

free flight libre



THE SAC BOARD OF DIRECTORS MET IN OTTAWA from 23 to 25 November; it is the only face-to-face meeting we have other than at the AGM. It gives us the opportunity to immerse ourselves with SAC business and to deal with SAC's ongoing issues, committee items, and planning for 2013.

An ongoing challenge for our sport has been the declining membership and what can be done to stem the tide and improve the numbers. The popular solution that has been put forward on many occasions is more advertising of our sport to improve the visibility amongst the general public and, as such, possibly attract more potential members to the SAC clubs. Some limited efforts have been made at the national level, such as the COPA insert. The SAC Marketing committee continues to search out ways to be effective in planning national advertising for 2013.

However, as the majority of new members to any SAC club come from a population area within a reasonable driving distance of it, then club-driven marketing initiatives have the greatest chance of success in attracting new members to their club – working bottom up rather than top down. Recognizing this, the Board of Directors approved the following motion at the meeting:

“That SAC support club marketing by providing a rebate to match the club's investment in marketing to a maximum of 10% of their paid-up SAC membership as of 1 October of the year of the incurred expense. This initiative can be combined between clubs to create a larger marketing program in an area and is available to support the initiatives already made by clubs in 2012.”

In our ongoing search for solutions to the membership problem I was surfing the net and came across “*Proceedings from the EGU (European Gliding Union) workshop on Club Development, Recruiting, and Keeping Members*”, Amsterdam, 2012-02-24. Our *Free Flight* editor came across the same material and has made it the subject of an article beginning on page 4 (*Gliding is the answer – but what is the question?*) and provides the link to the referenced material. I recommend this material as a basis to stimulate discussions at the club level. One of the reports delivered at this EGU meeting was, “Emerging hypothesis – Looking up won't find us *THE* solution – we need to look down to the club level”. A summary of it is on page 24.

And Patrick Naegeli, president of the European Gliding Union, said:

“One of our most pressing issues remains, however, unaddressed. Participation levels in gliding are declining in almost every country in the world. If this trend is not reversed then our sport will become increasingly marginalized and difficult to sustain in any appreciable way. We have known about this issue for many years – it is the elephant in the room that everyone can see, but seemingly no one wants to talk about. And, while individual countries might have tried to do things in order to systematically grow participation and activity levels, there is no evidence that the sport is anywhere close to understanding the basic issues it faces, never mind come up with ways of dealing with them.”

The 2013 SAC AGM is being hosted by the Cu Nim club and is scheduled for 16 March in Calgary – plan to be there. The EGU reports would make a good topic for a workshop session at the AGM.

The primary benefits we as glider pilots derive from our sport fall in the category of “intangibles”. It is not easy to sell intangibles. Maybe having more structured flying programs at the club level to better meet the goals of club members would make it easier to sell “gliding” to the new prospects. Perhaps they will then eventually understand the intangibles that keep the core group coming back each year.

All of us on the Board this year would like to thank all the volunteers that keep our sport alive; without you the clubs and our organization called SAC would become extinct.

I trust you had a Merry Christmas – and all the best in 2013.

free flight

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A little acrobatic work over York Soaring in the K-21. York offers aerobatic instruction to its members, and to others at the spring acro camp. Several of those have joined as part time members to continue with their acro, while maintaining their memberships at their home clubs.

We also use our DG-500, and now have at least five acro instructors at York. We are indebted to SOSA for sharing their program and assisting us in launching ours.

photo: Miguel Londono

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STOP PRESS!

The SAC insurance group plan will provide a 5% discount on 2013 aircraft premiums for aircraft flying with a FLARM unit.

Gliding is the answer

but what is the question?

Graeme Porter, from *Gliding International*

THE EUROPEAN GLIDING COMMUNITY has long shown that, by working collectively, the sport can address fundamental regulatory and technical concerns more successfully than if individual countries worked in isolation. Without such efforts the sport would not be as well positioned as it is. However, the most pressing issue remains unaddressed – participation levels in gliding are declining in almost every country in the world. If this trend is not reversed then the sport will become increasingly marginalized and difficult to sustain in any appreciable way. Gliding as a whole has known about this issue for many years – it is the elephant in the room that everyone can see, but seemingly no one wants to talk about. Whilst individual countries might have tried to do things in order to systematically increase participation and activity levels, there is no evidence that the sport is anywhere close to understanding the basic issues it faces, never mind come up with ways of dealing with them.

It was an important moment when the members of the European Gliding Union decided at their 2011 Congress to take the first, tentative steps in looking at the participation crisis. The outcome was a workshop held in Amsterdam on 24 February 2012 to explore club development and options for recruiting and keeping members.

The outcomes of a number of papers presented at this Congress were not intended to introduce a complete strategy for the future development of gliding clubs nor did they try to identify the complete list of challenges facing gliding. A significant outcome of the IGC Pilot Survey was that the most engaged members tended to favour cross-country flying rather than other glider-related activities. While a number of successful clubs have this figured out, anecdotal evidence suggests there is often a bias in clubs towards the training of ab initio pilots to certification, and that's where participation falls off.

Cross-country soaring is often the most challenging to start getting involved in, by virtue of the often huge gap that needs to be crossed just to start practising. It is also one of the most rewarding for those who manage to make it.

For club executives, the significance of having a solid plan for transitioning pilots to cross-country is twofold. First, by increasing the number of cross-country pilots at your club, you increase the percentage of your members who tend to be the most active and committed to gliding. This core group will probably stick around for more years and contribute back to the club in a more tangible way. Second, by creating a tangible path to cross-country you are giving newly-certified pilots an additional option to pursue in their gliding activities, helping to avoid a common path out of our sport in which new pilots will often feel aimless and tire of flying locally once they have achieved their goal of certification. Presenting these pilots with the right goals and incentives to keep engaged in our sport should be our number one development priority.

A further interesting result to emerge from the IGC Pilot Survey concerned the relative strength of gliding nations. An objective of the study was to gain a better view of how strong the soaring movements were – which were the most problematic and which were the most advanced nations. Statistical analysis of the results brought an unexpected answer in that the actual situation is not so one-dimensional. Countries tend to cluster around three different groupings, which were termed as follows:

• **countries having barriers to flight** Here, numerous problems make the practice of gliding very difficult. Anything from small gliding communities, lack of gliding heritage,



SOARING ASSOCIATION of CANADA

is a non-profit organization of enthusiasts who seek to foster and promote all phases of gliding and soaring on a national and international basis. The association is a member of the Aero Club of Canada (ACC), the Canadian national aero club representing Canada in the Fédération Aéronautique Internationale (FAI), the world sport aviation governing body composed of the national aero clubs. The ACC delegates to SAC the supervision of FAI-related soaring activities such as competition sanctions, processing FAI badge and record claims, and the selection of Canadian team pilots for world soaring championships.

free flight is the official journal of SAC, published quarterly.

Material published in *free flight* is contributed by individuals or clubs for the enjoyment of Canadian soaring enthusiasts. Individuals and clubs are invited to contribute articles, reports, club activities, and photos of soaring interest.

E-mail contributions as an attachment in Word or a text file. Text is subject to editing to fit the space available and the quality standards of the magazine. Send photos as unmodified hi-resolution .jpg or .tif files.

free flight also serves as a forum for opinion on soaring matters and will publish letters to the editor as space permits. Publication of ideas and opinion in *free flight* does not imply endorsement by SAC. Correspondents who wish formal action on their concerns should communicate with their Zone Director.

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ASSOCIATION CANADIENNE DE VOL À VOILE

est une organisation à but non lucratif formée d'enthousiastes et vouée à l'essor de cette activité sous toutes ses formes, sur le plan national et international. L'association est membre de l'Aéro-Club du Canada (ACC), qui représente le Canada au sein de la Fédération Aéronautique Internationale (FAI), laquelle est responsable des sports aériens à l'échelle mondiale et formée des aéroclubs nationaux. L'ACC a confié à l'ACV la supervision des activités vélivoles aux normes de la FAI, telles les tentatives de record, la sanction des compétitions, la délivrance des insignes, et la sélection des membres de l'équipe nationale aux compétitions mondiales.

free flight est le journal officiel de l'ACV publié trimestriellement.

Les articles publiés dans *free flight* proviennent d'individus ou de groupes de vélivoles bienveillants. Tous sont invités à participer à la réalisation du magazine, soit par des reportages, des échanges d'idées, des nouvelles des clubs, des photos pertinentes, etc.

L'idéal est de soumettre ces articles par courrier électronique, bien que d'autres moyens soient acceptés. Ils seront publiés selon l'espace disponible, leur intérêt et leur respect des normes de qualité du magazine. Des photos, des fichiers .jpg ou .tif haute définition et niveaux de gris peuvent servir d'illustrations.

free flight sert aussi de forum et on y publiera les lettres des lecteurs selon l'espace disponible. Leur contenu ne saurait engager la responsabilité du magazine, ni celle de l'association. Toute personne qui désire faire des représentations sur un sujet précis auprès de l'ACV devra s'adresser au directeur régional.

Les articles de *free flight* peuvent être reproduits librement, mais le nom du magazine et celui de l'auteur doivent être mentionnés.

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problematic operation of clubs, lack of equipment, bad soaring weather, regulatory and airspace issues.

- **slightly restricted countries** Mature gliding community. Gliding clubs operate very well, very good equipment and organization. However, their operations are restricted by such things as regulations and airspace, bad soaring weather.

- **“land of plenty” countries** The most immediate growth potential is in clubs that are in, or close to the above group. What really counts, however, is not how many people manage to get into an introductory flight, but how many will stick around to become glider pilots. For sustained gliding development, what ultimately matters is how many of these pilots will continue to engage with gliding and become active members of the gliding community. *The moment a person new to gliding arrives at the airfield for the first time is when the real work begins.* Whatever strategies and policies are conjured and implemented, it is the experience this person will have that day and for the next couple of months and through the years to come that will define success.

What has probably not changed as much is how we run our clubs and seek to develop them. Recommendations emerging from the IGC Pilot Study and work within the group to turn this into actual policy included:

- Developing gliding depends on increasing the quality of our sport for our membership.
- Appropriate marketing will attract the most promising prospective glider pilots.
- Focusing on easing transition of pilots to cross-country is an important development goal, both in increasing the quality of the sport and in improving pilot retention rates.

Nordic Gliding Meetings have addressed many of these issues. Claus Nedergard-Jacobsen of Denmark addressed the workshop with his vision of a “Glorious past to a glorious future”. He noted that when watching the behaviour of the gliding community for the past thirty years, goals or strategies are difficult to determine. Clearly, the ‘do-not-want’ factors surface such as over-regulation, increased fees, loss of airspace, and loss of members. But, do we really know where we want to go?

Gliding was born out of a wonderful goal – making flying accessible to common man. In the dawn of flying, it was perceived as something as magical and heroic as manned space travel today, but it was a privilege reserved to the wealthy and few. Gliding changed all that. Although it could only provide simple non-powered flight, it was flying. Somewhere along the road it was discovered that non-powered flight is even more fun than powered flight. That is the mission gliding succeeded with. But what has been the mission since the 1980s? To defend what we have? The mantra so far has been that gliding is “easy, safe and inexpensive”. What would happen if instead, we started marketing gliding as “difficult, dangerous, and horribly expensive?”

ASKING THE RIGHT QUESTIONS

When formulating new goals, simply considering “How?” questions is not enough. Every time someone comes up with a proposal for a solution, a ‘how to’ question is perceived. For instance: if we could just find funding, gliding could be made cheaper and many more people would flock to our gates. But is that really true?

The most important question is “Why?” Why would any sane person want to fly a non-powered aircraft that is twice as expensive as a similar powered light sport aircraft? This is followed by the many “What?” questions that could be asked. For example, what has changed since gliding had its glory days?

“Who?” questions come next. Who are the people we should try to attract and please? (the market segments). The rich, the technically minded, the poor, the adventurous, women, teenagers? Who should we consult when trying to figure out how gliding could be adapted to life in 2013 and beyond? ⇒ p28

Gliding in Bahia

Branko Stojkovic, VSA

MY FIRST TRIP TO SOUTH AMERICA was in January 2012 to take part in the pre-World's contest at Adolfo Gonzales Chaves, Argentina, where I represented Serbia, my country of origin. I decided to take part in the pre-Worlds in order to learn something about the local conditions and improve my chances for a good result in the Club Class Worlds which will be held in the same place right about now (January 2013). I could have written a long article about my first trip to Chaves, but since I will be going back there again for the Worlds next January, suffice it to say that my first trip there far exceeded all of my expectations.

At Chaves I made a number of friends – this story is about one of them. I met Guilherme Purnhagen-Gugui, a member of the Brazilian gliding team, in the Chaves airfield cafeteria the day that I arrived. It was immediately obvious that we had something in common, being the two tallest pilots in the contest (me at 6'-4" and Gugui at 6'-5"). By the luck of the draw, we also ended up in the same row on the grid, which gave us the time and opportunity to chat and socialize every day prior to takeoff. After the contest, Gugui and his crew gave me a lift back to Buenos Aires on their way back to Rio do Sul, Brazil, in a Canadian made school bus! Gugui also invited me to join him and his friends in Bahia province of Brazil in September this year, where they go annually for a month of cross-country flying. He said that there were only two types of weather in Bahia in September: good, and great. I accepted the invitation, as long as I could find the time and money to make the trip.

After returning home, we kept in touch by e-mail and by late July I had to make a decision as to whether or not I was going to Bahia. Gugui also had to know in order to plan the 2300 km road trip from Rio do Sul in Santa Catarina province to Luis Eduardo Magalhães (LEM) in Bahia. If I went, he would also bring along the Jantar (the same one he flew in Argentina) in addition to his

Nimbus 3T. Unable to find a good reason why not to go, I bought the airline tickets to fly from Vancouver to Brasilia and then on to Barreiras in Bahia on a local airline. So, the trip was on and I was looking forward to new adventures in South America.

Flying and socializing I arrived at Barreiras municipal airport on the morning of 15 September after a 26 hour trip. Marcel Juppa, Gugui's good friend and ground crew chief extraordinaire, was there to pick me up and bring me to LEM, about an hour and 15 minute drive west of Barreiras on a busy local two-lane highway. Once there, I had a quick lunch and we were off to the airfield, a couple of kilometres west of the town, to join up with Gugui and the rest of the group. Gugui's Jantar (JB) was rigged and tied down behind the hangar, ready to go. With all of the excitement, I didn't feel tired at all and decided to make a short local flight to get a feel for the Jantar, since I'd never flown that type before. The day was blue with a strong easterly wind which made the thermals somewhat difficult to centre, but this was perfect for getting some practice on the glider before loading it with 150 kilos of water and heading off on a cross-country flight. The 2:45 hour flight was enjoyable and uneventful. Afterwards, we tied down all the gliders and headed back to the apartment for a welcome shower and a barbecue supper.

The whole group, including Gugui's family and friends, stayed in a small three-bedroom apartment located in a corner of Tomé's hangar, and they made room for me in one of the rooms. Tomé, who owns a local crop dusting operation with two Piper Pawnees and three Cessna Ag-Wagons was our host and, with September being an off-season for crop dusting, also our tow-pilot with one of the Pawnees. While the accommodations weren't very fancy, the meals cooked by Gugui's mother-in-law Araci were fantastic. One day we went to a local farm and picked eighty fresh coconuts for some freshly extracted

coconut juice. Several times Tomé invited the whole group to a nice little resort with a swimming pool on the banks of the local stream, for a good meal and a swim.

