing while a third lost his life during a test flight. Despite the ever alert and top quality people that fly these aircraft, it IS racing. The many people that knew the pilots only speak highly of them as they were all popular and well known to many in the Reno Air Racing community. All racing was postponed on the Friday to reassess that all was as safe and procedurally proper as could be. The general feeling was - after a great deal of hard thinking - "We came to race; these pilots would want us to continue to race - Let's do it! Beginning on Saturday morning the racers slowly and carefully went over all the preparation they needed. Then the green flag flew


77


USAF
43

No shortage of gorgeous vintage aircraft: an immaculate Stearman and a Buhl Bull Pup. Below left: not all biplanes are old-tech. Right: Jon Sharp, Sport Class Winner in NEMESIS NXT at 385.658 MPH. Don Souter Photos.

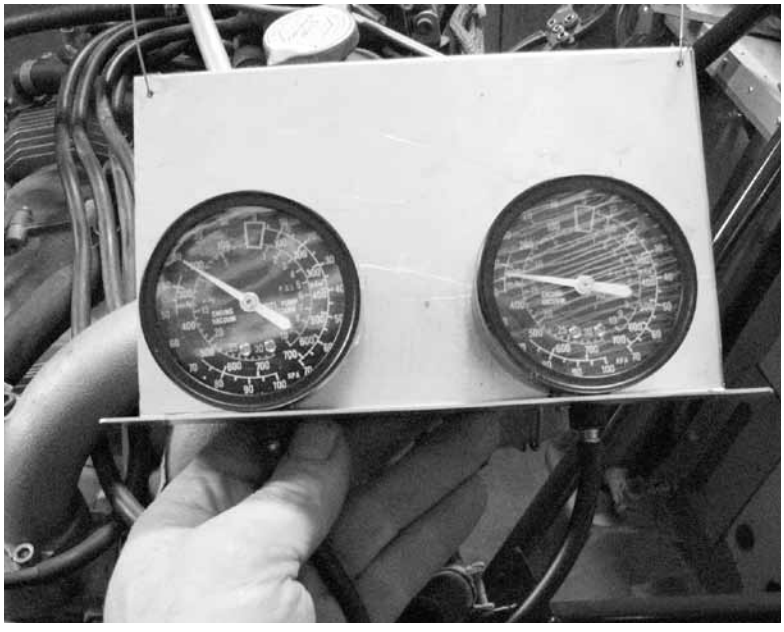
and all the power of a Formula One engine times 8 went wild. A couple of maydays caused all to hold their collective breath, but no more disasters for this year.

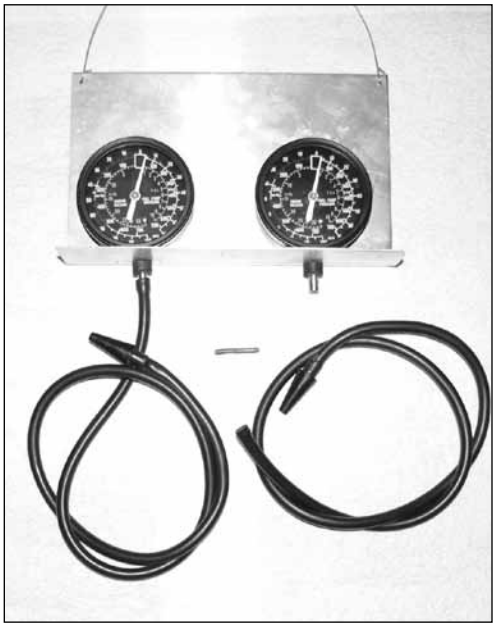
At the banquet this year the Reno Air Race Association Hanger was full -- right to the last trophy being presented.A true tribute to the togetherness that the community of pilots have in Reno.

Dates for the 2008 Reno Air Races are September 10 – 14, 2008.

See you there! RAA

Technical Stuff





ROTAX CARB BALANCING GAUGES

Rotax has recently posted several videos on their website to deal with the procedure to do a proper balancing of the twin Bing Constant Velocity carbs on their 912 series engines. Having both carbs at the same degree of opening is vital to ensure economical operation, equal exhaust temperatures, and a smooth idle. Here is how to build an inexpensive set of gauges to accomplish a proper carb balance.

Start off by purchasing a pair of vacuum gauges, and ensure that they produce the same readings for any given vacuum. If there is no one looking while you are at the store, you can do what I did - stick the two hoses into your mouth and suck on both at the same time. If you are shy, do this in the privacy of your own workshop and keep returning gauges until you get a matched pair. Alternatively you could just make a correction card.

A piece of aluminum sheet with a 3/4 flange bent at the bottom will make a good backing plate. Drill 1/4" holes in the flange for the barbed fittings of the gauges and 1/8" holes at the upper corners for a loop of safety wire. Glue the backs of the gauges down with silicone seal. For added security I also used small sections of 1/4" ID hose cut to 1/4" length, and pushed these onto the barbs. Intake pulsations of the engine will cause the needles to vibrate, so some sort of damper is necessary to limit this. I used short lengths of 1/8" copper tubing, inserted into each rubber tube to act as a pulsation damper. Alternatively a couple of aquarium needle valves may be spliced inline to allow a fine adjustment. Even a shaft collar with a grubscrew could be used on the outside of the hoses.

When using the gauges it will become immediately apparent that there is a whirring propeller a foot away. Tie the plane down firmly, and use the wire loop to restrain the gauges -if you are working on a pusher they could otherwise end up going through the prop. Whether the plane is a tractor or a pusher, do not try to make adjustments while the engine is running. Take your reading, shut the engine down and make each trial adjustment. In cold weather this can be a very invigorating process.

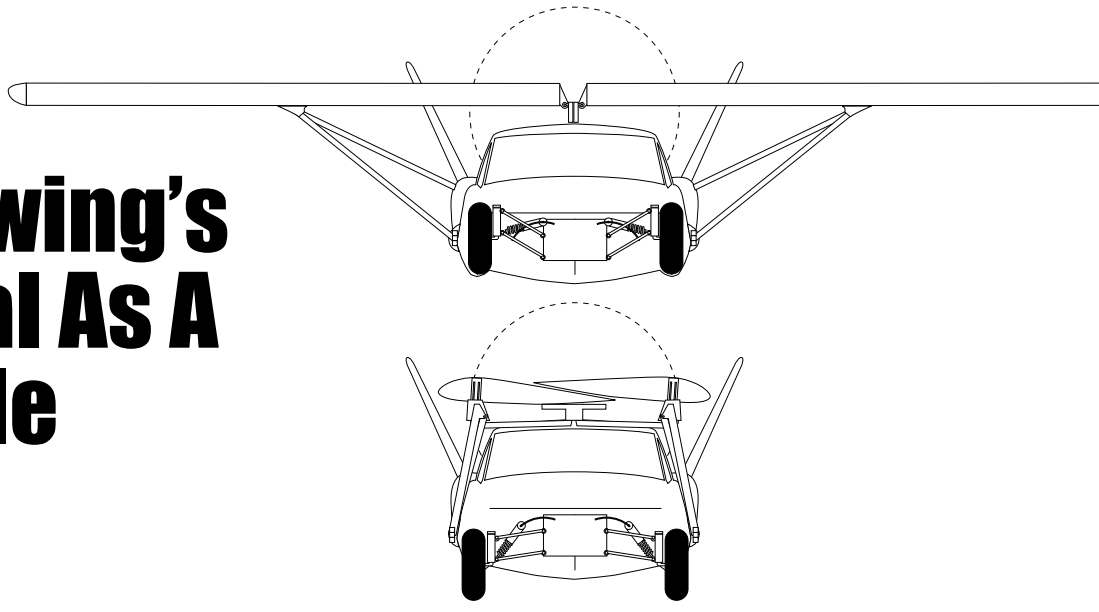
You might find that you cannot get the carbs balanced at all rpms. This is usually a result of sticking throttle cables and convoluted routing. The worst setup is two solid linkages from a firewall balance bar, running to both carbs. The engine will be dancing around on its mounts, particularly in the 2000 rpm range when the 912 engine's left-right rocking couple vibration mode is making itself known. A good 2 into 1 junction block throttle cable assembly will make it a lot easier to balance the carbs. Lubricate the cables and route it as straight as possible to the panel.

