



**2010  
Spring**

# **free flight libre**



**F**OLLOWING OUR AGM IN LATE MARCH, SAC will have a new president. It is with mixed emotions that I will be passing the gavel. I became a member of the SAC Board in 2004 as the director for the Prairie Zone, and accepted the honour of serving as president in 2006. A director may serve for as many as five two-year terms, my position of Zone Director will continue through 2010, and I will also sit as past-president. While continuity is important, I believe an organization needs change, and the time has come. It has been my pleasure to work with a very dedicated Board of Directors and committee chairmen. Although representing a geographic zone, each director has put the best interests of the whole organization first. Each has also been open to change with the goal of building on past successes and implementing new initiatives.

One of the first things I did as president was to conduct a survey of the directors so we could all self-evaluate our organization objectively. The questionnaire was adapted from a very comprehensive evaluation questionnaire developed by the *Institute for Voluntary Organizations*. To each question, the four possible answers were:

- |            |  |
|------------|--|
| Yes        | Our Board is adequately functioning in this area.              |
| No         | Our Board is not adequately functioning in this area.          |
| Partially  | Our board is only partially functioning in this area.          |
| Don't Know | This would suggest need for fact-finding and/or introspection. |

From the responses, we were able to determine strengths, as well as areas that could be improved. This information, along with feedback and suggestions from the general membership, has helped us implement policies and changes that I feel have strengthened the organization.

This past year has witnessed considerable change. After many years of dedicated service, Jim McCollum, our Executive Director, has retired. We had lots of notice and time to plan for this, but his departure has been a challenge. We determined that it would be very difficult if not impossible to find somebody capable of this position within the available budget to work out of the office condo. We were able to negotiate a suitable management agreement with the Canadian Owners and Pilots Association (COPA) to handle the day-to-day office operations. The directors and committees will assume more responsibility. I expect there will be some bugs from time to time, but so far the transition has gone quite smoothly. There will be advantages to working in cooperation with an organization in which recreational aviation is the main focus.

Another large project this year has been the revision of the out-dated SAC by-laws. This has taken longer than anticipated, but I think the results have been worth the wait. Two new funding initiatives have also been implemented. The *Youth Bursary Program*, headed by our Pacific Zone Director David Collard, has proven to be very successful, and plans are to expand it. Dedicated funding to Canadian teams at the world contest level has also been assured.

The National Safety Program has taken a few years to get operational, and is still a work in progress. I urge clubs to continue to be on board with the intent of the program, which is to identify and manage risk, and to improve safety. We are still bending and breaking too many aircraft! *Free Flight/Vol Libre* has changed from six publications a year to four. Once serving as the primary method of communication, the focus is now on stories and articles of interest. The web site has the potential to become the main instrument of communication though it is being under-utilized now.

One of the concerns I have heard most often involved communications and openness between the SAC Board and the members. The directors are elected to represent the members and need support and freedom to do their jobs. I discovered very early that this is a complex organization, and the position of director can be very time-consuming. While unintentional, communications has not always been our first priority. Along with some well-deserved criticism, we have received a lot of positive support, and that is the motivator to continue to work hard on your behalf. I trust there has been better communication and openness, and that it will continue to improve.

The new flying season is quickly approaching – for some it's already here. Fly often, fly safely, and enjoy participating in the greatest form of recreational aviation available! I plan to.



# free flight

vol libre

2010/2 – Spring

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Le journal de l'Association Canadienne de Vol à Voile

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**bringing back the magic**  
**Simon-Pierre Dupont**  
**I bought Dick Johnson's glider**  
**living the high life in Tocumwal**  
**instrument installation & leaks**  
**soaring through the Golden Age**  
**flying the Antares 18S**  
**flight training & safety committee**  
**"Advanced Soaring Made Easy"**



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Photo: Tim Wood

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# Bringing back the Magic

Updated from an old article in *Sailplane & Gliding* by Paul Brice

**W**HERE HAS ALL THE MAGIC GONE? It's a question that many pilots ask themselves some time after gaining their Silver C, for part of the gliding magic is the sense of achievement after hurdling each test or badge. The sort of day required to complete a Silver distance, duration or height appears quite regularly during the spring and summer at most sites. Pilots with sufficient spare time and money, adequate training and certain amount of "go", often achieve their Silver C within a year of going solo.