Had the flying been unremarkable, the wonderful hospitality of my hosts and the good times we spent together would have made the trip worthwhile. However, during the week that I spent in Bahia I enjoyed some of the best weather and made some of the best and most memorable flights of my 30+ year gliding life. The first one, that turned out to be the shortest at 457 km, was still good enough for seventh place on the OLC Worldwide daily score. That was followed by a 660 km flight in the Jantar, 684 km and 817 km (805 km FAI triangle) flights in the Nimbus 3T/24.5 and another 574 km (537 km FAI triangle) in the Jantar. These four flights were 1st, 2nd, 1st, and 1st on the OLC Worldwide daily score tables!

Local conditions for gliding The facilities at the new LEM airport were superb, starting from the brand new 2000 metre long paved runway, to the spacious hangar with the tiled floor, bathroom and a water cooler. In the area around LEM there are several other airfields, one of which is a dirt runway just on the other side of Tomé's hangar where we stayed.

Due to its unique geographic location, Bahia offers some of the best weather conditions in the world for long cross-country flights in the period between mid-August and mid-October. During this peak season, the cloud bases are typically between 10,000 to 14,000 feet, which is the kind of weather I experienced. Some years there are more blue days, but on those days the thermal tops can be even higher, up to 16,000 feet. The thermals typically produce 5–8 knot lift, but it is not unusual to find 10 knots or more. My best one was a 14 knot boomer! Because of the closeness to the equator (LEM's latitude is 12° south), the wind in the convective layer is almost always 5 to 25 knots from the east. The average maximum daily temperature in September is around 34°C, with a relative humidity of 10 to 30%, making the heat quite bearable.

The rest of the year is also flyable; however, during the rainy season which lasts from mid-October to April, cloud bases are lower and isolated cb develop every afternoon. On the flip side, the lift is generally stronger than during the dry season and the thermals are spaced closer together, allowing for

some very fast and fun flying. During the peak mid-August to mid-October season the days with non-soarable weather are extremely rare, although I did experience one day with overcast skies that didn't clear until late in the afternoon.

The terrain around LEM is a plateau at around 2500 feet asl, generally flat with many cultivated fields suitable for outlanding. About 60 km west of LEM lies the border between Bahia and the neighbouring Tocantins province. Once inside Tocantins, the terrain drops to about 1500 feet asl and becomes mildly undulating and covered with dwarf trees and wild shrubbery. In Tocantins there are very few places to land and not many roads for retrieval. However, the weather in Tocantins tends to be somewhat better than in Bahia, so a good strategy is to start by heading west until you are about 20 km into Tocantins, before turning north or south for the second leg of the triangle. You can then continue flying inside Tocantins, parallel to the Tocantins-Bahia border in excellent weather, but still close enough to the landable terrain in Bahia. The last leg-and-a-half is flown back in Bahia.

Both the terrain and the weather are quite uniform within at least a 300 km radius from LEM, allowing for long flights and large FAI triangles. There is no altitude limit and there is only one small area of controlled airspace around Barreiras, some 90 km east of LEM. I spent most of the flying time outside of radio range, but I had my SPOT tracking turned on and it worked without a hitch.

Weatherwise, there are only two minor downsides. One is the smoke from brush fires, which can in some places reduce the visibility to only a few kilometres. However, the smoke is not all bad news, since the brush fires also provide a reliable source of lift, especially towards the end of the day. On my last day I used a very strong thermal generated by a big wildfire to climb from 1200 feet agl (the lowest I'd been the whole week) to some 8000 feet, enough for the final glide with the MacCready set at 6 knots.

The other downside is that the days are shorter than in the summer at higher latitudes. The sun sets 6 pm sharp and by 6:15 it is totally dark. All of my cross-country flights lasted between 5 ½ to 6 ½ hours, and I made my final glides into the setting sun, landing between 5:10 and 5:40. Given that on most days I could have taken off between half an hour to an hour earlier, the maximum flight time one can count on is around seven hours.

In order to complete a 1000 km FAI triangle, one must use up every bit of the soarable weather and average no less than 140 km/h. This can probably be done several times a season in a high performance glider. For example, the day I did my 800 km FAI triangle I could have taken off about 45 minutes earlier. Also, my average speed of 128 km/h could have been better had I had the full water ballast on board and had I been more familiar with the glider (this was only my second flight in a Nimbus 3 and the first one with ballast). On the plus side, 300, 500 and even 750 km FAI triangles can be flown on many days and completing them doesn't require the latest and greatest equipment.

⇒ p29



High and fast

100 km records in the Cowley wave

Tim Wood, York

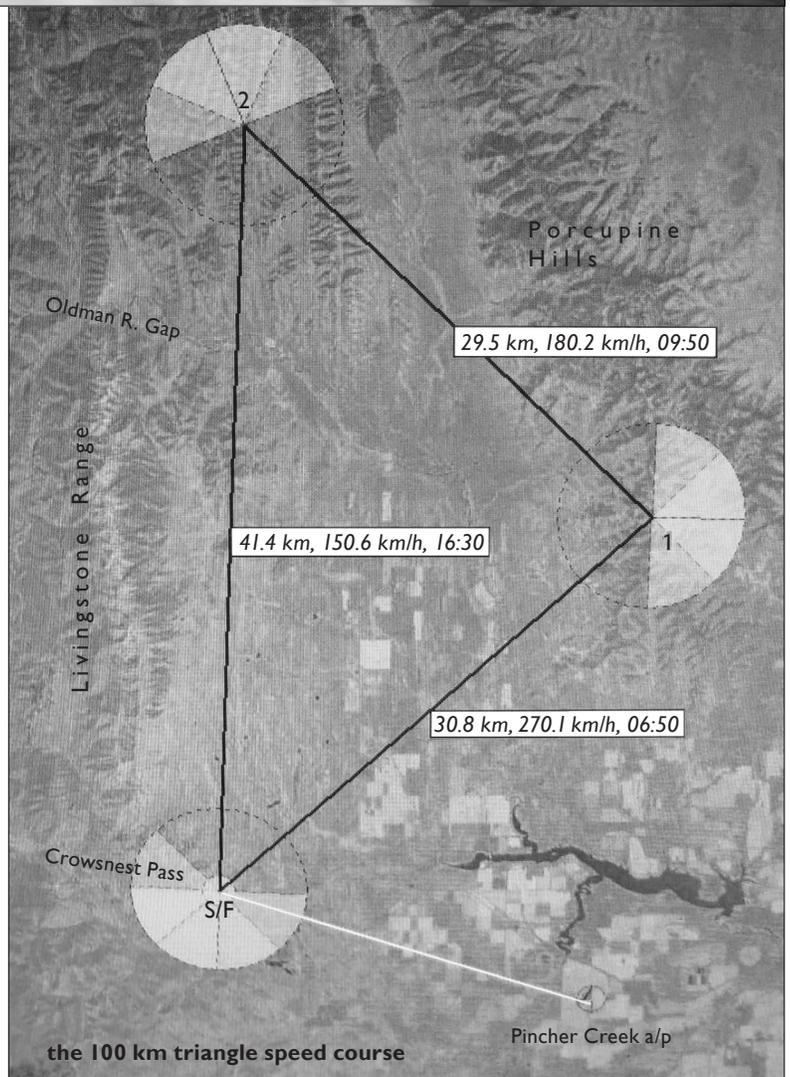
THE INSPIRATION TO ATTEMPT these record flights was the thoughtful and exciting article by Dave Mercer in *free flight* 06/2004, available in the SAC archive. I recommend that you download this issue to understand his thinking in approaching similar flights that he did eight years ago. An attempt on these two records had been on my agenda for years and I was happy when, finally, the “planets aligned” in September and my DG-400 and I were in Pincher Creek ready to give it a try.

SAC 100 km speed-to-goal record

For the goal flight, flown on 3 September, I chose to fly downwind from north to south, as the wind favoured that direction on the day of my attempt. My start point was further north than Dave had chosen, as I wanted to finish near the Shell gas plant 19 km south of Pincher Creek. I had had bad experiences when going any further south than that in some previous flights. I aimed to spend the maximum possible part of the flight track during the speed run in the primary wave, parallel to the Livingstone Range within the Cowley wave block.

My start was abreast the south end of Chain Lakes at just over 13,000 feet and my finish was at the Shell gas plant at 10,600 feet. The flight went very much as planned, but at a fairly low average altitude.

The weather was fine with a 26 kt wind above mountain-top altitude from direction 285°. Wispy cu development at 11 am thickened up into lines of heavy fat cumulus clouds later in the day, with bases at around 12,000 and tops around 15,000. Below 10,000 feet, soaring conditions were difficult but above that it was classic Cowley wave with 10+ knots lift in both primary and secondary.



Prior to the start, I climbed in wave to 15,000 feet and used 2000 of this to get to the start point. Following the start I was lucky to find almost continuous lift on the early part of the course, as the best line to take was not obvious from the visual cues. Once in the lee of the Livingstone Range, the heavy-duty lift kicked in and I was able to increase ground speed to over 200 km/h without losing height. Edmonton Centre gave me clearance to cross the V300 airway (the Class B airspace that crosses east-west over Cowley) between 13,500 and 15,000 feet. I increased speed further, accelerating to the finish in weaker lift, and crossing the finish line at 10,600 feet.

Hopeful of doing a second run, I opted not to land back at Pincher Creek at this point, but headed back towards the Crowsnest Pass. When I reached the Livingstone Range from the south, I was too low to reconnect with the wave lift, and after a struggle for altitude in small rotors, I restarted the engine for a boost in altitude. Back in wave lift, I climbed very rapidly, but as I flew north towards the start there was continuous unbroken cloud cover with tops around 15,000 feet. I opted to descend from 17,000 feet in very strong conditions to below the cloud cover based at 12,000 to get back to the start, but found no useable lift at this low level. I had traded booming wave lift above cloud for flight-ending weak conditions below. After a lengthy struggle, I re-started the motor and landed at 6:25 pm back at Pincher Creek.

This flight set a new territorial 100 km speed-to-goal record of 180.3 km/h in the 15m and Open classes, and a new Club record of 169.5 km/h. Previous records were 167.0 km/h for 15m and Open, and 156.9 km/h for Club (the flight track for this flight can be found on OLC as *293A10D2.igc*).

FAI 100 km triangle speed record

On 14 September, the weather forecast called for westerly winds with speeds of over 30 knots at mountaintop height. The sky was severe blue with no probability of any cumulus clouds. Convection was weak. Smoke from forest fires in BC revealed a temperature inversion at about 8000 feet. The Flight Information Centre at Edmonton predicted increasing wind speeds, decreasing temperatures, and fairly consistent direction with increasing altitude. Wafer-thin lenticulars at 30,000 feet promised high level wave. There were no visual clues of lower wave inside the Cowley wave block, but this forecast was very encouraging.

I laid out a course to suit the conditions. I was attempting to set a new speed record over a 100 km FAI triangle. This course was entirely within the block, but with the start and finish at Bellevue under V300. The other turnpoints making up the triangle were a map reference in the Porcupine Hills to the east and a map reference north of the Old Man River Gap in the Livingstone Range defining the north corner of the triangle. The longest leg (N-S) of 41 km was situated in the most likely area of lift, in the immediate lee of the Livingstone Range. The two shorter legs of 29 and 30 km respectively were in the likely areas of sink further to the east. I flew the course twice, both times in a counter-clockwise direction.

After a take-off at 1010, and before starting the speed run I explored conditions as far north as Chain Lakes. No strong wave was found north of the Old Man River Gap. The wave

in the lee of the Livingstones was unusually far to the east in a position often occupied by the secondary wave, an indication of very strong winds aloft. Lift in the wave was the usual 10+ knots in places and was located under the leading edge of a large thin white lenticular.

I began the record run at Bellevue at 1252 at an altitude of over 23,600 feet and flew as fast as I could without losing too much height. FAI rules permit a total altitude loss of 1000 metres over the course. My average indicated airspeed was 80–90 knots, comfortably below the V_{ne} for my ship at these altitudes. On the first leg, almost directly downwind from the start, my average speed over the ground was 270 km/h. I rounded the first turnpoint at 21,700 having only lost 1900 feet. This is the advantage of flying high; both lift and sink tend to be more moderate than lower down.

On the second leg, which was more into wind, my average speed dropped to 180 km/h. I rounded the second turnpoint at 18,800 feet, leaving me 4800 feet below the start. On the final leg, running north to south, it was necessary to deviate somewhat from a direct line to the finish to stay in wave lift as much as possible. So leg number three was a curved path. My hurdle was to regain at least 1500 feet of the height lost earlier in the first two legs while at the same time keeping a high average speed. My average speed on this third and final leg was 150 km/h over the 41 km. I arrived back at the finish just 2000 feet below my start altitude, well inside the permissible loss of height.

I repeated the run using a less direct route strategy this time by staying in wave lift longer, flying a greater distance, and making a 90° departure from the lift to do a quick side trip to the first turnpoint and back before heading north to the second turnpoint. This second run was slower though, so the claim stayed with the first. After this circuit I flew down to the USA border just for fun then returned to land at Pincher Creek at 1529 as the wave lift weakened.

I was in active communication with Edmonton Centre during the speed attempt due to my proximity to the V300 airway. As usual, they were very supportive and cooperative during the flight.

The record run had an average speed over the ground of 183.3 km/h, covering the 101.7 km distance in 33 minutes and 17 seconds. This exceeded the previous Open class records of 141.5 km/h set by Dave Mercer in 2004 and the Canadian Citizen record of 168.1 km/h set by Dale Kramer in Pennsylvania in 1999. This new speed record has been confirmed for the Open and 15 m classes. The new Club record is now 172.3 km/h. The previous Citizen record has been deleted as it has now been exceeded by the new Territorial record (the flight track for this flight can be found on OLC as *29EA10D2.igc*).

Cowley had worked its magic once again. I think that this record could likely be improved upon over the same course by simply flying at higher indicated airspeeds, as I held back significantly during this flight. I think 200 km/h is a realistic goal on a nice windy day. ❖

Adolfo Gonzales Chaves

Dennis Froese, London SS



ON READING THE REPORT of the Canadian team in Uvalde in the last *free flight*, I was inspired to contribute this. I was fortunate to be able to attend the pre-World competition in Chaves, Argentina in January 2012, not as a competitor, but in a support capacity. I wasn't very familiar with competitive soaring – at least not until my experiences in Chaves. I'm a recreational glider pilot in London, ON, and an AME. I didn't begin gliding until in my late 40s, although I did grow up near Cowley and knew about the sport.

The South American Gliding Championships, the Argentinian National Championships, and the pre-Worlds Gliding Championships were held concurrently in Adolfo Gonzales Chaves, a small town on the Argentinian pampas. The World championships had two venues: one completed in Uvalde, Texas this past summer for 15m, 18m, and Open classes; and the other site will be in Chaves in January 2013 with the Standard, Club, and World classes competing.

While I was travelling in Argentina in 2011 I stumbled on the Argentinian Nationals in the town of Azul and spent a few days there. I don't speak much Spanish and there were only a few people who spoke English. Nevertheless, I did learn a little and got to fly with one of the former champions in that club's Puchacz.

When the possibility arose of going to Argentina in January 2012, I got on the internet to see if their Nationals were happening again. If it was, I'd go. To my surprise, not only the Nationals, but also the South American, and something called the pre-World Gliding Championships were on. At first I didn't know what "pre-World" meant, but it sounded bigger and better than what I had experienced in Azul, so I set my sights on a town with the long name of Adolfo Gonzales Chaves (a mid-nineteenth century politician) and the competition.