The link to the videos is http://www.rotax-owner.com/elearning.htm. Thank you to RAA member Walter Klatt for sending this link.

Gary Wolf RAA # 7379

The Controlwing's Potential As A Roadable Aircraft

By George Gregory



ONE OF THE REAL PROBLEMS faced by designers of roadable aircraft is the difficulty of shifting the centre of gravity for different modes of operation. An aircraft is necessarily light on the nosewheel because the elevator has to rotate the aircraft for take-off. This is fine for aviating, but one doesn't really want a light nosewheel when barrelling down the highway at 100 km per hour. When driving, that is your control, and has a lot to do with the quality of the car's handling. Figuring a solution can be both complex and heavy.

Different people have approached this problem different ways. Molt Taylor, arguably the father of the modern roadable aircraft, simply removed the wings and the back half of the aircraft, turning them into a long trailer with small trailer wheels extending from the root of the wing. This left the driving part reasonably well balanced, but was complex and heavy, and real-world conversion times left room for improvement.

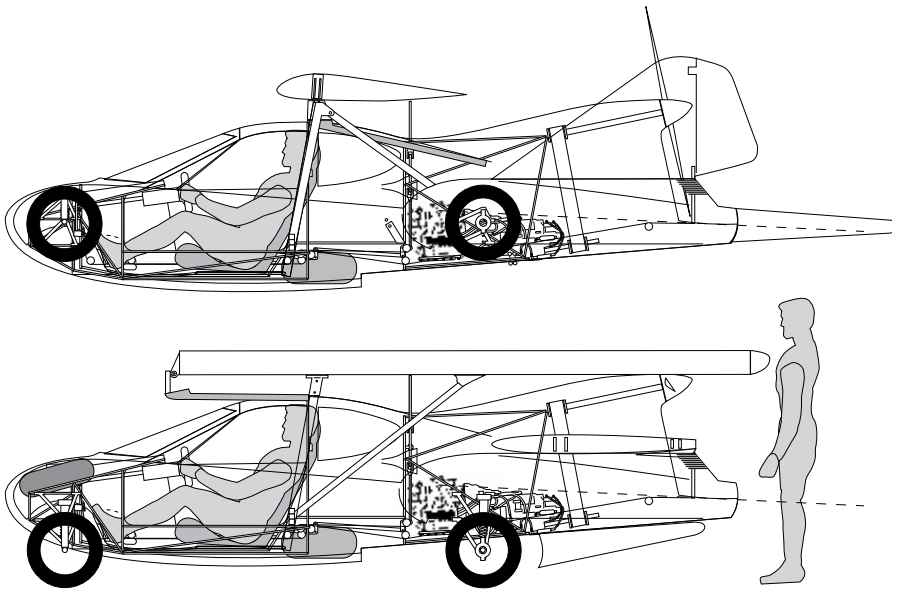
The Fulton Airphibian, the spiritual ancestor to Taylor's design, featured a non-portable airplane portion that you unhooked and drove away from. Even less convenient: it might be fine if you were going to lurk around your destination for a while, but lacked utility if you needed to drive part of your enroute trip, say to get through IMC while safely on the highway instead of the air.

The up-and-coming Transition, (see the March-April 2006 issue of the Recreational Flyer) uses a 3-surface approach to allow a little more weight on the nosewheel in both modes. The wheels can be placed further aft than otherwise because the canard would be able to help lift the nose up in conjunction with the elevators. In my opinion, this is better, but isn't a complete solution as you're still going to be somewhat lighter on the nose than is optimal for driving applications. Indeed, Terrafugia does not suggest their vehicle would be up to the task as a daily driver, but rather an airplane you could use for the occasional out-of-town commute. It is an airplane meant for occasional ground use.

The Good Part

Is there a complete solution?

I think there is. The Controlwing idea (as I mentioned in the last issue) has been around for some time, but has never gained widespread acceptance. It is, admittedly, a novel approach as it dispenses with the conventional elevator in favour of a free-floating wing that rotates for takeoff rather than the fuselage. This means that the rear wheels can be placed pretty well where you want them - important for automotive applications. This also allows a lighter structure, because it means the transmission can be within easy reach of the rear wheels, and allows a more robust, permanent car-like suspension. No complex mechanism to move the rear suspension aft or shift weight forward would be needed. As well, the aircraft is somewhat more idiot-proof; it can't be stalled or spun, and the floating wing concept absorbs turbulence the aircraft encounters in the air, much like shock absorbers on a car soak up the bumps on the road. A NASA report done a few decades ago



One possible iteration of the Controlwing. This is not entirely unlike George Spratt's own Model 107, but is optimised for portability and, of course, has wheels and a transmission. Note the upside-down V-strut. This allows the wing to pivot on its spanwise axis in response to control inputs and enables the wings to absorb turbulence. The wings could be stowed on the top of the vehicle for in transit use, removed for a longer stay at a destination. There are no flaps, ailerons, or fuel lines to disconnect.

suggested the occupants of such a vehicle would feel about a quarter of the turbulence encountered by people riding in a conventional aircraft.

So this would eliminate some of the compromises inherent in the concept of a dual-use vehicle: transmissions and suspensions could be made simpler than they would otherwise be in such a compromise, and could be optimised for more frequent road use. What's not to love?