The first solo, Bronze and Silver C all represent numerous tangible achievements, each one spurs the pilot on to the next. But after the Silver, the badge awards become considerably more difficult and sometimes more expensive to get. The flat-site pilot will often have to travel hundreds of miles in the hope of finding wave to gain Gold and Diamond heights and the 300 km and 500 km badge flights normally require much better than average days. Consequently, the badges – and as a result the apparent achievements – are less frequent and the pilot becomes disheartened.

Ask your club pundits about their most satisfying cross-country flights of the season. After some obvious ones on cracking days, reflection might lead them to mention a flight inconspicuous by its actual distance (only 100 km maybe) but highly satisfying because the most was made of what was offered. A 100 km or 200 km which produces no badge can be far more meritorious in uncertain conditions than a 300 km romp in ideal conditions. And certainly the elation of crossing the finish line after a 100 km completed is far greater than that of sitting in a field after 120 of a failed 300 km. Good cross-country flying comes from a sense of purpose, practice, and the right mental attitude.

There is a great tendency amongst pilots waiting for their Gold distance to waffle around within twenty kilometres of home and then saunter back claiming they have gone around places they could see in the distance and which they never declared beforehand. This achieves nothing. First, the 300 km Diamond is a declared flight and second it requires evidence. I know many pilots (including myself) who have had bitter experiences of losing badge claims and contest days due to a poorly set-up flight recorder. It all needs thought and practice.

Setting the right task for the day is another problem, so practise it. Get help at first – often it pays to ask the pundits what they're doing. If it's a 750 km day, then you might consider a 300 or 500 km attempt! If they're trying to do a smallish task very fast, then declare it yourself – they'll mark some thermals and with luck you may be able to follow for a while (avoid doing this in competition – it irritates the leader). Even if it takes all day, make a proper start, stagger around, go into the turnpoint sectors, and make a safe final glide. Don't let the desire to get around reduce your acceptable safety standards. If you have the opportunity to fly a high performance glider, get help in declaring a suitable task.

However impressive it may sound, getting away from 300 feet is more often the result of a tactical mistake or poor airmanship than supreme competence. Generally, the lower you get, the weaker the thermals become and the fewer your options, so don't glide too fast because you'll come down much quicker. Look at the sky. Fly where the lift is even if it is a little off track. Avoid obvious areas of sink. Be prepared to change gear with varying conditions and if it all goes to worms, fly anywhere to stay up.

If you are landing out time after time, ask yourself why. Look at the flight recorder data. Ask for advice. In the end perseverance will bring results, if slowly. Feel your sense of achievement and the return of the magic – even if you land out. If you are content with your gliding – whatever form it takes – then be grateful for the magic. My words are not a dig at non-cross-country pilots. They are an attempt to encourage those who think gliding has lost some of its charm to get out and feel the great sense of achievement from cross-country flying. Don't worry about the badges, they'll come in time. ❖



## The 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. The accuracy of the material is the responsibility of the contributor. No payment is offered for submitted material. All individuals and clubs are invited to contribute articles, reports, club activities, and photos of soaring interest. An e-mail in any common word processing format is welcome (preferably as a text file). All material is subject to editing to the space requirements and the quality standards of the magazine.

Images may be sent as photo prints or as hi-resolution greyscale/colour .jpg or .tif files. Prints returned on request.

*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'ACVV 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'ACVV publié quatre fois par année.

Les articles publiés dans *free flight* proviennent d'individus ou de groupes de vélivoles bienveillants. Leur contenu n'engage que leurs auteurs. Aucune rémunération n'est versée pour ces articles. 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. Les photos vous seront retournées sur demande.

*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'ACVV 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.

Pour un changement d'adresse ou s'abonner à la revue, communiquez par <sac@sac.ca>. Le tarif d'abonnement est de 30\$ pour 1 an et 55\$ pour 2 ans. Pour l'extérieur du Canada, le tarif est de 35\$US pour 1 an et 60\$US pour 2 ans. La revue est disponible gratuitement, en format "pdf" au <www.sac.ca>.