The day after I arrived in Buenos Aires I took one of the excellent double-decker buses first to Azul and then connected with another bus to go another 150 km to Chaves. It's 450 km south of the capital. Chaves has a billboard on the way into town advertising itself as the gliding

capital of Argentina. It is a small agricultural town of about ten to twelve thousand people and has only two hotels. The first hotel was full and the second only had room for the first few days. I arranged to stay for two nights with the thought that I would be able to go to the gliderport the next day, have a place to stay that night, and then make whatever arrangements I needed to in order to attend the event.

As luck would have it, as I was having breakfast, a man came in (his name was Marcelo Rico) and asked me if I was the pilot he was supposed to meet and take to the gliderport. He asked first in Spanish and when I didn't understand, he asked again in English. I explained who I was and that I was interested in hanging out and helping if that was possible. After a short conversation, he said that it might be possible, but first he would take the pilot he was looking for to his glider and then return to pick up his wife and kids at the other hotel, then me, and we would go back to the gliderport.

Marcelo was the team captain for three Spanish pilots and a Finnish pilot. He had made all of the arrangements for renting gliders and the logistics for those pilots. Helping him was another couple of friends and together we all formed the team. It didn't take too long for him to realize that I would be an asset and he invited me to stay at the campground with his family and friends. He provided me with a tent, air mattress, sheets, and a blanket. I was now a member of the crew!

Gliding is a very popular sport in Argentina – most cities and many towns have clubs. The gliderport is named after one of the early gliding pioneers, Otto Ballod. It is located about four kilometres outside of town and is much like a KOA campground, with a swimming pool, tennis courts, a restaurant, and a canteen. There are three hangars to house the local glider population and it is shared with the motorized aeroclub. The spirit here is very much a family affair with babies to grandparents all enjoying the activities and socializing. During the competition many of the teams were camping onsite. There are two runways at the field and the topography reminded me very much of the prairies around Regina.

Individuals and teams from thirteen countries were represented. Teams from the USA and Europe were there to gain an appreciation of the topography and weather conditions and to practise for next year's World Championships. There were teams from Russia, Lithuania, Spain, Serbia, France, Germany, Italy, Netherlands, United States, Chile, Colombia, Brazil and, of course, lots from Argentina. After the Argentinians, by far the largest representation was the French team with a dozen pilots and a team manager, with two pilots each sharing a rented glider on alternating days. They were practising team flying and seemed quite disciplined with morning strategy meetings each day. I suspect that they will be one of the most powerful teams at next year's championships.

As far as I know, there were three Canadians there – me, Branko Stojkovic who now lives in Vancouver and was representing Serbia, and one of the American pilots, Sarah Arnold, originally from Lumby, BC and now living in Tennessee.

There were 107 gliders competing in three classes. There was an FAI representative present to oversee and advise the organizers. The contest seemed fairly well organized with only a couple of minor glitches. Of the fourteen days of the competition, there were eight flying days for two of the classes and nine for the third.

One of the cancelled days was from volcanic dust blown in from an eruption far away in Chile. The dust obscured the sky and thermals were nonexistent. On the other days thunderstorms typical of local frontal convergences cancelled flying activity. One of the thunderstorms brought the threat of hail which had everyone derigging and heading for protection in trailers or, if on open trailers, into town to the large covered arena. On one cancelled day, we went on a long drive to the beach at Claromeco – a pretty little seaside resort town.

I was very impressed with the meteorological briefings, and how tasks were called each day. The briefings were conducted in Spanish with English translation. On at least one day, the task changed from the morning briefing to a revised task as the gliders were being launched and waiting for the start gate to open. Unfortunately for the



Dennis (right) assists as part of the Finnish team crew.

Finnish pilot, his radio wasn't working so he wasn't aware of the changed task and he completed the original one. One of the Dutch pilots had his batteries disconnect during turbulence and as a result he didn't have a record of his flight or navigational aids to return to the field. He had to do it all by memory, map and visuals ... exciting for him – but he did make it back!

I learned a lot about how the assigned and area competition tasks work and the strategies and decision-making required of the pilots on when to start and how to fly them given the met conditions. Another thing that I came to appreciate was the sportsmanship and camaraderie that I saw. I don't know how it will be when the Worlds are on, but everyone seemed to be quite willing to help their neighbour.

At the morning briefings, the previous day's winners were acknowledged and given a bottle of "35° South" wine, a corporate sponsor of the contest. Perhaps because it is so difficult to make soaring a spectator sport, large sums of advertising money haven't come in to date. I know that there are plans to make it more exciting for a TV audience, but it hasn't happened yet. In a way, I suppose, it keeps it more of a purist sport. I doubt that there was any doping going on, just a bit of evening "winning".

Of course, there were landouts – some days many. The greatest landout that I participated in was a little more than 100 kilometres away. Like on our prairies in Canada, many of the smaller farms have consolidated so there are a lot of empty abandoned farmhouses. Sometimes it was difficult to find the farmer who owned the land to get permission and to unlock the gates to access the retrieve site. On the whole, landowners were friendly and cooperative.

At the finish of the contest, a French team won the most points in the Standard class, an Argentinian won the 15m flying an ASW-20, and a Brazilian won the Open class in an ASW-22. The team that I was part of didn't finish high in the standings although there was at least one day when the Finnish pilot, Eric Heinonen, had the best time of the day. This was also the first time one of the Spanish pilots had been in international competition. Although he also didn't do very well, his learning curve was very steep and he shared a lot with me. It is usually not fun to be pushed beyond one's comfort level, but the learning that comes with that sort of intensity is significant. After the fact, one can look back and appreciate the experience.

For me, it was a wonderful experience. When I started gliding, I had thought that I didn't really care too much about the competitive aspects of the sport. However, I have made some very good friends now through participating, and although my skill level and experience is not very high, I sure had a lot of fun.

A couple of weeks ago, I got an e-mail from Marcelo asking me if I was thinking about coming for the Worlds in January 4–19. He is just putting together the team. I'm booking my holidays to be there!

an Omarama get-away

Simon Youens

ON 5 FEBRUARY LAST YEAR, it was quite a pleasant winter's day in Calgary with an overnight low of -9° and a high of $+13^{\circ}$, but not really soaring weather. However, I was on the bottom side of the world in New Zealand where it was mid-summer, driving down from Christchurch to the Mackenzie Basin and specifically to Omarama where I was going to spend five days on a Mountain Soaring Course (www.glideomarama.com/SoaringSchool/pvt-supervised).

I used to be a Cu Nim member but in 2006 I moved to Vietnam to take up a new job working for Talisman Energy on their Vietnam offshore acreage. A nice place to live, hot weather, an interesting job, but no private flying of any kind. So for the past three years, I've been saving up my flying money and spending it in New Zealand during my annual vacation. For the first two years, I flew lots of interesting powered aircraft at Classic Flyers in Tauranga, south-east of Auckland. This year I tacked on an extra week and went to Omarama.

This was my first time at a commercial gliding operation, *GlideOmarama*, run by Kevin Wills. It's a very good setup with modern, well-maintained equipment and an emphasis on safety. There were four students on the course. Each of us had our own instructor and a very-well equipped Duo Discus. This was the first, modern high-performance two-seater (44:1 glide ratio, 20m span) I had ever flown and by the end of the week, I was very comfortable in it. It is genuinely easy to fly. During an exchange of e-mails with Gerald Ince, a Duo owner at Cu Nim, he described flying the Duo and I couldn't put it better:

"... the Duo is a sweet handling ship – somewhat of a surprise to me given the 20m span. Very stable with no bad habits – it doesn't ever seem to bite you. Will mush along all day at 38 knots with the nose pointed at the sky – no tendency to stall or spin."

Every glider at Omarama is equipped with Flarm, SPOT tracking and an EDS electronic oxygen regulator for use below 20,000 feet. We never got close enough to another glider for me to see Flarm in action, but the SPOT system was very effective. The dispatcher keeps track of all the airborne gliders and if the signal disappears, he calls on the glider frequency to make sure that everything is okay. The EDS regulator is easy to use and because it uses a nasal cannula, oxygen is available on every flight, at a moment's notice. It has an audible warning signal if oxygen is not being delivered, which I effectively tested when I accidentally disconnected the cannula.

The Duo I was to fly is a recent model with larger spoilers and linked flaps. The airbrakes give great flexibility in the

circuit. I could easily fly a Blanik-type circuit. The flaps are only for landing. They deploy automatically, only at slow speeds in the last stages of airbrake extension, and they completely compensate for airbrake pitch changes and for loss of lift. The recommended landing procedure is full brakes at the appropriate moment and then forget about them. It felt quite unnatural to me.

I only flew the Duo from the front seat and while it is comfortable, it is quite tight and there is no storage space. My instructor, Phil Plane, had to stow my water bottle in the rear cockpit and hand it to me when needed.

The format for the course was a general met briefing at 9 am followed by lectures on soaring techniques and the area weather and discussion of the previous day's flights, using *SeeYou* to play back the flight recorder files. The instructors would comment on the flights and point out their decision processes and whether they were right or wrong, and the impact of the weather on the flights. The weather briefing is initially very confusing for a northern hemisphere pilot – looking at the isobars on the map and trying to remember that the winds go clockwise around the lows. There is plenty of time for lectures in the morning because convection doesn't start until after lunch.

Day 1 I arrived the previous afternoon and bumped into Mel Blackburn that evening and saw Trevor Florence at the briefing in the morning; both fly in Invermere. It was overcast when I got up, but the met briefing was optimistic. The morning lectures were on mountain flying safety. We got airborne in DD about 1400. I was pleased that I managed the takeoff and tow in a strange glider with no problems, particularly since I hadn't flown a glider for seven years.

It was still overcast and after release we lost 200 feet and I thought we would be landing, but Phil scratched up from 2200 feet (I was counting the barbs on the barbed wire fences on the ridge) to about 4000 and then we set off westwards in not very promising conditions – other gliders were calling in about possible landouts although things improved and everyone got away. We flew into some impossible looking valleys below the ridges, but Phil assured me that we were always within gliding range of an airstrip. I did about 70% of the flying with Phil taking over when we were circling in very rough lift low over some of the ridges.

We got close to Mt. Aspiring, about 50 km northwest of Omarama before turning around and flying home. I was feeling slightly queasy and tired, after such a long layoff. We finished with an 80 knot final glide from about 30 km



out (two ridges away) and a 120 kt competition finish. A 2:48 hour flight with good lift up to 7–10 knots, 228 km at 82 km/h – all mediocre by Omarama standards, but fantastic for me.

After landing, the ground crew took over the glider (one of the benefits of a commercial operation) and we went off to upload the flight details and go for a well deserved beer. Phil said it was a tough day with very broken thermals. We experienced sea-breeze convergence lift from both the west and east coasts – the South Island is only about 200 km wide at the latitude of Omarama. There were different cloud bases at different places at the same time and cloudy, cold air was pouring over the passes from the west.

Day 2 This was another great day for me with a twist at the end. The weather was slightly better than yesterday. I was becoming more comfortable in the Duo and flying more precisely and also, with Phil’s prompting, more aggressively. A frequent comment from the back as I zoomed up into lift was, “too late, you missed that one.”

We covered some of the same ground and ended up near Wanaka after about two hours at about 8700 feet (7300 agl at Omarama) and started an easy 60 km final glide. Then Phil suggested we turn north and have a look at some promising clouds and I agreed. This all went well for a while until we reached the last range before Lake Ohau where in Phil’s words, it became “very sinky”. After some valiant scratching by Phil on the face of the mountains, while I was counting the pebbles on the ski hill road, we landed at the Lake Ohau lodge airstrip, about 30 km north of Omarama and phoned for a towplane to retrieve us.

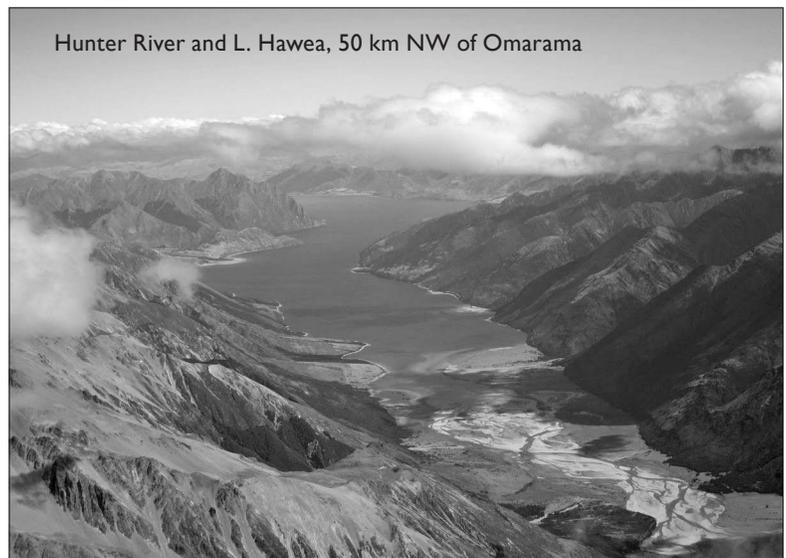
I knew Phil had been working hard because it was very silent in the back. Sometimes our horizontal and lateral clearance from the slope was less than 100 feet. The airstrip isn’t much more than tire tracks along a narrow field with a hump in the middle. While we were

scratching, three hang gliders landed and blocked the into-wind end of the strip. Phil banged the air-brakes open and closed several times to attract their attention, but they didn’t move, so we landed downwind on the other end of the strip, but luckily up hill. After we had stopped, the hang glider pilots asked, “Why did you land downwind?” and “What was that noise you were making?” On takeoff into wind, the towplane was still on the ground as we crested the hump, which is the first point where one can see if there is any traffic on the road that crosses the end of the strip. We towed up to a suitable height and then released and made a final glide home. We flew about 150 km in 3:30 hours.

Day 3 Another great day – out and return to near Mt. Cook (about 85 km north of Omarama). I was getting better at throwing the Duo Disc around and then trying to fly accurately in thermals. Part of the trick is to ignore the ASI and just fly attitude once the aircraft is trimmed for 45 kts (or 50 kts when rock polishing). This is complicated by the lack of a proper horizon when down below the ridges. The pitot is on the fin and is severely affected by turbulence when circling.

The teaching at Omarama is to never circle at less than a 45° angle of bank. Our first launch was unsuccessful and we had to land after scratching over the ridges south of the airfield. The relight was successful and we got away, using thermals associated with convergence zones on the ridges. We flew below the ridge tops, up the Jollie River valley, just to the east of the Tasman River valley, with Mt. Cook on the far side. Two other Omarama Duos were in the same valley, but we never spotted them, although there was lots of chat between the instructors, particularly the ones that were down low and desperate.

We couldn’t go over the ridge from the Jollie valley into the Tasman valley and closer to Mt. Cook because moist, cold air from the west was spilling over the divide in an avalanche of cloud and killing the lift. After turning and flying south to the end of the Jollie valley, we made an 80 km final glide home, over the spectacular blue-green





Mt. Cook summit

waters of Lake Pukaki, starting at 80 kts and finishing at 120 kts. It was a 2:50 hour flight of just under 200 km.

Day 4 When I signed up for the course, I felt I would be happy if I got three flying days out of five, so Thursday was a bonus. Again it was another completely different weather day. The forecast was not good – southerly flow, low cloud and showers. However things turned out much better and there was no rain, not too much cloud, and wave! We were launched about noon and tried to climb in rough thermals to the southwest but got shot down. We launched again and spent about 2-1/2 hours thermalling in very rough rotor/thermals until we connected with the wave.

The local topography causes very confused non-linear wave clouds and on this day, the lower level clouds were mostly altocumulus with very little lenticular appearance. The lift zone for one of the lower-level wave bars was not straight, but had a very pronounced curve. Once we got higher, we tracked northeast at speed and then moved downwind and came back in the next wave. Our maximum altitude was 11,500. After a mid-air conference between the instructors, all the gliders in the wave came down quite quickly, because the air was very moist and there was concern that the wave windows might close. They didn't and conditions subsequently improved and we probably could have stayed up for another four hours. However, I had had four great days and I felt it couldn't possibly be any better.