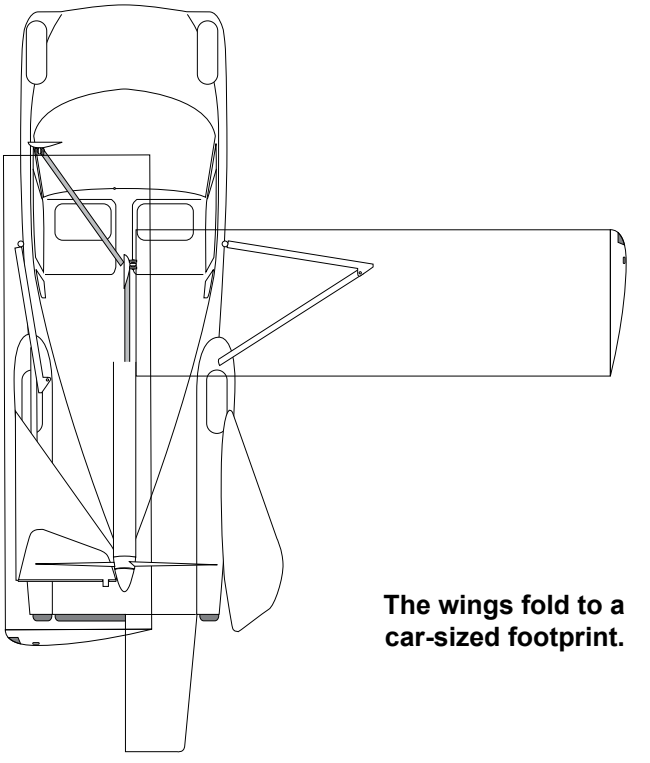
The Not-So-Good Part

Well, there are *some* issues. Some pilots may feel a little weird seeing the wing moving in flight independent of the fuselage, especially in turbulent air. If the smoother ride settles your stomach, the sight of the wings bobbing up and down in rough air might be enough to unsettle it again.

You can't dive a Controlwing. You can't do aerobatics. I used to consider this quite limiting until I thought of the last time I tried to dive an airplane. Normal descents (at least for a non-aerobat like myself) are generally performed with a reduction in power to set the rate of descent rather than aggressive use of the elevator. No big deal.

The system *does* fly differently, though. There is a collective stick in lieu of a normal elevator control; in fact, you control your altitude primarily with the throttle - all other things being equal, this is a constant speed aircraft. When you increase power, you don't get an increase in speed, but in altitude. Decreasing power produces a descent. It is possible to go faster, but you have to adjust the collective for a higher speed - which without a commeasurate increase in power would cause a descent - then adjust the power to maintain level flight.

However, there are ways the system could be made relatively transparent to the pilot. For instance, by designing an elevator-like control input into the



The wings fold to a car-sized footprint.

control wheel instead of a collective, pulling back on the wheel would yield a slower airspeed with an initial climb. Power would have to be added to maintain the climb, in practice much like we do anyways.

Finally - and this is an issue specific to roadable concerns - you can't put flaps on a Controlwing. The wings are going to be larger than we like, considering you'd have to do something with them when you're driving. They will be somewhat cumbersome. (It would be essential to design a folding mechanism that can be worked by one person. Unlike the good folks at Terrafugia [*www.terrafugia.com*], I wonder if an automatic, powered mechanism is the way to go, only because of weight concerns. It's a no-brainer *if* you can afford the extra weight; but it must be at any rate simple for one person to operate, even in gusty weather. Further, it would be handy if the entire wing section was removable for extended stays at a destination).

But none of these is what might be considered a fatal objection. It depends on your design goals: if you want the convenience of dual use, and aren't interested in doing loops and lomcevaks all over the sky then these are not problems.

Possibilities

The range of options are intriguing. What about an *amphibious* roadable? The utility of such a vehicle could not be overstated. Imagine a vehicle that could land both at the local airport *or* on a body of water, but could still be driven cross-country when inclement weather is encountered. If the flight portions could be made to be totally removable for extended stays at a particular destination, it might not even make a bad automobile; the rotating wing of the vehicle allows us to bypass some of the usual compromises necessary in other concepts.

Rotax Service Bulletin

The following Alert Service Bulletin has been amended by Rotax. The Alert status has been removed and the Engine serial number list for affected engines has been reduced to a more defined range. The new amended SB also requires a detailed magnetic plug inspection at each mandatory oil change in accordance to the current engine maintenance schedule for affected engines.

SB-912-051 / SB-914-034 - SB-912-051UL / SB914-034UL

CHECKING OF MAGNETIC PLUG ON ROTAX ENGINE TYPE 912/914 (SERIES).

The following engine models may be affected: 912F, 912A, 912UL, 912S, 912ULS, 912ULSFR & 914F, 914UL

NOTE: Affected engines having already met compliance with the original Alert Service Bulletin previously issued must now also comply with the new requirement for a detailed magnetic plug inspection at each mandatory oil change in accordance with the current engine maintenance schedule/ checklist (found in the Line Maintenance Manual - see www.Rotax-Owner.com for downloadable copy).

SUMMARY OF BULLETIN

In some limited cases, the affected engines could suffer from increased wear of the camshaft and/or hydraulic valve tappets. Such a condition would lead to excessive wear material being captured by the engine magnetic plug, therefore affected engines must have a detailed magnetic plug inspection as per the instructions supplied in the SB.

CHECKING IF YOUR ENGINE IS AFFECTED

First, make sure your engine type is affected, then check your Engine serial number and compare to those listed in the applicable SB. For engines which have had the cam shaft and/or lifters previously replaced for maintenance or overhaul between January 1 2006 and December 1 2007, they must also have the magnetic plug checked in compliance to the SB and every mandatory oil change thereafter regardless of engine serial number. For more information on removing and replacing your magnetic plug and performing a proper detailed inspection, click on the following link:

http://www.rotax-owner.com/expanded.htm

COMPLIANCE

Before the first initial start up of any new engine with affected serial number.

Within the next 5 hrs. (one time) for any engine overhauled or repaired where the cam shaft and/or lifters have been changed within the affected dates January 1, 2006 to December 1, 2007.

For affected engines within the next 5 hours of operation (one-time), but at the latest April 1, 2008 if compliance to the original Alert Service Bulletin has not yet been carried out.

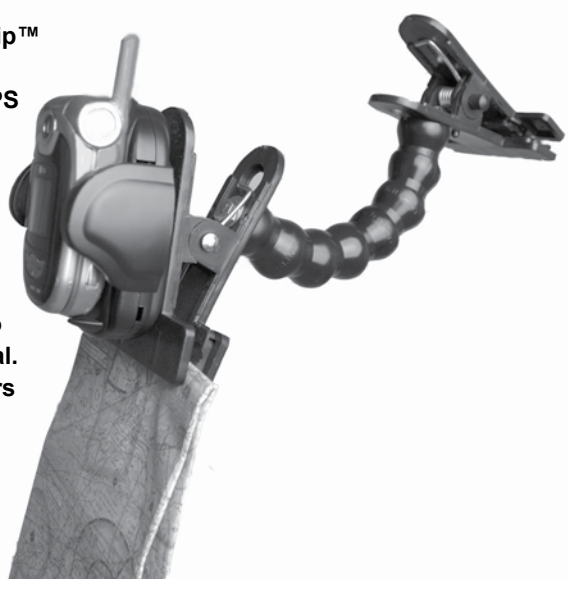
For affected engines during each mandatory oil change thereafter in accordance with the current engine maintenance schedule/ checklist (found in the Line Maintenance Manual - see: www.Rotax-Owner.com for copy).