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## Simon-Pierre Dupont Corley Scholarship winner

Bonjour! Par la présente, j'aimerais me présenter ainsi que remercier l'Association Canadienne de Vol à Voile pour m'avoir octroyé la Bourse Commémorative Peter Corley.

Mon nom est Simon-Pierre Dupont. Je suis membre de l'AVV Champlain depuis 2005, année où j'ai déménagé de Baie-Comeau pour venir étudier à St-Hubert (près de Montréal) à l'École Nationale d'Aérotechnique. Je m'intéresse à la conception et à la fabrication des avions depuis ma tendre enfance. Mon cours en construction aéronautique m'a permis d'acquérir les outils pour mettre en œuvre mes projets et de prendre de l'expérience avec deux stages en industrie et deux compétitions SAE Aerodesign.

C'est donc avec un sentiment de devoir accompli et le goût intense d'aller plus loin, de concevoir, que j'ai entamé mon baccalauréat en génie mécanique à l'École de Technologie Supérieure l'automne dernier.

Durant ces 4 dernières années, les membres de mon club ont été une deuxième famille pour moi. Ma ville natale étant à plus de 700 km de Montréal, mon club est devenu également mon deuxième chez-moi.

Ma formation dans le mouvement des cadets de l'air m'a permis de progresser rapidement et en 2006 j'ai pu commencer à transmettre ma passion en initiant les visiteurs aux joies du vol en planeur. En 2007, ma progression de vélivole a été marquée par des vols de grande durée et de distance. 2008 fut une année d'aboutissement dans laquelle j'ai eu l'occasion de transmettre mes connaissances aux étudiants du club. En 2009, j'ai eu le privilège d'être soutenu par la première bourse SAC/AVVC avec laquelle j'ai pu continuer à prendre de l'expérience en vol à voile tout en continuant d'améliorer mes talents d'instructeur. Ces accomplissements auraient été impossibles sans l'aide des membres de mon club qui m'ont supporté dès le début.

Je vous remercie infiniment pour cette bourse ainsi que pour votre support envers les jeunes vélivoles à travers le Canada. Quelques fois, une simple offre de covoiturage à chaque fin de semaine fait aussi toute une différence!

Good day everyone, I would like to take this opportunity to thank SAC for awarding me the Peter Corley Memorial Scholarship.

My name is Simon-Pierre Dupont, a member of Champlain since 2005, the year I moved from Baie-Comeau to St-Hubert to study at l'École Nationale d'Aérotechnique. I have been interested in the design and manufacture of aircraft since childhood. This aircraft construction program allowed me to acquire the tools to pursue my goals and gain experience through two internships in industry and two SAE Aerodesign competitions. With an intense desire to go further, I started a degree in Mechanical Engineering at l'École de Technologie Supérieure last fall.

My hometown being more than 700 km from Montreal, my club has become a second home for me, and during the past four years club members have been a second family.

Training as a glider pilot with the Air Cadets allowed me quick progress at AVVC. Early in 2006, I could start doing intro flights for visitors. In 2007 I started cross-country and duration flights, and in 2008 I got my instructor rating. In 2009, I had the privilege of being awarded the first Corley scholarship at our club, one that allowed me to gain experience both as a cross-country pilot and instructor. None of this would have been possible without the help of my fellow club members who supported me from the beginning.

I want to thank the Soaring Association of Canada for this scholarship and for your continuing support of young glider pilots across Canada. The money and rides to the gliding field made a huge difference! ❖



# I bought Dick Johnson's glider

Leo  
Deschamps  
CAGC

from ASCent



I BLAME MY SOARING URGES on certain Central Alberta Gliding Club members. It started a few years ago while trying to advance my new flight skills as a junior pilot – I was encouraged to start work on doing a cross-country flight. At the time I was thinking how cool it would be to go 15 or 20 km from the airfield. I soon bought a share in a 1-26. That first time I went 30 km out and back was an exhilarating experience. Things became challenging all over again: navigation, wind, maps, planning and, of course (I quickly learned), the outlanding.