Day 5 It did get better. It was the best day of the week, although it didn't look like it at the morning briefing. The forecast called for reasonable thermals and not much chance of wave. We took off and released in turbulent thermals and gradually climbed westwards until, after 1-1/2 hours, we climbed up the front of a cloud into laminar flow. So much for the forecast. The clouds were very disorganized and there were no recognizable wave bars, but the alto-cu wave clouds were often marked by "fish hook" shapes on the downwind sides.

We climbed progressively higher as we moved northwards. About 60 km north of Omarama in the Hopkins valley, we got to about 12,000 feet and Phil felt comfortable in penetrating another 40 km northeastwards to reach Mt. Cook.

There is so much helicopter and fixed-wing sightseeing traffic in the Mt. Cook area that there is a Mandatory Broadcast Zone with the evocative call sign of "Alps Traffic". On the way towards the peak, we crossed the divide of the Southern Alps, which is normally not done at lower levels, since there is nowhere to land on the western side, until you reach the beach, 35 km away! We crossed Mt. Cook at 14,000 feet (1700 above the summit), looking down on the Tasman Glacier and Lake Tasman complete with icebergs. Wearing my geologist's hat, I could see very clear evidence of significant recession of the glaciers, just as in the Rockies. Our highest altitude was 14,800 feet.

We started our final glide from the summit, 100 km from home. We flew downwind at 95 knots (rough air speed), using the airbrakes when required to descend below stepped cloud bases on the way. At one point, I was flying hands-off at 95 knots in very smooth conditions when a small gust pitched us up slightly. DD then settled into a low-amplitude phugoid, which I then stabilized. Phil told me that if I had left it, the phugoid would have increased in amplitude. He said the Duo is dynamically unstable, which surprised me.

We arrived at Omarama at about 7000 (5600 agl), having achieved a 42 to 1 final glide. A 25–30 knot low level wind had sprung up from the east while we were flying. This commonly occurs at Omarama as Pacific sea breezes penetrate up the valleys in the late afternoons and undercut the higher westerly flow. So to complete the day, we made a rapid airbrake descent onto a 500 foot ridge just north of the airfield and beat backwards and forwards for a while. The lift was so strong that even at 90 knots, we couldn't stay below the top of the ridge.

Conclusions All in all, a fantastic week. I had 17 hours of extremely interesting, often hard, but very educational flying with a very experienced instructor. The mountain scenery is stunning and studded with spectacular lakes and river valleys. One really important lesson I learned during the week was the importance of local knowledge in decision-making when flying in the Southern Alps (or any hostile mountain environment). We were often flying in completely unlandable valleys, below the ridge tops and within a wingspan or two of the rock face. However, because of the high performance of the Duo, we always had an escape route down the valley to one of the many bush and agricultural strips in the area. However, Phil carefully pointed out to me the Timaru valley as we flew along a ridge at the head of the valley. He told me it is absolutely unlandable and if you got down low, the escape route would probably end up with a ditching in Lake Hawea.

The lectures and flight debriefings were interesting and informative. Omarama is a very professional and friendly operation. The course was not cheap, but I can thoroughly recommend flying at Omarama, even if for only one day, for anyone who can make it to New Zealand.

However, don't just show up or you will probably get a ride in a Grob. Book ahead, tell them you're a glider pilot and fly a Duo-Discus. I'll certainly be returning. ❖

Just a little faster, please

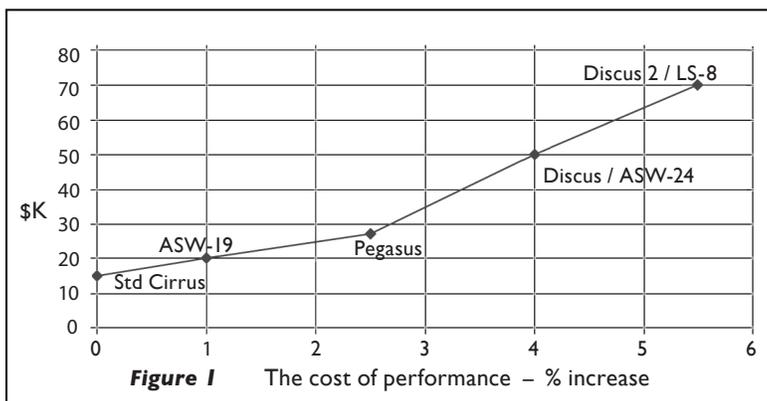
John Cochrane

THERE COMES A TIME when you want to fly a little bit faster. Maybe you've been to a contest or two and you've seen what amazing speeds the top pilots achieve – often in surprisingly bad conditions. Maybe you want to go for a badge, or just cover a little more territory in your cross-country flying. We are glued to this sport by obsessive self-improvement, and a little more speed soon becomes the focus of that obsession.

A better pilot or a better glider?

Many pilots think that the key to going faster is to spend a lot of money on new gliders. They don't go to contests because "I won't be competitive in this old thing." In fact, small differences in pilot technique outweigh huge differences in expensive fibreglass. You usually see new gliders at the top of the scoresheet only because great pilots tend to put the money and effort into flying the latest gliders. The top pilots would still win if they had to fly 20 year-old gliders.

To see what a little thinking and practising can do, let's set a goal of eliminating three circles per hour. This doesn't seem like much, maybe one circle every other thermal. How many of us do not, three times per hour, take a circle that gains nothing; maybe searching for a thermal that isn't there, indecisive about leaving, or centering poorly? That seems like an achievable goal for a season's practice.



Each circle takes about 25 seconds; 3 times 25 seconds divided by an hour is 2 percent – 20 points in a contest. In Figure 1, I plot performance against cost, using the USA handicap values. *Cutting three circles over an hour is worth about \$20,000!* It's like moving up one generation in gliders, for free. Given the choice, wouldn't it be a lot more fun to be a better pilot in a worse glider than to be a poor pilot in an expensive glider?

Speed and modern MacCready theory

Now, how to go faster? I have spent a lot of time watching fast pilots, listening to them, reading articles by and about them, and trying to understand what they do and what they say they do – not always the same thing. Techniques have changed since the classic writings by Moffat, Reichmann, and Byars & Holbrook. I will point out some of the innovations that I see. I have also updated the classic MacCready theory to take account of the fact that thermals are random and height is limited. This mathematical theory seems to accord well with what fast pilots actually do.

The MacCready value is still the key to in-flight decisions. It's easiest to think about it as, "what is the weakest thermal I would stop for right now?" It is a good discipline to think about this out loud, and set a conscious policy. Don't stop for less, and leave the minute your averager is less than this value. This value also determines the cruising speed. There is a lot of talk about "flying slower than MacCready", which we will consider here in detail, but it is a mathematical fact that if you will not stop for thermals under 4 knots, you should cruise at a MacCready setting of 4.

More generally, the MacCready value answers the question "how much higher would I have to be in order to finish one minute sooner?" Our game is trading altitude for time, and the MacCready value is the price of time in terms of altitude. My rules above derive from this concept. If it takes 5 feet of height to finish a second sooner (or 300 to finish a minute sooner), then you take any thermal greater than 3 knots, and you spend altitude at the same rate.

That's all fine, given the theoretical MacCready value, but what is the *right* MacCready value to use? What is the relative price of altitude and time at any moment in the flight? How aggressive *should* you be? Now we leave the land of mathematical certainty. This is what that long experience in watching weather and learning what thermals lie ahead tells the experts. But we can work out the answers in some simple if stylized situations, and these parables are useful ways to organize our thinking about the right MacCready value to use for a real flight.

MacCready If you know the strength of the next thermal, and that you can get to it, then this is the MacCready value for the glide to that thermal. If you know that the next thermal will be 4 knots, then you set the speed ring to 4, and fly the appropriate speed-to-fly.

Reichmann Reichmann refined this calculation. Thermals are often weaker at the top and bottom than in the middle. Reichmann showed that you should use the weaker “initial” thermal strength as the MacCready value for the preceding glide. If you fly a bit faster, you will have to make up your altitude in that weaker lift, not in the booming lift near the top of the thermal.

You should always take any thermal greater than the current MacCready value, and Reichmann applied this idea to the last thermal: *stay in the last thermal until it weakens so much that it equals the initial climb of the next thermal*. Thus, Reichmann’s rule: Initial climb in the next thermal = MacCready setting = final climb in the last thermal.

Random lift and finite altitude

These calculations are obviously simplified. Most important, *we really don’t know where the next thermal will be and how strong it will be*. We want to know the right MacCready setting to use, given the chance of finding thermals of various strength and given the altitude in hand to search for them.

Figure 2 presents an answer to this question when flying a Discus on a good day in northern Europe or the eastern USA. I specify that thermals rise 6000 feet. I specify the probability of finding a thermal as shown in Table 1. For example, if you travel 2 km, you have a 20% chance of finding a 1 knot thermal, a 10% chance of finding a 2 knot thermal, and so on. In 10 km, there is a 90% chance of finding a 1 knot or better thermal, as 61% chance of finding a 2 knot or better thermal, and so on. There are enough weak thermals that you are pretty sure of staying up. There are a few really good thermals, but you’d better not go barrelling around the sky counting on them. Still, you want to adjust your strategy so

that if you find one, you can take advantage of it. I solve the dynamic program for maximizing average speed, valuing landouts as they are in competitions. Several rules arise from Figure 2.

- 1 *Steadily reduce the MacCready setting as you get lower – fly more slowly and take weaker thermals.*

The optimal MacCready value rises from less than 1 knot at 600 feet to 4 knots at 6000 feet. The reason is simple: range. If you stop for nothing less than 4 knots at 1000 feet you are soon going to meet a nice farmer. We knew this of course. Even early explanations of the MacCready theory added advice such as, “take anything to stay up when you’re low.” But, if you should “take anything when you’re low”, there must be a middle range where you should “take mediocre thermals”, and that is the advice contained in Figure 2.

- 2 *Leave weak thermals to find better lift as you get higher.*

Many books warn that after a low save, it’s important to recharge your psychology and not work your 2 knot thermal all the way to cloudbase. Figure 2 refines this idea. You might get low and find a 3 knot thermal. You take it. Around 3000 feet, though, you should start getting impatient, leave and try to find something better. You might not, and have to take another 2 or 3 knot thermal, but at 3000 feet, you are more likely to find something better than you are likely to have to accept something worse. When you do find that something better, you’ll have the altitude to use it. Cloudbase is the *worst* place you can be though, if you run into a 10 knot thermal there you can’t take it anywhere!

Conversely, Figure 2 means that if you find a lucky, strong thermal, you should stay in it even as it weakens. A pilot who finds a 6 knot thermal should be grateful for the gift. If it cools off to 4 knots, he should still stay in the thermal up to 6000 feet. Don’t leave until the thermal you are in is weaker than the next thermal you are likely to find, and the ring setting you are willing to cruise at to get there.

Many pilots and books describe flying in a “height band” for the day. Together, the last two points above dynamically define such a band. If you get less choosy as you get lower, you are more likely to climb. If you get more choosy as you get higher, you are likely not to do so.

- 3 *Ring settings are substantially lower than best climbs.*

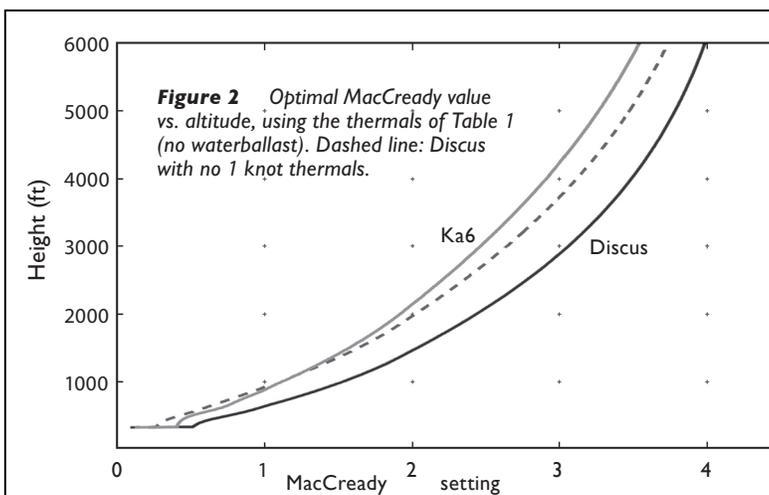
In my calculation, the best thermals of the day are 6 knots. Yet the optimal MacCready setting never goes over 4, and will be more like 3 through the typical flight range. The basic principle behind the calculations in Figure 2 is this:

- 4 *The MacCready value now should be the same as you expect it to be farther ahead.*

If you know you are going to be desperate up ahead, you should start conserving altitude now. Suppose that you are at 3000 feet. Looking ahead 10 km, you think there is half a chance you will find a 4 knot thermal. However, there is half a chance that you will not find any thermal, get low, and be quite happy to take 2 knots. Your MacCready value now should be 3 knots. This is a good principle to use in thinking about what MacCready value to

Thermal strength (kt)	2 km point	cumulative probability (%)		
		2 km	10 km	20 km
1	20	37	90	99
2	10	17	61	84
4	5	7	30	52
6	2	2	10	18

Table 1 Thermal assumptions. “2 km point” gives the probability of finding each thermal in the first 2 km. “Cumulative” gives the chance of finding a thermal this strong or stronger in the indicated number of km.



set. I used this principle to ask my computer to work back from the finish to find the right MacCready values for any combination of altitude and distance to go.

5 Weather, pilots and gliders

The curve in Figure 2 moves around according to the weather, the glider, and the pilot. Obviously, the curve shifts to the left in weak weather and to the right in strong weather. Some less obvious factors are:

- The shape of the curve depends on how good thermals are at lower altitudes. If thermals are weaker lower down, you become more conservative sooner, and accept weaker lift to stay in the good band. Thermals tend to be weaker down low in wind, in mountains, at the end of the day, when there is a wind shift with altitude, and when a strong circulation layer develops as with cloud-streets or with strong capping inversions.
- The shape of the curve also depends on how frequent thermals are, especially at low altitudes. If the "Discus" curve seems aggressive to you, it is because I have programmed in a quite high chance of staying up, by assuming a 20% chance of finding a 1 knot thermal every 2 km. This opportunity to save the flight and keep going encourages what would otherwise be pretty aggressive low altitude behaviour. If we keep the 2, 4, and 6 knot thermals of Table 1 but eliminate these 1 knot saviour thermals, the curve shifts to the less aggressive dashed curve shown in Figure 2. This may explain why pilots in the UK advocate pressing on at what seems like very low altitudes because they expect to see weaker thermals, while pilots in the western USA get panicked at 10,000 feet. In the western USA, you either climb at 10 knots or you don't climb at all. Ridges on which to "save" a flight at low altitude can also allow aggressive flying.
- A lower performance glider must fly more conservatively. The calculation for a Ka6 gives MacCready settings about 1 knot lower than the Discus. The Ka6 pilot must stop to take weaker thermals to bridge the gaps between longer thermals, and he must cruise at lower MacCready. Classic MacCready calculations, which assume that everyone will be able to get to the same thermals, understate the advantages of higher performing gliders.
- A less skilled pilot needs to fly more conservatively, shifting the curve to the left. If you are less skilled than the top pilot is, you will increase your points by following a more conservative strategy than he follows. Top pilots will find a thermal that you and I will miss. We need to give ourselves a little more room. Following top pilots leads to starting too late, watching them disappear over the horizon, and then struggling home.
- The curve depends on how you feel about landing out. If you want to minimize the probability of landing out, you set the MacCready to zero. This is *really* slow. To fly any faster, you must accept some larger probability of landing out. In Figure 2, I valued landouts according to the distance points in contest rules. If you're flying in a contest that gives more distance credit, fly more aggressively. If your philosophy is "win or land out" rather than "maximize expected number of points", then fly more

aggressively. If your dislike of landing out goes beyond contest points, fly more cautiously, especially when low.