ADDITIONAL EXPANDED VIDEO INSTRUCTIONS;

A special on-line video has been developed to supplement this mandatory SB and add further detailed instructions for proper removal, replacement and inspection of the magnetic plug including special tool requirement and procedures list. Click on the following link for access to this additional information; http://www.rotax-owner.com/ expanded.htm

New Products

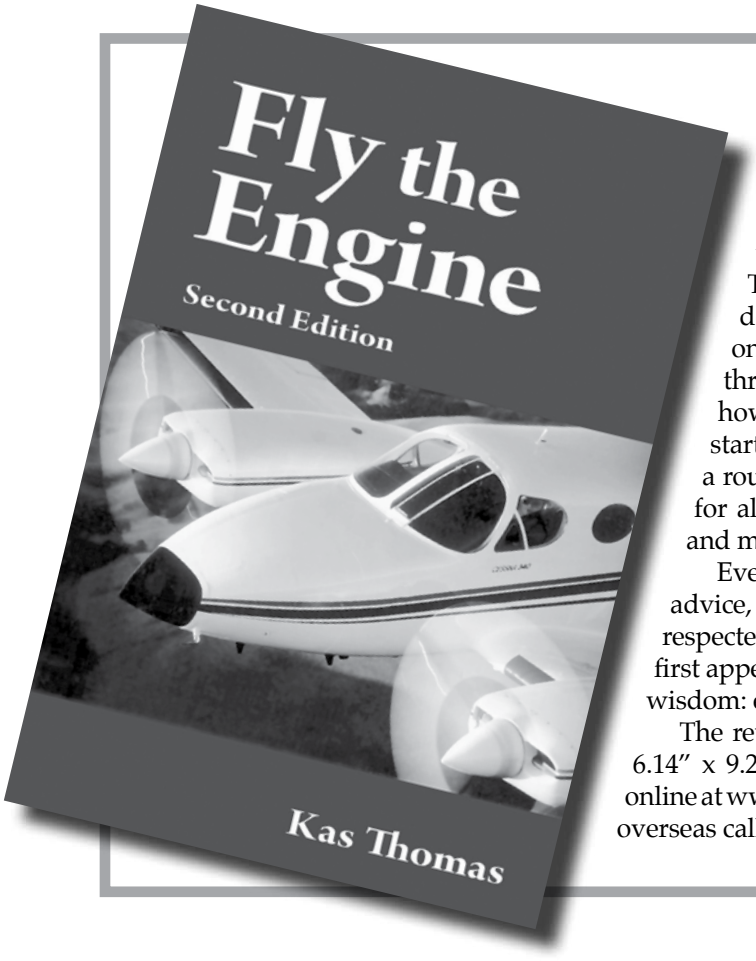
SnakeClip Portable Mounted Light



Corona, CA – Aircraft Spruce & Specialty Co. introduces the SnakeClip™ from Hindsight Products, a unique cradle which holds a variety of personal electronic items such as cell phones, PDA's, iPods® and GPS units. Attaching and detaching in seconds, the portable SnakeClip™ can be easily transferred between planes and automobiles for maximum utility. The Snake-Clip can be attached to multiple surfaces in the cockpit and won't sag or lose its surface grip over time. No installation necessary - simply clamp the SnakeClip™ onto a suitable surface and it's ready to "bite".

The padded adjustable arm on the cradle expands to hold items up to 2.5" wide, and features a quick-release button for easy device removal. The mounting arm is composed of industrial-grade flexible connectors which provide rigid support, yet allows the unit to swivel and bend in hundreds of angles while maintaining its shape. The versatile spring-loaded clips contain rubber pads for surface protection and have a 3.25" clamping area. The SnakeClip™ measures 12" fully extended. The SnakeClip™ sells for $30.95 and can be ordered online at www.AircraftSpruce.com or by calling 1.877.4SPRUCE;

overseas call 1.951.372.9555.



THE ESSENTIAL GUIDE TO ENGINE OPERATION: "FLY THE ENGINE" IS NOW AVAILABLE FROM AIRCRAFT SPRUCE

Corona, CA – Aircraft Spruce & Specialty is pleased to announce the return of "Fly the Engine" by Kas Thomas. Back in print for the first time in over a decade! Fully revised and updated! The ultimate book on aircraft engine operation, Fly the Engine takes you through all phases of engine operation, showing you how to spot engine discrepancies on preflight; how to start a hot, cold, or flooded engine; how to troubleshoot a rough runup; when (and when not) to lean the engine for all phases of flight; how to recognize valve sticking; and much more.

Every chapter of Fly the Engine brims with hands-on advice, told with wit and style by one of aviation's most respected authors. Hailed as a modern-day classic when it first appeared in 1993, Fly the Engine is a goldmine of engine wisdom: essential reading for any pilot, of any skill level.

The revised 2008 edition of Fly the Engine is a 278 page, 6.14" x 9.21" Paperback (P/N 13-05395) and can be ordered online at www.AircraftSpruce.com or by calling 1.877.4SPRUCE; overseas call 1.951.372.9555.

AAA-TSR-01A OPERATES WITH WSI RECEIVERS & SIRIUS RADIO BROADCASTS

The AAA-TSR-01A is an active antenna that operates with all new WSI InFlight® capable receivers. The antenna receives Sirius Satellite Radio broadcasts to enable the WSI weather service. It was designed specifically to suppress interference from ground-based signals. Its proprietary design allows for optimum performance while the aircraft is turning. The antenna has been thoroughly tested and meets all of the necessary RTCA DO-160E requirements.

The "tear drop" shape of the antenna was selected to fit within the same approximate footprint as the previous WSI products. This helps ensure that existing customers can easily transition to the AV-300 with minimal expense.

This antenna was developed and manufactured by Micro-Ant, Inc in South Easton, MA. Micro-Ant specializes in the design and manufacture of microwave antennas. These antennas include 2-way SATCOM, SDARS, DVB and GPS.

The AAA-TSR-01A is 4.6" long x 2.8" wide x .7" high and weighs 113 grams. It has a frequency range of 2.32-2.3325 GHz with an impedance of 50 Ohms. DC input is 3.6-7V with a DC current of 80mA.

The AAA-TSR-01 (P/N 11-05937) can be ordered online at www.AircraftSpruce.com or by calling 1.877.4SPRUCE; overseas call 1.951.372.9555.

The AAA-TSR-01A antenna has a proprietary design that allows for optimum performance while the aircraft is turning.

President's Message

continued from page 2

One of the problems with the CARS is that some parts have been loosely written. There have been some revisions through the years and sometimes a very slight revision of the wording can drastically change the meaning of the regultaion. Regional Chiefs do not always agree on matters of interpretation, so members in one area can be rousted by Enforcement for behavour that is considered to be legal in another part of Canada. One reg that has drastically different regional interpretations is float flying in planes that meet the Ultralight definition.