I soon found I could really use a higher performance aircraft. An opportunity came to purchase a share in the Slingsby Dart, a 37:1 ship with a 17m wing. This took me to the level of aircraft sophistication of “Retractable Landing Gear”. That’s right, until now the “W” in the landing check list (wheel & water) meant that I still had a wheel and is my bottle of water in a good spot for the landing ... also oxygen, electronic vario and a flight recorder. I became cross-country hooked. While experiencing my first competition flying at North Battleford, I did the distance leg of my Silver badge and soon, at the Cowley summer camp, a 5-1/2 hour flight and Silver height. Badge complete. Cowley fall camp, Gold height to 18,500 feet in wave (awesome!) All is good, right? No, I have one problem – my partner wants to fly the same places I do. That’s good except it makes it real snugly in the cockpit. I need my own glider.

I searched for a year and found a Nimbus 2 in Denver. It’s tough to buy a plane when you don’t get to see it fly or never sit in it. Do all the research you can. Through the summer I asked questions of anyone who would listen. I took the opportunity to sit in several ships to see how I fit. To shorten the story, with a high dollar I negotiated a deal on the ship and on the September long weekend, my wife Valerie and I set off for a quick trip to Denver. The adventure began.

We snuck out of work early Wednesday afternoon, figuring that we can get a head start from Red Deer to maybe Lethbridge. I had no real travel plans other than get there, which drives my wife Val crazy (don’t know why) – I decide we can

get to Shelby, Montana. By the way, there is no ladies washroom between Lethbridge and the border at 2230 (sorry again Val, that wasn’t intentional).

We were asked a few questions at the border and were on our way to Shelby. Shelby is 3 blocks wide by 4 blocks long with a casino. We got the last room at the Crossroads Inn. A lovely two-story all-wood hotel, built in the 30’s maybe. We get to our room with its 13 channel TV and a dilapidated air conditioner. Oh yes, it was poker night, with about twenty “good ol’ boys” right next door – and we soon got used to the cigar smell. In the morning we ate our complimentary grits and off we went, planning to get to Denver that evening.

At first, the State of Montana is no different than the Pincher Creek area. After driving for an hour it starts to look exactly like those old western movies with its hills, rocks, and bluffs. So through Great Falls to Billings we drove. Now I’m a bit of a history buff and I thought, since I need a little break from driving, we’ll stop at Battle of the Little Bighorn site (Custer’s Last Stand hill). We saw the museum and went to see the site where Custer and his men perished, and just outside was a university professor giving a lecture and we listened for the next 1-1/2 hours (this was not in the plan). We couldn’t leave, his story of life at the time really opened our eyes to reality of the battle compared to everything you ever heard, or Hollywood has ever produced. Walking the area, and after my stint in the armed forces, all I could think of was there was no worst spot on this hill you could be for a fight. Also I have never been to any site that has warning signs saying, “**RATTLESNAKE DANGER – STAY ON PATH**”. I stayed on the path.

Our plan was to stop in Casper, Wyoming for the second night but we were making such good time, even though we had to dodge antelope (there were hundreds), I decided to continue to Cheyenne. Val mentioned that it sure would be nice to have a sit down meal instead of eating in the truck. So we found a nice restaurant and 45



minutes later were back on the road again; sorry, gotta keep going. Cheyenne was a little farther than I thought. At about 11:30 we checked in to a brand-new hotel for less than what we paid the night before. It was still being constructed: elevators in their packaging, floor tiles not all down yet, and it was a little inconvenient to go for our complimentary breakfast through the wall of plastic (to protect us from the dry-wall dust).

Next day we're in Denver about 9 am. I have directions – no problem – oops, road construction, and I wasn't told we had to go through the sign that said, "Road Closed". After a couple of diversions and another phone call we are finally introduced to the glider. I look it over and learn to assemble it. Al, the person showing it to me said, "this was Dick Johnson's plane!" Great, who's he? Well, Google him or "flight evaluation of [...] by Dick Johnson" and you'll probably find an article he wrote about your particular glider. What he did for the sport of soaring in the USA is legendary.

After more examination and paperwork we packed up the glider before the big thunderstorm coming over the mountains got to us. We are off and back on the road with a Nimbus 2 in tow. Val is reading all the logs and other documentation while we drive: 20.3 metre wings, total energy, L-Nav, Cambridge 302 vario, transponder and g-meter, electronic on-off switches for every system, water ballast, positive and negative flaps ... "Why is there a parachute in the tail?" she asks. Do not exceed 270 km/h; is this right? All I could say was "Yep" with a smile.