Centering time

On most flights, it will take at least a couple of turns to centre the thermal. A good pilot can start climbing at the thermal's maximum rate in four turns, about two minutes. The rest of us flog around longer than that. Table 2 shows what two minutes of centering time with no net gain does to the achieved climb rate.

Height Gain (ft)	Thermal strength (knots)				
	1	2	4	6	10
750	0.80	1.31	1.94	2.32	2.73
1500	0.89	1.59	2.63	3.35	4.30
3000	0.95	1.78	3.18	4.32	6.04
6000	0.98	1.89	3.56	5.04	7.56

As you see, two minutes of centering time has a dramatic effect. The effect is larger for stronger thermals, and for smaller height gains. Managing this centering time is the next crucial piece of flying strategy. For many thermals, the decision to stop doesn't depend so much on how strong you think the thermal is, as how easy it will be to center. If you feel the right kind of surges and can roll right into a 4 knot thermal for 1500 feet, that is better than having to take time to center a 6 knot thermal (and achieving a 3.35 knot climb) for the same height gain.

Many modern flight computers include an average climb for the whole thermal – from the minute you switch in to climb mode or start circling. These "reality meters" are wonderful checks on your enthusiasm. When I bought a flight computer with this feature, I was amazed that what I thought of as a "6 knot day" was often really a 3 knot day. I felt a lot better about my seemingly wimpy inter-thermal speeds.

Centering time affects classic rules such as Reichmann's, which presume you know what the next thermal will be like and where it will be. The lower of average climb and initial climb (after centering) determines the MacCready setting. The "initial climb" rule considers how much lower you will arrive at the next thermal if you fly a little faster. The "average climb" rule considers how many more thermals you will have to center if you fly a little faster. The price of altitude is the lower of the two climb rates.

Many pilots follow rules such as "don't stop unless you can gain at least a 1000 feet." Like any rule, this one is meant to be broken, but it contains a grain of truth. It's worth stopping at *any* altitude if the thermal is strong enough, and especially if it feels smooth so that you will not have to center it. In stopping in any thermal, you must amortize the centering investment in a decently long climb.

Misconceptions

"Fly the MacCready speed" does not mean we chase the vario needle around. Lags in the instrument and the pilot means that most pilots fly relatively constant speeds,

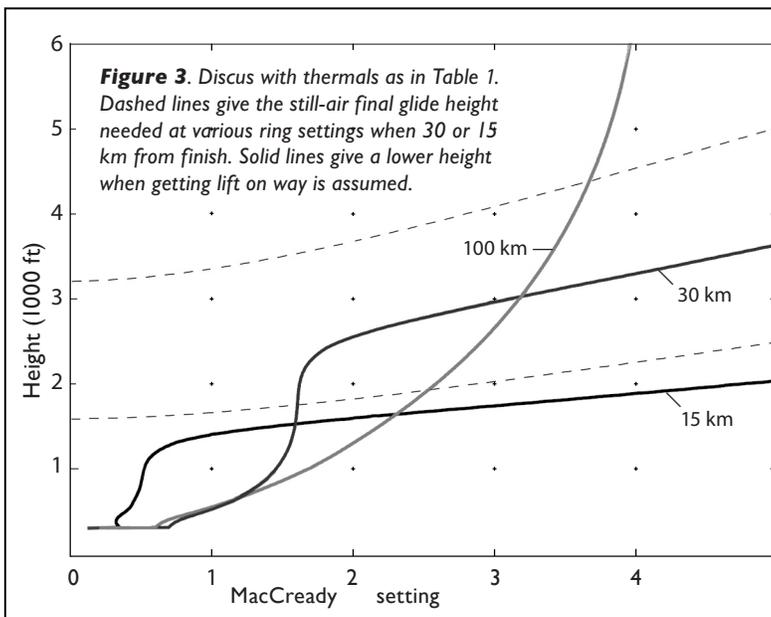
unless long stretches of lift or sink ahead are clear. You choose that relatively constant speed based on the MacCready value.

Pilots often criticize MacCready theory, noticing that the exact speed you fly isn't that crucial. 10 km/h one way or the other will not make a great deal of difference; however, 20 km/h will. More importantly, while gliding a few km/h too fast or slow won't make a lot of difference, choosing thermals 2 knots too low or insisting on thermals 2 knots too strong will make a huge difference to your speed. *Deciding when to stop and when to leave thermals, thereby achieving the best average climb rate, are the most important determinants of cross-country speed.* This decision is as much a part of "MacCready theory" as is the decision of what speed to fly – the MacCready values in Figure 2 apply equally to each decision.

It is a common misconception that you should use MacCready settings that are systematically lower than the worst thermal you would take, in order to get more range. It is a mathematical fact that if you are cruising at a MacCready 2, you will always do better stopping for a smooth, easily-centered, 4 knot average thermal, at least for a short climb until you can cruise faster. However, the misconception contains a grain of truth. When you add up the effects of low initial climb rates, centering times, and the fact that the average thermal you will climb in is stronger than the weakest thermal you would take, the correct MacCready value is a lot less than the peak average reading in the best thermal of the day that you brag about in the bar after the flight. So, yes, pilots now use MacCready settings much lower than they used to. It doesn't mean "MacCready theory is dead", it means "use the right climb rate."

Course deviations

The MacCready value governs other decisions as well, including course deviations. It is surprising how far off course you should go. For example, by going 30° off course, you have to fly 13% further. If you average 100 km/h, going 30° off course for 5 km costs you 23 seconds.



At a setting of 2, this is worth it if you gain more than 75 feet. Just about any cloud or haze dome will net you that much. (You don't have to *gain* 75 feet, you just have to gain it over the pilot who flies straight.) If constantly zig-zagging 30° off course from cloud to cloud nets you 150 feet, this will give you a much better average speed than going straight. As an extreme, going 1 km perpendicular to the courseline will cost 36 seconds. It's worth it at MacCready 2 if it nets you 120 feet.

If the MacCready value is low, it's worth trading a lot of time for a little altitude by making larger course deviations. If the MacCready value is high, time is precious so you should drive straight ahead. Of course in stronger lift you will gain more by flying through thermals, so the two effects can cancel. At Uvalde – where lift is strong, close together, and well-marked – pilots often take as much as 45° course deviations to hop from cloud to cloud with little circling. Conversely, since higher performance gliders use higher MacCready settings in the same weather, now we understand why ballasted and Open class gliders fly straighter courses.

Final glides

The standard final glide calculation assumes equal lift and sink. How should you approach a final glide given that thermals are random and you might land out? There are two schools of thought on this.

First, there is the "start the glide early and low" school. This advises you to start thinking about the final glide when, at your current height, you see that MacCready 0 will get you home. This is because you can often do better than the still air glide by course deviations and porpoising in thermals. Starting a final glide low also keeps alive the option of stopping in a superb thermal if one comes along. How many of us have struggled to make "final glide" in a 3 knot thermal, only to blunder in to a now useless 6 knotter while bashing home!?

Second, there is the "make sure you don't blow the contest by landing out" school. If there is lift there is also sink. How often have we set up a comfortable 30:1 + 500 foot final glide, only to have it all evaporate and either end up struggling low, or landing on the way home? Being a little more conservative than the standard calculation, say climbing in a 3 knot thermal to a MacCready 4 glide, might cost a minute or so, but it buys valuable insurance against this kind of disaster.

Who is right? To get a handle on this question, I went back to the computer, and Figure 3 gives its answer. The dashed lines give the optimal MacCready settings for each altitude. The solid lines represent the MacCready settings recommended by the program for 15, 30, and 100 kilometres to finish the task. The 100 km-out line is the same line shown in Figure 2. At both 30 km and 15 km, the right hand sides of these curves are remarkably more aggressive than their corresponding dashed lines. If you read horizontally from a given altitude, they call for a much higher MacCready setting than the one that will take you home through still air – fly faster, and be more choosy about what lift to stop in. Why? Well, you're not flying home through still air! At 30 km out, you are virtually

sure to find some lift to use on final glide. If not, you still have the option to slow down, which you will do as you get lower. The 15 km-out line is only about 160 feet below the still air calculation because this strategy is starting to be chancier, and the probability of not finding anything at all is getting higher. It is time to use the still air calculation that gets you home slower, but with greater certainty.

The 30 km-out line is about 1000 feet below the corresponding dashed line at any MacCready setting over 2 – it advises you to fly about 1000 feet below final glide. There is lift that you can use to porpoise in. If you don't find lift, you can still glide at a lower setting, and, by the assumptions of Table 1, you are nearly certain to find a weak thermal to save the flight. This line verifies the advice of the low-and-fast school.

The 15 km-out line is much more conservative as the program calculates the slight advantage of a bit more speed for a short time against the small probability of a disastrous landout, and advises a cautious final glide. In sum, this calculation balances the two schools of thought: *start final glides aggressively, but finish them conservatively.*

The 100 kilometres-to-go curve by contrast rises steadily. Why? This far out, there is virtually no chance that you can get home without thermaling. So, at any altitude, the MacCready setting is determined by the kinds of thermals you are likely to find ahead. The curve slopes up because the higher you are the more likely it is you can find a really good thermal before having to climb. Equivalently, as you get lower, you need to slow down and take a weaker stepping stone thermal to avoid landing out. If you're only 15 kilometres out at 1800 feet you can be much more aggressive because the chance of hitting the ground before finishing is low.

Now, compare the 15 and 30 km lines with the 100 km line, and let's make sense of the interesting bow shape. At about 2300 feet, 30 km out, there is a transition from "it's pretty likely you can keep going and bump up to final glide" to "you need another thermal to climb in, or else you're going to land out". If you have to stop to thermal, you don't have much room to look for one. Just a few feet makes all the difference on a final glide between screaming home at 100 knots and scratching desperately at 500 feet agl, looking for a one knotter or a place to land!

In these situations, the out-on-course MacCready setting would not get you home, but the slightly lower MacCready settings will practically guarantee a glide home if you do not find a thermal along the way. The program trades off the small loss in points from flying slowly for a few kilometres against the score sheet disaster of landing out if you do not find a thermal up ahead.

These calculations are far from the last word, but the curious way they come out make clear the trade-offs you have to think about. On final glide, you balance large chances of a small speed increase against small chances of a costly landout. Managing this tension correctly wins contests. Final glide strategies are a particularly fertile area for quantitative analysis. As with safety issues, which trade similarly small probabilities, it is hard to learn this balance from personal experience since the disasters are infrequent.

Weather is especially important on final glides. Even the most aggressive pilots take high final glides when needing to go through rain on the way home! The chance of sink is just as important as the chance of lift. You fly more conservatively if the weather is uncertain. (I learned this sharp lesson from a friend when she beat me home on a MacCready 0.5 final glide. "No lift means no sink," she said, and she was right.) Porpoising may be harder down low than when up high, and the presence of weak thermals with which to save the flight are crucial for the low and early strategy.

Finally, like all final glide calculations, this one assumes there are plenty of fields in which to make a safe, last minute landing should a final glide go wrong. One must be much more conservative if this is not the case, as is often true flying in the USA. An off-field landing from a final glide is made from very low altitude, without a deviation to look at the fields or a chance to plan the pattern well. Contests are full of serious crashes from landouts a few km from the airport, or from arriving too slowly at the home field. "I just made it over the fence" is not funny!

Upwind and downwind

We all know we should take upwind turnpoints low and downwind turnpoints high. How low, and how high? Again, MacCready values determine the answer. As you approach an upwind turnpoint, the whole curve of Figure 2 shifts to the right, and as you approach a downwind turnpoint it all shifts to the left. As a result, your height band naturally goes down near an upwind turnpoint – unless you happen to find a 10 knot thermal! See "*Upwind and downwind*" on my webpage below for details.

What's next?

When you learned to follow the towplane, you and your instructor analyzed the task. Then you flew to learn to do in the air things you understood on the ground. By the time you got your licence, following the towplane became automatic, and you probably would have trouble explaining how to do it to a beginner.

Cross-country flying works the same way. You start with the basics, thermaling and navigation. This article is about the intermediate stage, getting up to speed on course. You have to think about and analyze these decisions on the ground, and then use your flying time to learn to make them in the air, and then to make them subconsciously. We fly to learn to make in the air decisions that we understand on the ground. This is not easy and requires dedicated practice – I write articles on theory, yet from lack of practice I still end each flight with a list of silly decisions to mull over.

Great pilots have made this all automatic. They often have trouble describing what they do as you might have trouble describing how to follow the towplane. They fly thinking about weather, psychology, and contest tactics. Our job is to get to that stage! ❖

John Cochrane has written extensively on competition, X-C, and safety. His work can be found on <<http://faculty.chicagobooth.edu/john.cochrane/soaring/index.htm>>.

Bailout!

Mirth Rosser

This accident took place 30 years ago at the Winnipeg club. It's an extraordinary account of the obstruction of controls and the wonder of parachutes.

THESE TWO SUBJECTS are not foreign to any of us, yet some of us may not always take them as seriously as we should. The first, of course, can kill you, and the second can save your life. Only an unprepared pilot ignores these very real possibilities. Under a particular set of circumstances only a very lucky unprepared pilot survives. This has been my experience.

On 12 September I was flying our newly-acquired HP-14 for the sixth time and had spent a few minutes in one gentle thermal, but was unhappy with my speed control which kept varying between 35 and 45 knots. Not having had much experience in high performance sailplanes with such large wing spans, I didn't like the rollercoastery feeling and flew away to do straight and level until I felt comfortable again. Shortly, at about 2400 feet above ground, I encountered some reasonable lift and started circling right again. After a couple of 360 degrees my speed dropped and I carried out the normal 'pre-incipient spin' actions that I had found to be effective and safe in that sailplane; opposite rudder and slight stick forward. Immediately, I found myself in a dive as the HP recovered from what was probably an incipient spin and began to fly. But pulling fully back on the stick had no effect on the dive and WZT continued to accelerate.

My thoughts during the next several seconds consisted only of possible maneuvers that I should attempt in order to control the situation, but the situation did not seem to be one which I was familiar with. My feelings were a combination of absolute terror and disbelief. I was astonished that what I had believed was a gentle aircraft could be doing something so uncontrollable and so violent. At no time did I consider the possibility of mechanical failure or that the controls were jammed. Being a low-time pilot, I assumed that it was my error.

There had been a plastic handgrip fitted over the stick, and at one desperate point when I released backward pressure on the stick (from sheer lack of any other ideas), this grip slipped off in my right hand. Weirdly, this was like a light flash: the aircraft was damaged and I could not fly out of the dive.

By now I knew I was very low, certainly under a thousand feet and flying very fast and I suddenly decided to get out, although I didn't expect to survive a jump either. From that point on everything was rapid and methodical: push two pins forward to release the canopy (which flew off with a big bang!), unlock my harness (gravity did the rest – although I was not aware of it I was on the down side of an outside loop, almost upside-down), and pull the D-ring of my new parachute. Unexpectedly, the ring was not on the inside of

the left strap, where it had been on the old chute, and I actually had to spend a few seconds in free fall looking for it. In the meantime, I heard WZT crash – *WHACK!* – as it landed upside-down in the river. In the time it took to pull the D-ring, feel the parachute open immediately and "lift" me up, orienting me vertically, I looked down for the first time since I'd left the sailplane and saw I was over water. In the next moment I was several feet under water in the middle of an oxbow of the Assiniboine River, fighting up to the surface away from the chute. Estimates of my safety margin before hitting range up to one second – and that includes the ten foot bonus from ground down to the water level. My amazement at being down and alive was total.