It has always been legal for the holder of the Ultralight Permit to fly an ultralight on wheels or floats, without having an endorsement. This has been the case since the early Launch Weight definition of an Ultralight which used wing loading to limit top and stall speeds to reasonable numbers. The Big Step was when Transport added a second definition of an Ultralight, to include a plane that has a gross of 1200 pounds or less, and stalls at 45 mph or less. Float flying continued to be an automatic privilege of the Ultralight Permit without any training or endorsement. This might not have made sense, but Ottawa has a very hands-off policy on anything to do with Ultralights.

Shortly Transport began referring to all aircraft that met the 1200/45 definition as Ultralights, no matter whether they were registered as Amateur Built, Owner Maintenance, or Certified. UL pilots could then fly any plane on wheels or floats, as long as it grossed less than 1200 and landed at less than 45 mph. The privileges had got out of step with the training requirements, but Transport was not bothered.

Pilots holding a Rec Permit or a Private License have always been required to earn a rating in order to fly on floats.For many years Ottawa had not allowed Rec or Private pilots to fly even an UL on floats unless the pilot had earned the float rating. Alternatively the Rec or Private pilot could take transition training on a wheel-equipped Ultralight to earn an UL permit, and he would then be legal to fly on floats on these 1200/45 aircraft. There was little logic to any of this, but that was Ottawa's position and RAA has this on paper.

In some regions the local Chiefs read the regulation differently, so in some areas of Canada a Rec or Private pilot could fly these aircraft on floats. RAA brought this to the attention of Ottawa, and asked that they all get onto

the same page. Our regs should be the same across the country. Legal in one region should mean legal in all regions. This has now happened and the result is that no one requires any rating to fly a 1200/45 aircraft on floats. Whether or not it makes sense to do this is beside the point. RAA has informed the Enforcement of this recent change in policy.

The looseness of the UL definition means that there is also no limitation on the number or type of engines, (early example - Lazair) as long as the plane grosses less than 1200 pounds and lands at 45 mph or less. Was this Transport's intention when they wrote the 1200/45 definition? No one will say, but it is likely that no one thought of this at the time of writing. Modern technology makes it possible to build a fast twin that meets this definition. RAA has also confirmed that even if the 1200/45 aircraft in question has two engines there is no requirement to earn a multi rating to fly the plane. Fill your boots, but check with your insurer first. They might not agree with Transport''s new interpretation.

ROTAX CARB SYNCHRONIZATION VIDEO

Rotax has just posted a series of instructional videos to show the process for synchronizing the carbs in the 912 series engines. This is vital if the engine is to run well throughout the rev range. There is an article in this issue that shows how to assemble your own set of synchronization gauges. HKS engine owners could benefit from these videos too.

THE END OF 100LL?

Industry rumours notwithstanding, Environment Canada has today told RAA's representative that they have no intention of banning lead in Avgas. They are not saying that they would not like to ban lead, but they are not about to ground all of General Aviation. Environment Canada cannot and will not be the first to do this. Keep an eye on the EPA, and when they have banned 100LL, expect the Enviroment Canada would shortly follow. There is no need to hide a 1000 gallon storage tank in your hangar, at least for the next while.

Gary Wolf
RAA # 7379

Keep in Touch With Your Board of Directors!

Board of Directors

Gary Wolf ..... President
.....519-648-3030 garywolf@rogers.com
David Moore ..... Vice President (programs)
..... charlotte.moore@sympatico.ca 905-659-3454
Wayne Hadath ..... Treasurer
..... whadath@intown.net
Chris Gardiner ..... Secretary
..... 905-668-5703 cgardn628@rogers.com
Darrell Lynds ..... darrell@lynds.net
Dave King ..... kingdws@shaw.ca
Bill Weir ..... 519-461-0593 billweir@lon.imag.net
Mary Wiebe ..... (on leave) weebee1@sympatico.ca

RAA Regional Directors

Vancouver Island:
Ken Armstrong 250-652-3528
..... aviator-horizon@telus.net
709-6880-Wallace Dr., Brentwood Bay, BC V8M-1N8
Mainland BC:
BC Coast ... Terry Wilshire terwil@telus.net 604-721-7991
Interior BC/Technical Director: ..... David King
contact best between noon-10pm 7days work
ph. 250-868-9108 homep ph. 250-868-9118.....
.....emailKingDWS@Gmail.Com

Alberta North:
Tom Hinderks .....780-453-1078 or leave a message at
780-451-1175 ..... e-mail eahs.execdir@interbaun.com
Alberta South:
Gerry Theroux .....403-271-2410 grtheroux@shaw.ca
Saskatchewan:
Curt Halpenny 306-934-2965
cth.saskatoon@sasktel.net
Manitoba:
Jill Oakes.....204-261-1007 jill_oakes@umanitoba ca
Ontario SW:
Tom Martin .....fairlea@amtelecom.net
Ontario S/Central: ..... Gunnar Doerwald
..... 905-468-3713 gunnar@doerwald.net
Ontario East:.....TBA
Ontario North:
Morris Frandsen ..... 705-732-2789 frandsen@vianet.on.ca
.....RR#1, Rosseau, ON P0C-1J0
Quebec:
Raymond Fiset.....418-871-3761 rayfiset@qc.aira.com
.....7925 Hamel Blvd., Ste Foy, PQ G2G-1C8
Appointed Positions:
Translation:.....Pending
Magazine Mailing: .....Dave Evans
Ultralights:.....Wanted
Web Page ..... Terry Jantzi
Insurance Committee ..... Gary Wolf
AirWear.....Dave King

Classified Ads

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

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

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

Advertising Policy
The Recreational Flyer Publisher reserves the right to refuse any or all advertising for any reason stated or unstated.
The Recreational Aircraft Association Canada does not assume responsibility for advertisements, but does exercise care to restrict advertising to responsible, reliable individuals.
Please note: Ads running more than 3 issues must be renewed to guarantee continued display in the magazine.

Recreational Aircraft Association Canada

President: Gary Wolf
Vice President (Programs): David Moore
Secretary: Chris Gardiner
Treasurer: Wayne Hadath

Recreational Flyer Magazine

Registration Mail Publication No. 09869

Contributing Editors:
Owen MacPherson
Don Dutton
George Gregory
Art Director and Layout:
George Gregory
Printed by Rose Printing Orillia, ON

The Recreational Flyer is published bi-monthly by the Recreational Aircraft Association Publishing Company, Brampton Airport, Caledon, ON L7C 2B2. Toll Free line: 1-800-387 1028 email: raa@zing-net.ca. Purchased separately, membership in RAA Canada is $35.00 per year, subscription to Rec Flyer is $35.00 per year; subscribers are elegible for reduced membership fees of $15.00 per year. Rec Flyer to have a single issue price is $6.95.
The Recreational Flyer is devoted to the aerospace sciences. The intention of the magazine is to promote education and safety through its members to the general public. Material in the Flyer is contributed by aerospace engineers, designers, builders and restorers of aviation devices and vehicles, used in an amateur capacity, as well as by other interested persons, publications and organizations. Contributions to the Recreational Flyer are voluntary and without remuneration. Opinions expressed in articles and letters do not necessarily reflect those of the Recreational Aircraft Association Canada. Accuracy of the material presented is solely the responsibility of the author or contributor. The Recreational Aircraft Association Canada does not guarantee or endorse any product offered through articles or advertising. The Flyer and its publisher welcomes constructive criticism and reports of inferior merchandise or services offered through advertising in the publication.