She read to me some of the log book entries. There were three owners of NJD45: Dick Johnson, Charles and Barb Shaw, and Gunnar Blanke. There are handwritten letters between Klaus Holighaus and Dick Johnson. All of Dick's notes on performance enhancements – even how he sanded the wings for better performance. He won two US Nationals with this ship. He was on the US National Soaring team and logged several flights over 1000 km, one over 1200. Barb Shaw, who flew the glider the most, had several female flight records in it. Gunnar did over 800 km. Wow!, I've got BIG shoes to fill but I'm looking forward to the challenge.

Homeward bound, we found a hotel in Sherbrook, Wyoming. It was still 35C outside, even at night. A lot of doors were open and there was sort of a tailgate party going on in the parking lot. With everybody saying hello to each other and enjoying a fizzy pop. As every glider pilot knows, up came that proverbial question, "whatcha got in there?" We got some of the normal ones like, "is that a dragster?" But in the land of 300+ million it was way more diverse: "are you haulin' pigs?", is that a speed boat?, is that a rocket ship?, are you carrying a missile?" I didn't quite know how to answer that one. After assuring people we weren't here to launch missiles and to disappoint others that we weren't going on a ride to space, we went to bed.

It's 6:30 am, day four, Saturday, our goal today was to hit the border at about 1500 so we can be back to Innisfail for about 2000. We fill up, get the drinks and snacks to fill the cooler, and we're on the road.

Because I figured we should see more of the country, I decided to go north of Billings instead of down the main high-

way. The weather was good (only 27C), the roads were dry, and things were going good until in the middle of nowhere I saw a big chunk of something go flying from under the tire of the glider trailer. I assumed that I had run over something on the road. Being a guy, I kept going. Val, on the other hand, thinks we should stop and check it out. No, it looks good from here. We came to a stop sign and made our left turn with Val saying, "Aren't you going to look?" "No, I think it's good". After the turn the trailer starts a little wobble, with me saying, "I don't think that's right". Now Val is losing patience with me so I pull over with, "Fine, I'll go see".

To my surprise there's a piece of tire tread missing about four inches long and all the way across, leaving a gap in the tire. Okay, this is not good as we have no spare. I slow down, taking care to save the rest of the tire. We were thirty miles from the next town, Lewiston. Then the remaining tread completely separates from the tire and it crushes the fender on the trailer and wraps around the axle as it departs. There's still air in the tire, but no tread. Now I drive even slower, all the while waiting for the tire to blow, but we make it to Lewiston.

Lewiston is small, it's the September long weekend, we found a tire shop, it's closed. "Well Val, we may be spending another night in the USA." However, I see someone in the back of the store, get his attention, and after some sweet talking and promising to show the young man what a sailplane looks like, he kindly sold us two new tires mounted and balanced, and a new rim to use the good tire as a spare. He also took out the big tools and got the twisted tire tread off the axle and hammered the bent fender back into shape. "How about \$185", he said. **SOLD!** So now we're back on the road and only about two hours behind schedule.

Finally we were at the border. There were the standard questions from Customs at the drive-through window, then we were told to go inside. I had prepared for this by talking to people who had recently brought aircraft across the border. I was ready with every document: bill of sale, copies of bank drafts and money orders, copies of the original ad from Wings & Wheels, Government of Canada forms filled out and ready. Everything seemed to be going normal. The government took our taxes and duties without any other questions.

Now we should only have an inspection of the truck and trailer and we would be on our way. When the inspector returned she told us to follow her and to wait in a room where you usually watch them inspect your vehicle.

We sat, and sat, and sat. The inspector came back for the truck keys after another 20 minutes. I asked if they needed to open the glider trailer. "No, that's okay", she said. After about another 45 minutes had passed she returns with my laptop in her hands, asking me to please enter your password. This got me concerned and irritated but you can't argue with Canada Customs.