I began to swim forward to shore away from my parachute canopy which looked indescribably beautiful floating on the water. Since I had no idea how long the lines were, I swam until I could feel and see tension on them. I was still some distance from the nearest shore and decided to try to get the harness off. At this point I noticed one of the HP's canopy locking pins embedded in the palm of my right hand with the remaining eight inches curled around and pointing up my forearm. It must have been pushed in by the force of the canopy flying off. I could not pull it out, and a few shroud lines were caught around it. This was a point of near panic, and I had to force myself to be calm, treading water slowly as I assessed my situation.

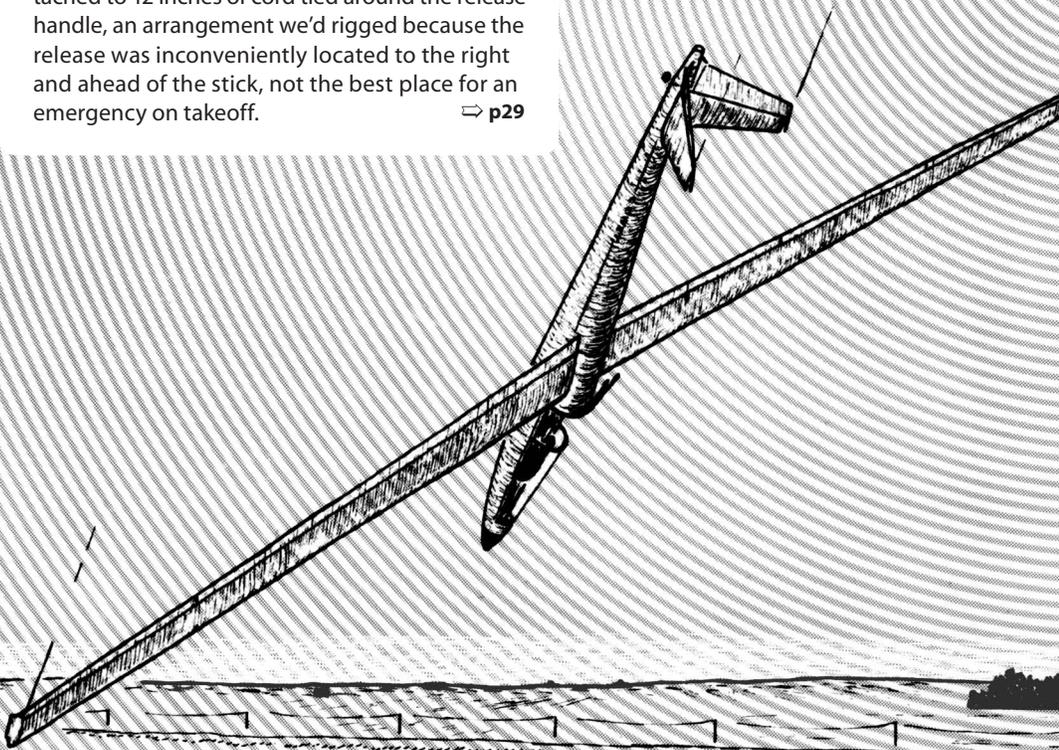
Since I was unable to undo the two leg snaps and unfasten the chest-strap buckle without the function of both hands, I decided I must pace myself by pulling the parachute canopy toward me with my left hand in order to provide some slack, then swim till I had taken it up, stop swimming and repeat the cycle. Although it might be slower, I reasoned that it would use less energy than swimming with the shrouds taut all the way. With about 4 or 5 of these cycles I reached an overhanging branch and pulled myself to the water's edge. All that remained were to pull in the canopy, get the container off and unravel the cords which were tangled around my wrist and the canopy pin. Then I climbed through the brush up the river bank, emerging in a swathed grain field near some Hutterite buildings.

A few seconds later a truck carrying several men started to head for me across the field – it was Len Nylund with some of the Hutterites. Len had seen the HP go into the oxbow upside-down, radioed the field (no one heard him), then landed his 2-33 as closely as possible to the

glider and spent 10 or 15 minutes diving for the pilot he believed was still in it (WZT flattening its arc once I'd left it, travelled a further 400 feet horizontally from me before impacting, and I was at treetop level when my chute opened). I don't know which of us was happier to see the other. The subsequent discomforts of having the pin removed from my hand, and spending a night in the hospital receiving intravenous antibiotics, hardly mattered.

Many of us spent the next two days agonizing over what might have gone wrong. I was most afraid of pilot error. Could I have completely mistaken what was happening and failed to take appropriate action?

During all the soul-searching I managed to think of at least four objects that had been in the cockpit not fastened down: the iron ballast on the seat underneath me; the "Ethafoam" slab I sat on, which if it had shifted forward an inch during flight, would have interfered with full back stick control; the bungee used to hold the flap handle in place during takeoff and tow; and a plastic handle attached to 12 inches of cord tied around the release handle, an arrangement we'd rigged because the release was inconveniently located to the right and ahead of the stick, not the best place for an emergency on takeoff. ⇨ p29



in praise of old gliders



Jan Scott

a history of the
Vintage Sailplane Association

This article was originally published in "Bungee Cord" on VSA's 25th anniversary in the summer of 1999 and updated in 2012.

SEPTEMBER 1973. On the 40th anniversary date of Richard du Pont's record soaring flight from Waynesboro VA, to Frederick MD, Gene Wilburn of the Mid-Atlantic Soaring Association arranged a glider meet at a small private airport named Tiffany Field at the foot of the Afton Mountain between Charlottesville and Waynesboro VA, just a couple of miles from du Pont's original launching point.

The object of the meet was for participants to duplicate du Pont's record flight. About ten gliders participated, mostly contemporary types like the Ka6, 1-23, and such. I had purchased and restored a *Göppingen 1 Wolf* a few years earlier and thought it might add a nice touch to the 40th anniversary event to bring a glider designed about the same time of du Pont's flight. The glider itself was only thirty years old at the time, having been built in the USA during WWII as a war production worker's training project. I had flown it for some time and had gradually become concerned with its poor handling and weak structural design. Attempts to sell it had been unsuccessful. Glass ships had just come on the market and the dollar was strong, so buyers for old gliders were hard to find.

Liam English, then Director of the National Soaring Museum (NSM) in Elmira, attended the meet. I saw a possible way to get rid of the *Wolf*, and asked Liam if I might donate it to the museum. He said, no thanks, as he had a long list of people who wanted to donate old gliders and the museum had no room for them. While we talked, an idea came to me.

"Do you have the names and addresses of these people?"

"Yes, and a list of their gliders too!"

"Would you be interested in inviting them all to a regatta for vintage gliders at Harris Hill?"

"Yes absolutely, that might be beneficial to the museum.

But with only five to ten gliders expected to attend, will it be enough for a regatta?"

"Maybe not, but what if we invite a local antique car club to have their rally on Harris Hill at the same time? That would make it more interesting, wouldn't it?"

"Great idea," said Liam, "I'll go to work on it."

The next summer, Liam sent out the invitation for the first US regatta for vintage gliders to be held on 24-25 August 1974. The gliders had to be more than 25 years old in order to participate. Seven pilots responded to the call and showed up with their gliders: Bob Eckard (a flat-topped *LK-10*), Peter Masak (*Mü-13D*), Stan Schuyler (*LK-10*), Jan Scott (*Wolf*), Tom Smith (*Gull*), Geoff Steele (*1-20*), and Ray Young (a *1-19*). The lineup was complemented with two gliders from the museum's collection, a *Dagling* primary and a *Minimoa*. The old cars and gliders combination was very successful, similar aged vintage cars and gliders were paired up for photos and all had a good time. *Where are those original gliders now, in 2013? – see below.*

At the briefing on Sunday morning the decision was made to organize a club for owners of old gliders. Thus was born the Vintage Sailplane Association on 25 August 1974. The annual dues were set to \$5 and it was decided to make the meet at Harris Hill a yearly event. The following year saw the annual meet moved to the weekend of 16-18 May to coincide with the NSM trustees meeting. At that time the first newsletter, *Bungee Cord*, was published. Entertaining and well written, its appearance resulted in a rapid influx of new members.

At the annual membership meeting it was pointed out that bylaws were needed and also a definition of what constituted a vintage glider. As is usually done, a set of bylaws were copied from those of an already established

- *Bob Eckard's LK-10: whereabouts unknown.*
- *Peter Masak's Mü-13D: now owned by Leland Cowie.*
- *Stan Schuyler's LK-10: modified to the TG-4A configuration, and owned by Commemorative Air Force.*
- *Jan Scott's Wolf: on display at the Wasserkuppe Museum in Germany*
- *Tom Smith's Gull: on display at the NSM, after restoration by members of the Wabash Valley Soaring Association.*
- *Geoff Steele's 1-20: rebuilt by Guy Ford Byars.*
- *Ray Young's 1-19: in the NSM collection.*

club, then modified to fit VSA needs. There was some discussion on the definition of a vintage glider. It was finally decided that a sliding scale starting with any glider at least 25 years old would be acceptable. By 1985 the requirement would be 30 years and so on. The feeling was that the old gliders would eventually be destroyed due to deterioration or accidents, and unless the age requirement was liberalized, VSA would eventually find itself without any flyable gliders.

Time has proven that this concern was unfounded. The number of airworthy vintage gliders has grown every year since VSA was born as old hidden-away projects were brought forth and resurrected, usually to a standard much higher than that of the original. Therefore the qualifying age has now been frozen at a design year prior to 1958. This kept the plastic ships off the list for the time being.

About this time I wrote a story about restoring old gliders to their original appearance rather than trying to make them look modern, which was common practice at the time. The article was published in *SOARING* and resulted in several new restorations coming on line.



By now it was felt that VSA needed a logo. A contest held for one resulted in the well-known VSA logo used to this day, although there were a few attempts over the years to replace the Minimoa with an American design.

The bylaws state that VSA will cooperate with and support the activities of NSM. Nevertheless, at the time some NSM trustees were worried that the rapidly growing VSA would be a competitor to the museum and divert resources that would otherwise benefit NSM. Fortunately, it was seen differently by Paul Schweizer and he convinced the museum directors that VSA would eventually provide NSM with a pool of beautifully restored sailplanes to exhibit and also become a living part of soaring history that would be of great benefit to the museum. Time has proven that he was completely correct, as many VSA members' gliders have been loaned or donated for exhibition. VSA Board members often serve on the NSM Board of Trustees, and several past VSA presidents served as NSM president.

In 1975 I became aware of a similar club in Great Britain, headed by Chris Wills, son of the well-known soaring pioneer and author Philip Wills. The Vintage Glider Club of Great Britain was a year older than VSA, and was run more or less single-handedly by Chris. The VGC grew very quickly and its membership spread across Europe. After being elected VSA president in 1975, I traveled to England to meet Chris and establish a connection that resulted in a number of mutual benefits, including the exchange of construction drawings for older gliders. These were copied and made available to members of both clubs to aid in restorations or replica building as well as for detailed scale model building. VSA has furnished copies of these drawings to the NSM and the Smithsonian archives.

The annual membership meeting and regatta continued to be held in Elmira for several years, usually in conjunc-

tion with the SSA's *Hall of Fame* event. As VSA grew and more gliders came to participate, some members of the Harris Hill Soaring Club began complaining that VSA was tying up their towplanes, and thus limiting their income from the glider rides. VSA felt that the backlog of people wanting glider rides was caused by the large number of visitors attracted by the advertised presence of the colourful old gliders – sort of a Catch-22 situation.

While only a few individuals were complaining, it was enough to induce VSA to seek alternate sites for its annual meet. Thus over the years the annual meet has been held in places like Lovettsville VA, Mayville NY, and Manning SC, while regional regattas have been arranged at Ridge Soaring and Kutztown PA, Warrenton VA, du Pont's Summit Airport DE and Sky Manor NJ. In California, several meets have been held at Hemet, Ryan, and Tehachapi. In 1997 the first Southwest regatta was held in Moriarty NM, and in 1998 the first Midwest regatta took place in Lawrenceville IL along with a northeast meet in North Adams MA. Many other soaring sites have offered to host regattas, but most of these are declined for lack of suitable towplanes or sheltered storage.

During the first fifteen years, VSA activity was concentrated in the eastern US where most board members resided and where Mai and Jan Scott had made their airstrip and hangars available for vintage gliders exclusively.

In 1977 VSA was incorporated, and in the following year it became a division of SSA. Shortly thereafter, VSA undertook a very successful membership drive, which swelled our ranks to some 650 members, the highest ever. But no efforts were made to retain these members and the newsletter fell behind schedule. Eventually 650 copies of *Bungee Cord* were mailed out while only 120 members paid their dues. By 1984, the association was on the brink of bankruptcy. With a new board and a dues increase, VSA recovered; soon after the newsletter was put back on a firm schedule, and membership stabilized at around 450.

Two new centres of activity emerged in the 1980s. First in southern California, where Jeff Byard, Raul Blacksten, Wayne Spani, Doug Fronius, and Harry Irvine formed a new VSA nucleus. A couple years later a group in South Carolina spearheaded by Jim Stoia and Bob Gaines became a hotbed of activity.

At the annual membership meeting in 1989 a member who had sold his vintage glider and bought a more modern higher performance ship, but wanted to continue to fly in VSA meets, introduced a proposal to add a Classic Division within VSA. Added administrative burdens and a loss of "purity" were the main reasons that the proposal was defeated. It was reintroduced the following year with the support of Paul Schweizer, who felt that the owners of the many older glass ships would provide growth beneficial to VSA. Thus a Classic category consisting of gliders built at least 25 years earlier was established, but the expected membership growth didn't occur.

VSA members have participated in International Rallies in Europe with several different gliders sent over ⇒ p29

Trophy winners at Nats

The following trophies were earned by pilots competing in the 2012 Canadian Nationals:

- Wolf Mix trophy** (FAI Class champion)
Dave Springford (with a perfect score)
- CALPA trophy** (Club Class champion)
no contest – not awarded
- Dow trophy** (best flight, FAI Class)
Dave Springford, Day 1, 89.0 km/h
- Dow trophy** (best flight, Club Class)
Anthony Kawzowicz, Day 3, 77.2 km/h
- O’Keefe trophy** (best team)
no team entry in 2012 – not awarded
- SOSA trophy** (Novice) – Gabriel Duford

ASCent, the other Canadian gliding magazine

Most of you probably don’t know that the Alberta Soaring Council has published a provincial gliding magazine, *ASCent*, for a long time as a communication and storytelling vehicle for the clubs in Alberta. It’s evolved over the years to its current version as an all-colour end-of-season annual. All the issues from 1991 have been archived on the ASC website <www.soaring.ab.ca>, and a SAC link to it has now been added in the SAC Document Vault. Have a look.

SeeYou recorder app

SeeYou Recorder is a free app that turns any Android or iPhone into a flight recorder.

Flight logs may be sent to “the cloud” for access from your PC or Tablet. Launch the app, choose to start recording your flight and put it in your pocket. After landing the flights are synced to “*SeeYou Cloud*”. You can then use *SeeYou* for Android and iOS, or upload them to an online contest.

Recent smart phones are able to record 10-13 hours of flight before the battery reaches 20% and the app stops recording (the percentage is selectable in the settings). Tablets have much larger batteries and are for this reason very suitable for running *SeeYou Recorder*.