For Sale

For sale: 1977 Cessna 150M 10K TT, 1950 engine. Spin-on filter, overhauled prop 2007, Garmin Xponder, ICOM A200 radio, Garmin 296 GPS with panelock, new tires, paint& interior OK, new mags,new alternator,. Annual Sept. Call Chris @ 905 495-2383. $26,000. Feb07

US urethane paint, in all the authentic colours to do a complete camouflage paint scheme for one aircraft. Also, one sheet of aircraft mahogany plywood 1/8 x 4 x 8 . Disposal prices. Toronto area. Ross 416-284-5034 Feb07

For sale: Cavalier 102.5 with a new "Aero Sport Power" O-320-B2B installed in 2005 which now has only 61.4 hours total; (Because of this fantastic engine, the Cavalier can climb out at 1,500 fpm!) Sensenich metal prop. The airframe was totally rebuilt in 1997; therefore, total time since then is 265.1hr; 1750 lb gross weight, leaving a whopping 622 lb useful load; VFR instruments with a Garman GTX 327 TXP Mode C and Val Radio; Kept in heated hangar; 8/10 inside and out. Asking only $42,000. Contact Cameron at: 250-558-5551 or moneypit@junction.net. Feb07

For sale: IVO magnunum prop, 72 inch two blade adjustable, stainless steel tips for seaplane use. Colour black. Low time. $500.00 250 846 5421 Feb07

Moving, Must Sell all:
- MJ-5 Sirocco, partially built wooden tandem aircraft. Includes canopy with frame, control sticks, retractable landing gear mostly fabricated, nose bowl moulded, tailwheel installed, 28 sheets aircraft ply, 22ft. Sitka spruce for spars. Fuselage & tail sections mostly complete. Everything to finish except engine, instruments, paint. 2 sets of complete plans, English & French $3500.
- Zenith 601XL plans & manual with photo assembly CD ser.# 5179, Full size CADD drawings for most parts. empennage parts formed, form blocks for wing

classified continued page 38

New In Canadian Skies

CHARLIE MURRAY'S RV- 9A

Charlie Murray and his wife Bonnie were looking for a two place aircraft in which they could enjoy their retirement by flying all over the US and Canada. Six years and 2150 building hours ago they began with a prepunched (but not quickbuild) Van's RV 9A kit and constructed it in their basement and garage. Bonnie was on the gun end and Charlie was on the bucking bar. Dave has nothing but good to say about Van's aircraft. Their manuals are excellent and the metal parts fit perfectly, with only the fibreglass requiring a bit of fitting. C-GRXT is powered by a Lycoming O-320 and a Sensenich fixed pitch prop.

Final assembly and final inspection were at St. Thomas Airport in the hangar the Murrays' share with Dave Hertner. On October 30 2007 Tom Hislop made the first flight of the Murray's new RV 9A, and the plane flew and handled beautifully. Cruise is 140-145 knots and stall with flaps is 36 knots. The twenty-five hours have now been flown off and Charlie and Bonnie are ready to take off for distant adventures.

Charlie recently received his completion award at the February RAA chapter meeting. Thanks go to Tom Martin, Dave Irwin, Dave Hertner, and many other members of RAA London - St. Thomas.

Send us Photos of your completed projects

Share your accomplishment with others - you've earned it!
Please include a brief description of your aircraft and any other details you want to include, and send us a colour print with it. Mail to:
Recreational Aircraft Association of Canada
13691 McLaughlin Road, R R 1, Caledon, Ontario L7C 2B2
...or email us the information and a high resolution digital picture (jpeg format please) to: raa@zing-net.ca

mostly ready, 2000 Avex rivets, 7 sheets 4'X12' 6061-T6 2 -.020, 4 -.025, 1 -.040, William Wynne Engine manual.
- Also Zenith 701 plans ser.# 6152 with CADD drawings. Homebuilt Help DVD's, Electrical Wiring, Metalworking 101. Make offer on Zenith plans.
- Falconair F11E plans. Wooden side by side $150. Contact David Nimigon Alberta 780-983-5042 or email for more details. dnimigon@xplornet.com Feb08

Wife says this stuff must go! So here it is. 3 sheets of 6061 T6, 4' X 12' .025. $250, Extruded Aluminum front and rear spars 17' in length, front spars are 5.690" and rear spars are 4", never used. $750, Small quantity of Sitka spruce, 9 pieces, 5/16 X 4" # 67" $75. Aircraft plans $75 per set, Wag-Aero Sport Trainer, Wag-Aero Vagabond and Christavia Mk 1. Ask for Ted, 705-325-1983 Orillia, ON. or ted1951@hotmail.com Feb08

SURPLUS FALCO F.8L PARTS
Complete tail section $1,000 Many completed/partially completed Falco parts, Some instruments Apollo Flybuddy GPS 820 $200 For information: Contact Mike Schuler 416 274 7467
email: mschuler@cbci.ca or
Bob Trumbley 416 258 1424
email: bob@trumbleyhampton.on.ca. Feb08

68" 3 blade GSC prop. 75mm pattern for Rotax 2 stroke pusher or early Rotax 912 tractor application. Appears to be unflown. $300 or best offer. Clare@snyder.on.ca or 519 574 4322 Feb08

Fleet Canuck project. Serial No. 225. 4600 hours in logs.Fuselage and tail pieces recovered in Polyfiber. Wings to do. New bungees, aileron and fuselage cables. Some instruments, Narco 111B VHF. Polyfiber for wings, 18 gals plus Polyfiber coatings. Just like a Quick Built gives you a classic Canadian trainer for half the price of today's kitbuilt airplanes. No engine, but on-condition 0-200 can be had separately. $12,000. Kelowna 250-764-0880.Feb08

Cougar (like Tailwind) frame and tail feathers welded, on wheels, Lycoming 0235 zero time mounted, some instruments installed, spars and a/c plywood for wings available $16,000, (519) 945-8731 nseiler@netcore.ca. Feb08

1967 Beechcraft Musketeer, fixed gear, fixed prop, low maintenance, stable IFR platform. Call Ian @ 416 318 4541 days, 905 693-0298 evenings for details Feb08

Re-drive and components for Subaru EJ 2.2. Ross 2.17:1 Re-drive with flywheel and starter, Warp Drive 3 Blade 72Ó HPCF prop with spinner, all less than 200 hrs total time with original documents, also includescustom 4 into 1 SS header system. Package for $3500.00. Also have an Andair FS20-20-D2-6 duplex fuel selector for $250.00. Located Cochrane,AB, contact Gene at 403-932-4238. Feb08