Other products include *ConnectMe* (free), *MOBILE*, *SeeYou Competition* used to score the recent Uvalde Worlds, and the *Oudie 2* sunlight-readable moving map cockpit flight computer and recorder.

Naviter products and registration keys are available from Fox One Corp. E-mail questions to <dave@foxonecorp.com> or check the Naviter website.

“Looking up won’t find the solution”

Gliding has a glorious past but whether there will be a glorious future is not certain given the world-wide decline in number of members. Many solutions have been proposed to counteract this development and to make the sport of gliding bloom again. However, behind each and every proposal for a solution lies an (often unconscious) perception of what the problem is and what the goals are. We often jump to solutions long before having understood these two issues. Consequently, no one can agree on solutions and everyone gets frustrated. Most of us are technicians and we always ask ourselves the “How” question. But may be there are other and more important questions to ask before jumping to solutions: “Who, Where, What”, and most importantly, “Why”. Changes in society and culture have changed the foundation for our activity. [We must] discuss some of the questions to ask rather than the answers.

If our core membership is telling us that cross-country is what they like to do and if study results link barriers to cross-country with the success of gliding activities, the alarm bell should be ringing in every club executive’s mind on two key questions:

- Is our club doing everything possible to ensure that we successfully transition our pilots to cross-country soaring?
- Is our club infrastructure and organization conducive to pursuing cross-country?

While a number of successful clubs have this all figured out, anecdotal evidence does suggest there is often a bias in clubs towards the training of ab initio pilots to licence. Once you are cleared by the CFI to fly as PiC, it’s commonly the case that you are often left on your own devices. In some clubs there is a healthy group of cross-country practitioners, and new pilots will often tag along in hope of transitioning. But unless there is a rigorous cross-country training program (and by rigorous it is meant not only to Silver level, but to advanced cross-country), the gap is often too large for people to step over.

Claus Nedergard-Jacobsen, Denmark

Lark life limit update

In 1997, IAR-Brasov issued a service bulletin (ER-24) extending the life of the IS-28B2 2-place Lark glider from 20 to 29 or possibly 35 years. Many of those aircraft are now reaching the 35 year limit. Last year the current type certificate holder, S.C. Constructii Aeronautice S.A. in Romania indicated that they were working on extending the life limit (Service Life Extension Program – SLEP) for these aircraft beyond 35 years and would be submitting it to EASA and the FAA. Since then there has been no further contact with the public on this issue.

Recently, the FAA has forwarded the following message from EASA on the status of the proposed SLEP:

“We could get in contact with the CAA in Romania today and I regret having to confirm that the TC-holder is in the process of bankruptcy. However, there is a limited chance that another company takes over the TCs. We have no unsafe condition pending, thus we will wait some time in order to give the insolvency trustee a chance before we consider the aircrafts to be orphan.”

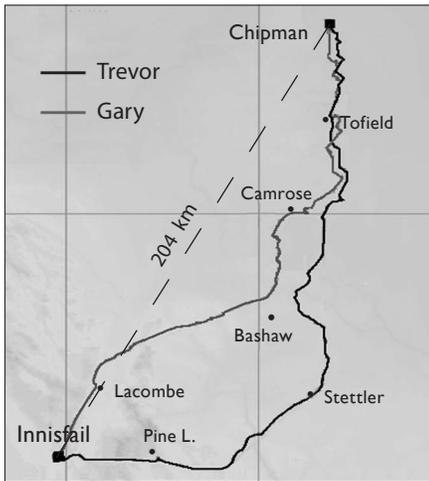
Canadian IS-28B2 owners (five are listed in the Canadian glider register) should contact Transport Canada on the possibility of these gliders being moved into the owner-maintained category.

Winning the Boomerang Trophy

In Alberta, the Boomerang is awarded for a flight to another club. In southern Ontario a similar one is called the Travelling Trophy. It’s carried along in the glider – the goal being to get rid of it rather than earn it! Each, however, are incentives to be out there doing some cross-country. MSC and GGC would be an ideal pair of clubs for something like this. Here is a tale by ESC’s Trevor Finney. Tony

Thursday, 14 June, was a really good day, so when Gary Hill said, “Are you going to fly with me to Innisfail today?”, I rushed to the computer and had a quick look at Google Earth to see what I was letting myself in for. I made a note of a few waypoints and notable ground features. I got my ASW-20 readied for the flight and the glider trailer for the retrieve.

Gary made me launch first so that he could be sure I would actually fly with him (I had backed out the day before). When he called that he was on his way, I set off after him. I got a bit ahead and a little to the east as we



approached Camrose. At this stage I realized I was too far into the flight to turn tail and run back to Chipman now.

I could see Great Buffalo Lake coming up and decided to go to the east of it rather than dealing with air traffic over the Camrose-Edmonton airspace. The sky was working well, but clouds were getting darker and more sky was being covered. Gary radioed he was approaching Bashaw, and when I looked down I realized I was almost over Stettler, and I radioed down my position as I overflew it.

A minute later Gary called, "What are you doing over Stettler?" My answer, a meek "...flying...", and I turned on a more westerly course. A little later Gary asked again where I was; I looked at my map and realized I had flown off the bottom of it and was lost. I soon found my Canadian Tire GPS map could be scaled enough for me to find my bearings – I was about 60 kilometres east of Innisfail, so I turned west.

The clouds had become even darker and thicker, and there were a few areas of rain. I got a bit low over Pine Lake, but soon got back to cloudbase and my GPS said I had final glide made. I flew on until I spotted Innisfail airfield with its single pavement runway. At that time Gary was just leaving Lacombe after a gallant battle to gain sufficient height to make it to the goal. He said he was on final glide, so I slowed down and toured the Innisfail airfield area for a while getting a feel of the area.

Finally Gary appeared and flew straight onto downwind leg and a super landing. I followed and we were soon congratulating one another on a fun flight. We found some people to help us pull our gliders into the CAGC hangar just as the heavens opened up. We then contacted Val (CAGC's president), who kindly joined us and hosted us

while listening to our story. Our trailers arrived at 10 pm with Bruce Friesen bringing mine and Dave Scott bringing RXQ's. We boxed up the gliders and with a farewell wave from Val, headed back to Chipman. It rained all the way home and we finally pulled in to Chipman at 3 am.

The flight was great, the challenge was met, and the friends that helped us were tremendous. How special it is to have this amount of fun with friends to encourage and often cajole us into pushing our limits.

It will be fun to drink a toast to the Boomarang Trophy when we get it.

Towpilot wanted

Summer towpilot for SOSA. A non-paying position in exchange for hours. Tailwheel and gliding experience preferred. Ideal for budding commercial pilot. Send resume to:

*Herrie ten Cate
<htencate@rogers.com>*

SAC Youth Bursary Program

The 2012 soaring season has proven to be our most successful year in our organizational efforts to support those SAC clubs participating in the SAC Youth Bursary Program. The matching financial assistance that SAC provided to the clubs for the participants varied from \$200 to \$499 and was arrived at in consultation in how the club wished to sponsor their applicant(s). The eleven clubs along with the 39 gliding students are listed below.

Alberni Valley Soaring Association
Daniel Alex Steeves – Air Cadet
Travis De Rooy – Air Cadet

Canadian Rockies Soaring Club
Luke Zehnder – Youth
Nicolis Spense – Youth

Edmonton Soaring Club Junior Gliding Camp
Tegen Dunnill Jones – Cadet – Calgary AB
Arlin Stradnyk – Cadet – Saskatoon SK
Joshua Hubbs – Cadet – Saskatoon SK
Earl Paul – Cadet – Lloydminster AB
Fred Page – Cadet – Ile des Chenes MB
Spenser Forsberg – Cadet – Nipawin SK
Joshua Sittler – Cadet – Landis SK
Daegan Banga – Cadet – Grandora SK
Jordan Stefaniuk – Cadet – Willingdon AB
Danielle Fish – Cadet – Banff AB

Saskatoon Soaring Club
Austin Legacy – Youth
Tu Keeley – Youth

Winnipeg Gliding Club
Jesse Mack – Youth

Great Lakes Gliding Club
Brad Wood – Junior
Daniel Pinto Ramos – Youth

SOSA
Alexandra Luchian – Youth
Ioana Luchian – Youth
Patrick McGuire – Youth

York Soaring Association
Rebecca Kingdom – Junior
Thomas Butts – Junior
Timothy Belchior – Youth
Rob Carmen – Youth
Pearl Le – Youth

Rideau Valley Soaring School
Yvonne Ho – Junior
Kyle Corbin – Junior
Thomas Stieber – Junior

Gatineau Gliding Club
Tara Smith – Junior
Abigail Sze Pui Chan – Youth

CVV Champlain
Antoine Latulipe – Youth
Charles Eliot Decambre-Audet – Youth
Pier Alexandre Guimond – Junior
Valerie Cypihot – Junior
Yannick Cote-Prud-Homme – Youth

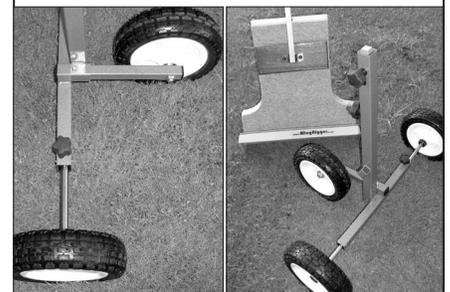
CVV Quebec
Philippe Desmarais – Junior
Mathieu Beland – Air Cadet

I would like to thank the clubs and all the members involved in 2012 and look forward to another successful year in 2013.

David Collard, SAC Treasurer

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A different approach to risk management

During the 2012 SSA Convention in Reno, one of the most thought-provoking presentations was from a US fighter pilot – a four star general – who loves soaring and homebuilding (he’s on his third project now). He talked about operational risk management in situations where aircraft will be lost (wars), and in training, when they shouldn’t. He mentioned that the USAF Academy, which has a big soaring program, soloing hundreds of students a year, with strong aerobatic and cross-country segments, had not had a fatality or glider written off in the past 200,000 flights (they do about 30,000/year). I was intrigued.

Clearly, the ability of a military organization for discipline and prodigious numbers of rules has a role, but what else are they doing that we are not in SAC clubs? The answer, or part of it, was the formal assessment of risk, and mandatory mitigatory action to reduce it when possible. Cancelling flights might be necessary. I know that we have added “Options” to our pre-takeoff check. Might it be necessary to do more? As an ex-military aircrew, I’m

aware that military and airline operations place a lot of emphasis on risk awareness, and that mitigating risk saves lives.

I spoke to Lt Col Mark Matticola, who works in the USAFA program as Assistant Director, Advanced Soaring, and asked for a copy of the risk matrix they used. Looking at it, I thought that it would be worthwhile for clubs to adopt. I have made a modified version (below) that clubs can customize to their specific operations.

Note that the matrix does contain some personal information; however, the only thing that the Field Manager (or whatever your club uses to control the pilots launching) needs to see is the end score. It would be useful to laminate the table, and give a non-permanent marker for the pilot to use to get their risk score. They would then erase it. Club chief towpilots can easily modify it for their purposes also – when a single pilot tows all day, their risk does mount up.

I like the matrix approach, since you end up concentrating on the pilot (experience and some human factors), the environment, the flight, and the aircraft. After completing the matrix, you have thought about most aspects of the flight before getting into the aircraft. As a result, you enter the aircraft having a safety frame of mind (... it can happen to me). Also, this recognizes that, to some

Risk management Assessment Matrix (modify as needed for local situation)

	Category of risk	Risk			Score
		Low	Higher (+1 point)	Highest (+2 points)	
Pilot factors	Sleep	8 hours	6 hours	4 hours or less	
	Experience	Multi-year recent	Multi-year but with gaps	First year	
	Family/personal	All is well	Some problems	Many problems	
	Work pressures	Some	Moderate	Swamped	
Type of flight	Instructional – ab initio	Pre-solo	Post-solo	Advanced (spins, etc.)	
	Licensed pilot – solo	Experienced in type	Under 10 flights on type	First flight on type	
	Licensed pilot – passenger	Experienced	First one this year	First 5 passenger flights	
	Cross-country	Diamond dist/goal	Gold/Silver (& equiv. OLC)	Bronze / not current	
Flight factors	Time on duty	Under 6 hours	6-10 hours	10 hours or more	
	Currency	Within 14 days	15-30 days	30+ days	
	Planned flight time	Under 1 hour	1-2.5 hours	Over 2.5 hours	
	Flights today	1-4	5-7	Over 7	
Weather	Wind	0-10 kts	11-20 kts	Over 20 kts	
	Crosswind	0-7 kts	8-12 kts	Over 12 kts	
	Turbulence	Light	Moderate	Forecast severe	
	Temperature	-10 to +20C	21 to 30C	Over 30C	
Traffic	Traffic mix	Glider/towplane	Mix winch/aerotow	Add in GA/commercial	
	Traffic density	Few (1-4)	5-10	Very busy (10+)	
	Traffic type	Club operations	Contest	Contest/club ops/GA	
Contest	Size	Under 10	11-20	20+	
	Your experience	Many contests	Completed 1 or 2	New to contests	
	Pressure to fly	Contest days in or likely	Some doubts	One more day to be official	
	PowerFLARM used	All gliders	75% or more	Under 75%	
Total					
0-14 points Okay to fly		15-20 points Use caution, consider dual		21+ points Fly with instructor or cancel flight	

extent, risk is additive. It is the flip side to the coin of the Swiss Cheese model of flight safety, where an accident has happened because all the risk "holes" have lined up. Scoring yourself lets you look at most of these holes in advance.

When Dan Cook looked at the draft of the article, he noted that he had changed his mind on doing things when questioned by another pilot. "I know I have changed my mind when I discussed whether it was appropriate to take a risk. Not so much that what the other pilot said, but the fact that I heard myself ask the questions and then it didn't sound so good to me!"

I will be posting the matrix draft in the SAC Document Vault in Word format, and therefore easy to modify. I will also attempt to get it translated into French (volunteer welcome). I will also start a thread in the Roundtable about this table so that others can give their input – the result will be better than I can do alone. Clubs can modify it as they like; indeed, discussing it could be an exercise for a yearly safety meeting. Are the measurements realistic? Are things at your club different enough to require any changes?

I really believe that formally assessing your risk factors before flying will make your flying safer, and if you choose to accept a higher risk, it will be after a conscious decision making process. At least, it may make you consult a more experienced pilot, who may have insights you don't.

What do you think?

How much risk?

The principal point of assessing a risk is to establish that one's skill and experience is sufficient to qualify you to take it. In other words, it is not really a risk at all. The message here is that, in order to grow, it is necessary to fly to the full limits allowed by one's skills and capabilities, but never beyond them.

The limitations of one's experience can be extended by consideration of the correct way to handle imaginary situations that, to a great extent, can substitute for risking neck and glider when carrying out the real thing for the first time.

Living is risky – the only absolutely safe person is dead. Your progress and safety lies not in denying the existence of risk, but in accepting it and preparing yourself.

from "Calculated risk-taking" by Peter Savage (*free flight* 1986/4)

Recommended reading

You've probably forgotten all about many really good articles that have appeared in past issues of *free flight*.

Today's recommended reading is:

"Do you know what you know?"

on climbing the competency ladder

Check it out – download the 2007/04 issue in the SAC archive.



- *Glider maintenance*
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Then there are the "Where?" questions. The obvious question to consider is where should gliding be conducted? Should there be a gliding centre next to each and every village? Next to major cities only? Regional centres? National centres? Or international centres only? Or a mix?