EUROPA FOR SALE
Featured in the May-June issue of the Recreational Flyer. Rotax 914(turbo)Monowheel with 500 hours total time.Dual alternator,King transponder/comm.Garmin 295.Cream coloured interior.Located at London airport,hangared. Asking $58000 , call 519-494-2741, leave message. Feb08

Continental O-200A for homebuilt. Bead blasted and painted,full electrics.C/W Log Book, accessories and baffles. 1400 Hrs. SMOH 0 STOH $5900.00 . Video clip running on test stand available. Barrie On. Jim @ joloan@csolve.net 705-721-9276 Feb08

N3 Pup,1/2 VW engine,skiis,three gas tanks(main and two wing tanks),single seat.C-IBBE;hangered at Redeau Valley Kars south of Ottawa.Asking $11,500 cnd negotiable.Call Harvey Rule at 613-739-5562 or email me at harvey.rule@bell.ca Feb08

Maranda - Wood & Fabric, side-by-side, 630 TTAF, 110 TTE, Lycoming O-290D2B, VFR panel, night VFR approved, 8.00-6 tires, brand new seat belts,new seat cushions, new interior (7/10 exterior, 9/10 interior), This airplane has float option built into it. Located at Brampton Aprt. Contact: Peter 905-884-8598 Peter@MarandaForSale.com $30,000 OBO. www.MarandaForSale.com Feb08

Filage neuf (HARNESS) jamais utilisŽ pour moteur LYCOMING 0235. Prix $250.00. - DŽtecteur monoxide de carbone. $ 5.00. Alain Lacasse (819) 563-8622 Feb08

AVID MK IV STOL. SN 1474D. Subaru EA 81 engine. Warp Drive 3 blade ground adjustable propeller. Icom IC-A200 air band transceiver. Ameri-King ELT Model AK-450. Tundra Tires. Apart from final propeller pitch / cooling adjustments, aircraft ready for final inspection. Always hangared. 2 x 14 gall fuel tanks, one each wing. Blue & white colour scheme - beautiful construction. Reason for sale & low price - lost medical. Cdn $20,000 negotiable. Graham @ 604-983-3588 or
seacap@shaw.ca Feb08

Subaru 150 hp conversion twin cam CF-2-22 by Crossflow, with belt redrive. Fuel injection and engine mount included. Low time. $3500
sacoutism@aol.com 819-778-1442 Feb08

1500 Federal Skis with Teflon Bottoms Please call Jerry Hanstke at 705-268-4098 or email mill@ntl.sympatico.com Feb08

Supermarine Spitfire MK 26, 80% scale Australian kit. LOM 250 hp supercharged, 31 hrs TT. VFR +ICOM A-5, Garmin 196, GW 1785 lbs, limited aerobatics. $130,000.00 CDN. 416-282-5252. daveaustin2@primus.ca

GO ANYWHERE!.....Lake, Glacier, Bush strip.
New '07 Merlin Ultralight, 582 Rotax,
Tundra tires, Floats, Skis.
Priced: Same as new pickup truck.
Will deliver. 204-727-3485

RV-4 project. Empennage finished. Flaps and ailerons finished. Wing spars finished..(Ribs were drilled and attached with clecoes. Now removed, numbered and boxed) Fuselage on the jig. All parts primed. Good workmanship. Call for details/pictures. Asking $11000.- (519) 461-1464 ed@solairecanada.com Feb08

RV-8 Project. Empennage finished. Complete wing kit. Pre-punched skins. Main spars finished. Tanks and outboard ÒDÓ tubes are finished.Flaps and ailerons are finished Very good workmanship. Manuals, all parts and drawings included. Dynafocal engine mount. Please send an e-mail for detailed or pictures. $ 10000.- ed@solairecanada.com (519) 461-1464 Feb08

Pitts dynafocal engine mount for Lycoming $200; 2 IVO UL LH blades 68"$150; 3 IVO UL blades LH 64" slight checking, good for airboat $150; 54-27 LH wood prop (pterodactyl) $75; S&S Winnipeg antique LH 78" wood prop, suitable for clock $300; VW 1600 dual port engine with prop hub and Hapi rear casting, including new conical rubber mounts and bolts. Includes stub exhausts, but no ignition or intake system. $1000 . Also, 4 good used VW cylinders with pistons, 87mm diameter $125 garywolf@rogers.com 519-648-3030 garywolf@rogers.com 51-648-3030 Feb08

Pegasair Fuselage,Tackwelded,stainless steel firewall $3000 Subaru EA 81 with gear reduction O time,$2500 Warp Drive 3 blade ground adjustable propellor very good condition $ 600 Heinz Genrich 905 648 0766 tandt@coceco.ca Feb08

Maranda AMF-S14F for sale $20,000. High wing taildragger. Stall 40. Cruise 100. Lycoming O-320. 655TT 225STOH 600 lbs useful load. Flies regularly, but my wife says I have to sell something before I"m allowed to build anything more! Fancy a vacation down south? The airplane and I are both Canadian (C-FXKH), but are currently living in Texas. If you buy it, I"ll reimburse your airfare. Please see http://home.earthlink.net/~daforster/marandasale.htm for more details. Dave 281 992 2713. Feb08

Wanted to purchase good or rebuildable IO 540 for Steen Sky bolt project, also any airframe or parts for the same. OFFICE 1-705-653-4525 or davidcarlaw @prototyperesearch.com Feb08

Concord aircraft battery RG-25 bought last year and never used. CG problem on my project requires that I change to a light motorcycle battery. Asking $75.00 or best offer 519-748-1731 j.volcic@sympatico.ca Feb 08

Zenith CH-250 Project For Sale. Tricycle configuration First inspection done. Ready for rigging. Have 3 in 1 engine gauge, VSI, ALT, Compass, Tack, and air speed gauges. Have a dinafolcal engine mount for 0320 engine, prop, some pneumatic tools. Plus lots of old news letters for the project and pictures of different configurations. $10,000.00 Ph. 604-859-6884, John.

For Sale 1940 PIPER J5 Ground up restoration 2007 and complete conversion to PA12 with the installation of Lycoming 0-290 125HP 35Hrs SMOH

New stainless firewall and cowlings. New Slick mags. B&C Alternator. Sensenich metal prop New Stainless exhaust system with XM Mufflers. Oil Cooler with cockpit control. New Cleveland wheels and "double puck brakes" New Garmin GTX 320 Mode "C" New ICOM A200 with Flightcom I/C. All new instruments. New Windshield and side windows. Tinted Roof. New "lifetime sealed struts" with 5/8 forks. Dual pulley trim system mounted overhead. Left side window outward opening. New upholstery. Aircraft completely recovered in Ceconite. New pulleys.

Aircraft licensed in the Amateur Built category and can be flown in the USA. Wonderful aircraft to fly, with excellent climb performance. Aircraft is at AK3 (Delta) $45000 OBO Call Bob at 604 220 6385 Jan 08

Wanted

WANTED Aeronca Champ. Preferably 85 to 100 hp Continental. Located Ontario or Quebec. Contact <tingle@ionsys.com Feb08

Do you have a 12 ft table taking up valuable space. I need one for my Pegazair project. Toronto area but will travel distance to pick-up. Also need an assortment of clecos. Larry 416 526 2602 or larry@patronproducts.com Feb08

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

RAAC has sets of electronic scales that are available to all members for doing the weight and balance calculations on their aircraft. Only $30 for weighing. Contact the RAA office at 1-800-387-1028 to reserve a set.

RV7a to RV7 Conversion

Part 1 / By Tom Martin

Top, picture 1: The tail had been installed and we felt that we could do the conversion by only removing the rudder and vertical fin.
Above, picture 2: Next, the rear bulkhead needs to be drilled out and removed.

OVER THE LAST YEAR there have been a lot of internet discussions surrounding the strength of the Van's nose wheel gear. A few airplanes have been flipped on their back when the airplane is landed on grass in such conditions that allowed the nose gear main pivot nut to contact the ground. The nut would then dig into the ground and the nose spring now became a pole vault which resulted in airplanes flipping upside down. I am not sure if there have been any fatalities but certainly aviation equity has been lost. At first these incidents were blamed on pilot error as there have been many thousands of hours of safe flight logged by the nose gear versions of Van's aircraft. However, last year, video footage of a flip over in England caused quite a stir as many did not feel that the landing was in any way a bad landing. Van's has come out with a fix that changes the angle of the forward nose gear fork. This raises the offending nut much higher and should greatly reduce this issue. The other fix, albeit a bit more work, is to convert the aircraft into the tail wheel version. This winter I am helping Gary Wilcox with his RV7a and it was the stage where the engine and prop were installed but no other firewall forward work had been done. The panel is not yet installed and it seemed that this might be a good time to make the conversion. One of the main reasons for having a nose gear RV is the perceived increase in safety


3


4


5


6

that it offers over the tail dragger version. The RV7 is one of the easiest tail draggers that I have flown and when you combine that with the tip over issues of the "a" series we felt a conversion was warranted. The parts were ordered from Van's at a cost of $1953 US. The old engine mount and gear legs should be able to be sold as parts to other nose wheel owners to recoup some of the conversion costs. In this issue I will discuss how we installed the new rear tail spring mount.

Picture 3: The new tail wheel weldment is installed between the #11 and #12 bulkheads and the forward part of the weldment is attached to the lower part of the #11 bulkhead by two bolts. The nice thing about these prepunched kits is that all the guess work is taken out for this step. Simply drill out the bottom two rivets, and transfer the measurement across, in this case 3 inches, to pilot holes centred in the forward flange of the weldment. An oblong slot needs to be cut in the aft end of the bottom skin to allow the part to fit down below the skin line. The slot is made large enough so that the forward flange of the part will align with the new pilot holes and the flange will be flush against the aft side of the #11 bulkhead.

Picture 4: Clecoe the new part in position and make sure that it is level, side to side, and that the tail spring aligns with the centre line of the fuselage. At that point the part is removed from the plane and the holes in the part are drilled out to ¼". One of the holes in the #11 bulkhead is drilled out to ¼" and then the part is installed with a bolt in that hole. The other hole is then drilled up to size after double checking alignment. To drill the holes we purchased a 12" long drill that allowed us to drill the holes from the aft side of the bulkhead. This greatly improved the accuracy and also sped up the process.

Picture5: The last part critical part of the conversion is aligning the new three holes that will attach the weldment to the #12 bulkhead and at the same time to the bottom end of the vertical stab rear spar. To do this I pre drilled pilot holes in the aft flange of the weldment and bolted the unit in place. The rear bulkhead is now clecoed back in position and the tail spring checked for alignment. Reach through the inspection holes and mark the forward face of the weldment using the three pilot holes in the aft flange.

Picture 6: The parts are now removed and the pilot holes in the #12 bulkhead are drilled. Using the original bolt holes that held the tie down bracket in place the #12 bulkhead and the rear spar of the VS can be held in position. The pilot holes in the #12 are now transferred to the VS spar.

The parts are then put back together on the plane and the aft three holes are drilled out to size.

Finally, the metal parts now need to be either painted or powder coated before the parts can be finally installed and the bulkheads riveted back in position.

This is not a difficult process and I would allow a day for the work, not counting the time it might take for painting. Part II will discuss the removal of the engine and main gear legs and the installation of the new motor mount and new gear legs.

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 Pierre Fournier, pierre.fournier@cmcelectronics.ca (514) 645-4355

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 every first Thursday of every. month, at 7:30 PM except July and August, at the Collingwood Airport or at off-site locations as projects dictate. The January meeting is a club banquet held at a local establishment. For more information contact Pres. Keith Weston at 705-444-1422 or e-mail at kcweston@georgian.net

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 , Jim Easter 519-676-4019 jim.easter@teksavvy.com.

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

LONDON-ST. THOMAS: First Tuesday 7:30 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 Tom Massey 705-526-5304, fax 526-5310

NIAGARA REGION: Second Monday 7:30 pm at Niagara District Airport. Contact Pres. Len Petterson swedishcowboy29@aol.com http://home.cogeco.ca/~raaniagara/

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

OWEN SOUND Contact President Roger Foster 519-923-5183 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 RAA Hangar, Lyncrest Airport or other location as arranged. Contact President Ben Toenders at 204-895-8779 or email raa@mts.net. No meetings June, July & Aug. RAA Winnipeg info also available at Springfield Flying Center website at http://www.lyncrest.org/sfcraac.html.

SASKATCHEWAN

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

ALBERTA

CALGARY chapter meets every 4th Monday each month with exception of holiday Mondays and July & August. Meetings from 19:00-22:00 are held at the Southern Alberta Institute of Technologies (SAIT) Training Hangar at the Calgary Airport. Join us for builder discussions, site visits, tech. tips, fly out weekends and more. Contact president Calvin Thorne at 403 932-4325 or email: cbthorne@telus.net

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

GRANDE PRAIRIE: Third Tuesday, 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: meetings held every third Thursday of every month (except July & August) at the Taylor Fire Hall at 7:30 p.m. For more information call Richard at 782-2421 or Heath at 785-4758.

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

AIRCRAFT SPRUCE

The Parts Supplier Aircraft Builders Worldwide Have Depended on Since 1965!

Same Day Shipping!
Guaranteed Lowest Prices!
Premium Quality Products!

OVER 45,000 PARTS IN STOCK!

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

Open Weekdays 8am - 5pm, Saturdays 8am - 2pm, Closed on Sundays

FREE 750 page Parts Catalog

Aircraft Spruce Canada
1760 Meyerside Dr., Unit 5,
Mississauga, ON, L5T 1A3
Ph: 1-877-795-2278 www.aircraftspruce.com

info@aircraftspruce.com

www.aircraftspruce.com