A Finnish delegation at the Nordic Gliding Meeting once came up with a very interesting observation: the Finnish season is only 3-4 months long. So they had discovered that, if they took in all the expenses of operating a Duo Discus, their flying hours would be cheaper if they stationed it in Spain where the season is nine months long, even including all the travel and living expenses!

Eventually we must consider the "How?" question. Gliding used to be the answer to the question of how can we make flying accessible and affordable to the common man. There is no point in discussing changes if nothing can be changed. However, a number of parameters can be fine-tuned. Candidates include:

- Optimize the time and expense of our operations.
- Hire assistants or merge into sufficiently large units to make this economically feasible, if that is what is called for.
- Modernize our equipment and facilities.
- Resort to low-cost gliders and equipment if cost reduction is what is called for.
- Dispense with the alpha males known to scare newcomers away.
- Gliding is heavily dependent on weather conditions. Today we like to have everything scheduled, but we cannot schedule weather.

CREATING THE GLIDING "BRAND"

As previously mentioned, why would any sane person want to fly a non-powered aircraft even if he or she could probably get more flying hours in a powered aircraft at a lower cost? Gliding used to be an inexpensive alternative to powered flight and many of us continue to market gliding as if that was still the case. No wonder why so many people drop out when they discover how costly it is in other terms such as time.

Those who have stayed in gliding know there is a lot more to gliding than inexpensive flying but how is that message projected to the in-coming cohorts. The methods employed to promote gliding fifty years ago don't fit in today's information-loaded lifestyle. To get the message across today a short phrase consistently repeated in the market place is

an absolute requirement. In today's language gliding needs a brand.

Scuba divers have successfully implemented a brand named PADI. Whenever a potential scuba diver stumbles across the 'PADI' acronym or flag anywhere on a remote beach in the world, he or she knows what it implies – a skill level, a set of requirements, a service level, a price level, etc. Gliding cannot do that until our clubs start to agree on *what it is* that we are actually providing.

Before a gliding brand can be established the first challenge of the gliding community is one of change management. Despite the decline in membership numbers, clubs have not become any worse at running gliding clubs; they are better than ever. The problem is that the surrounding world has changed much more. With the best of intentions the onward onslaught of the outside world cannot be halted. It's adapt or die. It's hard to impose changes on others but change is a fundamental condition of life and "Change Management" has become an important issue in any organization. Once gliding has identified the questions it needs to ask, there are people out there who can help provide solutions.

GROWING THE NUMBERS

Alison Randle, the British Gliding Association Development Officer, addressed the issue of how clubs might improve participation figures. She noted that part of the gliding "problem" is that we do not properly understand the complex mechanisms at play as the numbers of people taking part in the sport continue to fall. The gliding club has an important role to play:

- The gliding club is common to all countries and types of gliding.
- In order to take part in gliding, people need to join a gliding club.
- An important function for national gliding organizations is to support gliding clubs.

Two further assumptions may be relevant:

- All clubs do at least one thing very well or else they would have gone out of business.
- It is most unlikely that any club anywhere does everything well.

At a recent UK Junior Training day, it was clear that there is some difference between what clubs say they are providing for junior pilots, and what the junior pilots are saying they require for their flying development. Some clubs are providing excellent support, but others fall short.

"First and foremost, a gliding club is a sports club. I have a theory that people join gliding clubs in order to fly. I also know that when

people are getting plenty of flying they become more enthusiastic, spend more time at the club, spend more money and are more likely to volunteer. Therefore, the single most critical factor for gliding club business is flying activity," she said.

As people need to join a gliding club in order to fly, it makes sense to look at how clubs support people and their soaring. In particular, clubs need to better understand the reasons why people don't persist with the sport and ask "what are the barriers?" How can clubs ensure that people are encouraged to take part and to achieve potential? To be truly effective, it is important that the people involved with any national gliding project understand club and pilot development. Clubs and national organizations need to ensure they have the most appropriate people involved with such a project. The following points will need to be addressed:

- Need to understand issues, influences, and other factors.
- Need to identify experts from other clubs.
- Facilitate access to ideas and resources rather than rolling out programs across the country.
- There must be a way of sharing results with clubs not directly involved with the work of the project itself.

The BGA Development Officer concluded with, "We know that there are some excellent examples already in use at various clubs around the world. The proposal is that we find them and share them, using outside help as required to try to ensure we aren't wasting time or energy. A very important point was raised in Sweden, and one that I took some time to properly understand. The question was asked, "Are we, the people who have been involved with gliding for many years, the right ones to work out what is going wrong?"

The full transcript of the papers presented to the workshop can be found on the EGU website. There are particularly relevant papers from Denmark, Finland, and the Netherlands. Go to <<http://www.egu-info.org/news.htm>>.

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The final possibility was that of mechanical failure – the most plausible seemed likely to be a failure in the mixer which blends the rudder and elevator functions of the V-tail.

Three days later, a professional salvage crew and some club members removed WZT from the water, and Brian Stratton from MoT did a careful analysis, eliminating mechanical failure. The plastic handle was still dangling from the release handle on the end of its cord, bearing score marks corresponding exactly to the edges of the floor opening around the stick; it was a perfect fit between the stick and the rim with the stick in a central position; and the cloth boot around the stick had an oblong hole on the pilot-side through which it could easily have slipped. It almost certainly had provided the obstruction which had jammed the stick in a slightly elevator down position and maintained the dive.

This simple thing almost took my life and probably has destroyed a beautiful sailplane. It could have been even worse – an unpowered aircraft out of control near a colony of people is an awful thing to contemplate.

The errors had been made on the ground. Rather than designing a safe solution to the problem of the release handle's awkward location, we had made a potentially lethal modification, disregarding one of the most important principles of safe flight: never have anything loose in your cockpit. I never

noticed that the boot was not intact. I had learned a lesson the hard way.

The other important lesson involves parachutes. Only a few days before the last flight I'd been complaining about the absurdity of paying a thousand dollars for a cushion to put behind me so I could reach the rudder pedals. I certainly had never expected to use it and was sure I couldn't have got out of a sailplane in flight anyway. It was difficult enough getting out on the ground.

As everyone knows, in an emergency you usually can do whatever you have to. The harness straps of the chute happened to be snug, not because I had considered this to be important, but because they got in the way of the ship's harness when they weren't. And I didn't know for sure where the D-ring was. Yet that chute rewarded me with the most beautiful sound I ever expected to hear – a little 'pop' as it opened. There was no shock, no jolt; it just picked me up and slowed me down. These days I hate leaving home without it – to hell with my American Express Card.

So take care, people. Imagine the worst that could happen, then realize it really is possible, and prepare to survive it. ❖

Only some of us learn from other people's mistakes – the rest of us are the other people.

Plans for the future On my last day at LEM, Tomé threw a goodbye garden party with traditional Brazilian cuisine and a refreshing swim in the river. I ate just about enough to last me the whole trip back to Vancouver. We talked about future plans for flying in Bahia and the upcoming Worlds in Argentina, where both Gugui and I will be competing in the Club Class.

I got an invitation to come back to Bahia for two to three weeks every September, which I will find very difficult to resist. Gugui also told me about his plans to establish a gliding centre somewhere near LEM, with a private runway and resort-like accommodations for pilots and their families. One of the reasons for moving away from the local airport is the expected increase in the general aviation and commercial traffic, which would not mix well with foreign glider pilots who don't speak Portuguese. Gugui is also planning to acquire a Wilga towplane and several high performance single and two-seaters, which he would offer for rent to visiting pilots. If everything goes as planned, this should all be in place by September 2014.

Currently very few glider pilots outside Brazil know about Bahia and its amazing potential. However, judging by the comments made by most of my gliding friends, there seems to be a lot of potential interest in visiting Bahia to do some high quality cross-country soaring in the future. ❖

in praise of old gliders

from page 23

from the United States. The results have been very impressive. Of the three gliders, two became Grand Champions and one a Reserve Champion. A syndicate based a Schweizer 1-26 in Europe for a few years. This glider represented the United States in several international rallies throughout Europe.

In 1995 an International Vintage Sailplane Meet was held on Harris Hill, the first such event ever in the USA. The nine-day meet was co-hosted by the NSM, the Harris Hill Soaring Corporation and VSA; it was a resounding success. Ten foreign-registered gliders participated along with forty domestic gliders from across the US. A second IVSM was held in July 2000 and a third was in August 2005.

VSA membership remains stable at about 450. Of these about ten percent are in foreign countries on five continents. An estimated 100 members are scale model builders who

make good use of the drawings and photo packages that are available to members. The list of known vintage gliders, about 30 when we started in 1974, has grown to about 350! The classics and foreign-registered gliders are not included in this count.

Despite predictions to the contrary, there have been no accidents in the 25-year history of VSA caused by structural failures in the old gliders. The members are generally doing a good job in caring for their ships and protecting them from the elements. The value of vintage gliders has remained stable over the years, except for a few rare gull-winged types that have recently been sold or offered for sale in the \$60,000+ range. VSA appears destined to be around for a long time to come.

What is a "Classic" glider?

The Classic Division has been with the VSA since 1990. The first generation of fibreglass sailplanes is now becoming recognized as a group that interest many VSA members – gliders like the Phoebus, Diamant, Libelle, ASW-15, Stand-

ard Cirrus, LS-1, and others. Nevertheless, using the existing "25-years-or-older" definition, sailplanes that would qualify as Classic now include Discus, Ventus, ASW-20, and any sailplane introduced up to 1987 – and soon it will include even newer designs. Would it make sense to re-define "Classic" to a specified earlier year?

"Classic" could be redefined as any sailplane introduced before the advent of the 15m class (the breakthrough in technology, design, and performance) in 1974, and thus limit Classic to the earlier ships that need more maintenance attention and do not have the later airfoils, carbon structures, and performance engendered by the advent of the 15m class. Where does the commonality of interest lie between owners of Classics and other VSA members? There is plenty to think about and discuss on this issue. ❖

VSA currently has sixteen Canadian members, one in AB, four in BC, two in MB, eight in ON and one in QC. Interested? See info on next page. They have reduced the mailing costs for their magazine, *Bungee Cord*.

FAI badges

Walter Weir

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(905) 263-4374, <2waltweir@gmail.com>

These badges & badge legs were recorded in the Canadian Soaring Register during the period 14 September to 24 November, 2012.

SILVER BADGE

1070 David McClean Great Lakes
1071 Robert Zachemski SOSA

DIAMOND GOAL (300 km goal flight)

Pierre Gavillet Montreal 305.9 LAK-17a Hawkesbury, ON
Frank Cwikla Winnipeg 315.8 ASW-19 Starbuck, MB

GOLD DISTANCE (300 km flight)

Frank Cwikla Winnipeg 315.8 ASW-19 Starbuck, MB

GOLD ALTITUDE (3000 m height gain)

Patrick Pelletier Winnipeg 4320 DG-300 Cowley, AB

SILVER DISTANCE (50 km flight)

Patrick McMahon York 60.0 CS77C Arthur East, ON
David McClean Great Lakes 51.1 Ka6 Colgan, ON
Robert Zachemski SOSA 71.4 SZD-51-1 Rockton, ON

SILVER/GOLD DURATION (5 hour flight)

David McClean Great Lakes 5:20 Ka6 Colgan, ON

SILVER ALTITUDE (1000 m height gain)

Patrick McMahon York 1147 CS77C Arthur East, ON
David McClean Great Lakes 1680 Ka6 Colgan, ON
Robert Zachemski SOSA 1407 SZD-51-1 Rockton, ON

C BADGE (1 hour flight)

3001 Patrick McMahon York 3:28 CS77C Arthur East, ON
3002 David Philip Great Lakes 1:35 Ka6CR Colgan, ON
3003 Shardul Dubey Montreal 1:35 KR-03A Hawkesbury, ON
3004 David McClean Great Lakes 3:00 Ka6 Colgan, ON
3005 Daniel Pratte Champlain 2:12 LS-4 St-Dominique, QC
3006 Tanis Scott Winnipeg 1:24 KR-03A Starbuck, MB
3007 Alvin Joreim Winnipeg 2:07 KR-03A Starbuck, MB

Vintage Sailplane Association

Promoting the acquisition, restoration and flying of vintage and classic gliders and preserving their history since 1974.

For membership information, see the VSA website:
www.vintagesailplane.org/membership.shtml

Jim Short, president: simajim@comcast.net
Barry Van Crommelin, secretary: Kimobear@aol.com

soaring services

Fox One Ed Hollestelle of Solaire Canada has retired from distributing glider instrumentation to enjoy the perks of semi-retirement. Dave Springford of Fox One Corp has taken on the Canadian distribution for instruments and software for LX Nav, LX Navigation, SeeYou, Becker and Dittel radios, and will continue to support Ed's

former customers. For more product details go to the Fox One Corp website at <www.foxonecorp.com>.

MZ Supplies Canadian dealer for Schleicher sailplanes, and Cambridge and Borgelt instruments. Ulli Werneburg <www.mzsupplies.com>, <wernebmz@magma.ca>, (613) 826-6606.

Sportine Aviacija Canadian dealer for LAK sailplanes. LAK-17a – 15/18m flapped; LAK-19 –

The table below shows that 2012 was a very good year for badges except for complete Diamonds and 750 or 1000 kilometre distance flights. Of the 38 C Badges, 15 came from Air Cadet camps held at York Soaring and Winnipeg Gliding Club. Let's hope that many of them continue soaring.

Three pilots earned all three legs of their Silver badge in one flight:

- Trevor Finney of Edmonton on 26 May in an ASW-20
- Justin Gillespie (age 19) of Winnipeg on 2 June in an Astir CS
- David Gossen of Toronto Soaring on 2 July in an ASW-20

Badge & badge leg statistics, 2003–2012

	03	04	05	06	07	08	09	10	11	12	5 yr avg	% of avg
1000 km	0	0	0	0	0	1	0	1	1	0	0.6	–
750 km	–	–	1	1	2	1	0	2	1	0	0.8	–
Diamond	1	1	1	0	1	0	0	1	0	0	0.4	–
Gold	7	2	5	1	2	3	4	2	2	3	2.8	107
Silver	19	7	7	13	16	9	10	9	11	9	9.6	94
C Badges	26	18	33	19	27	21	23	19	27	38	25.6	148
Badge legs	99	51	47	60	90	40	55	58	36	58	49.4	117

Of the 58 badge legs, 7 were Diamond, 10 were Gold, 41 were Silver.

FAI BADGE SUPPLIES

Order through FAI badges chairman – Walter Weir

Note: item 5 not stocked – external purchase approval is given

1	FAI 'C' badge, silver plate pin	\$ 6.00
2	FAI 'C' badge, cloth	\$ 6.00
3	FAI SILVER badge, pin	\$50.00
4	FAI GOLD badge, gold plate pin	\$60.00
5	FAI badge Diamonds	
6	FAI Gliding Certificate	10 for \$39.00 to clubs \$10.00
	Processing fee for each FAI application form submitted	\$15.00
36	FAI SILVER badge, cloth 3" dia.	\$12.00
37	FAI GOLD badge, cloth 3" dia.	\$12.00

Order through the SAC office (and should be available from your club)

33	FAI 'A' badge, silver plate pin	\$ 3.00
34	FAI 'B' badge, silver plate pin	\$ 3.00
35	SAC BRONZE badge pin	\$ 3.00

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MONTREAL SOARING COUNCIL
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www.flymsc.org

Ontario Zone

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info@erinsoaring.com

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www.greatlakesgliding.com

LONDON SOARING CLUB
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www.londonsoaringclub.ca

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www.rvss.ca/

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www.sosaglidingclub.com

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airfield: 24 km W of Shelburne, ON
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YORK SOARING ASSOCIATION
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www.YorkSoaring.com

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Alberta Zone

ALBERTA SOARING COUNCIL
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