By now we had seen several US tourists come through the border with their bows and rifles for hunting season, all clearing in 10 to 15 minutes. Now I'm worried ➡ **p29**

# living the high life in Tocumwal

*Zach Marton, York Soaring*



**W**HEN YOU TRAVEL SOMEWHERE, there are two things that happen. Before you go, you try to imagine what you expect to experience. After you come back, friends and family will almost always ask you to re-create what you've seen and experienced. Before leaving for Australia, I remember having quite a mix of ideas and views on the place. Now that I am here, I find it equally hard to accurately depict what I've experienced so far.

I had been towing for the last summer at York Soaring. For the past three years I've been keen on gliding, starting at one of York's Air Cadet Camps. Now I'm in Tocumwal, New South Wales.

Tocumwal is a relatively quiet place just shy of 3000 people on the Murray River. At the aerodrome to the east of the town itself, there are still fragments to be seen of its World War II origins. Once home to Liberator bombers, it was the largest air force base in the southern hemisphere. Years after the war, SportAvia started up here and it became renowned as the largest gliding centre in the world. In recent years SportAvia closed, but in its wake came SportAviation, run by the former SportAvia CFI, Eddie Madden, and his wife Cheryl.

Eddie and Cheryl work hard to run the operation daily. They present a unique business that allows pilots to take advantage of the incredible soaring conditions as well as having an excellent training ground for students. Many other friendly people assist in the daily work, know the weather, the flying, and how to help you with your experience. As well, local pilots join in to make it a fully functional gliderport.

Eddie is three people in one. He tows, instructs, and does all the other work needed. He's been working in the gliding industry for years, and even learned fibreglass repair at the DG factory in Germany.

Glider training includes everything, from ab initio all the way to the most advanced cross-country and competition skills. There is a Blanik L-13 and IS-28 Lark for student training as well as two LS-4s and a Pik-20D for solo hire. You can hire a Janus CT, complete with an instructor, or just for cross-country enjoyment.

You also have the opportunity to fly in a EuroFox ultra-light that has a glass cockpit display. The Recreational Aviation Australia (RAA) allows Eddie to provide training



in it. Besides the tailwheel and adjustable pitch propeller endorsements it provides, it is available for paddock inspection flights as part of cross-country training, passenger rides, and it doubles as a second towplane. It's quite a spectacular machine.

For this southern summer, I was hired on as a towpilot. I've also done a few hours of instructing and completed over 30 hours of soaring here. I've been working for Eddie since the middle of November, and had the privilege of towing with the Maule M5 Rocket. This great journey has allowed me to log many kilometres in towplanes and gliders alike, and done things unheard of by those of you at home.

I've grown comfortable with the "at-home" atmosphere that exists here. I've come to enjoy many meals, drinks and conversations with quite a few of the local and international customers that come our way. On any given evening there can be multiple languages spoken at the dinner table. With the many people that come, it is easy to be sitting beside some of the world's best soaring pilots. There's always much to soak up from the conversations. They all have something to teach you, about flying, gliding, and their cultures too.

Unlike back home at York, the conditions here are so predictable that a task can be declared and flown without too much worry. These are days that are unheard of in Ontario and most of Canada. This vast, flat, dry place can be a wonder-world for the soaring enthusiast.

If you were to ask me to describe the summer weather in a few short words, it would be "hot and dry".

It's usually fairly easy to choose which days to go for what distance. With these weather conditions, who wouldn't want to fly here? It's nice to see 15,000 feet to cloudbase, 10 knot climbs, and days in excess of 8 hours of flying. Gold height and distance flights are almost considered a low standard where 1000 kilometre trips are frequently sought after. (One of the most-used landmarks is "The Rock", a popular turnpoint for first Gold distance flights. It is a hill rising noticeably above the rest of the terrain 150 km to the east.)

Never expect to sleep in due to bad weather; by 11 am there will be a lineup of 15 and 18 metre ships waiting for their launch. Today, the temperature will go above 40C, it will be blue, thermals won't stop until 10,000 feet or more, with 8-10 knot climbs possible. A 1000 kilometres will be the goal for the experienced. A few times per season some flights in Australia range up to 1100 or more with speeds ranging above 120 km/h as well.

Today promises to be a "golden day" where you can't go wrong. The familiar buzz of the towplane roars overhead,

pulling a Blanik L-13 or maybe an LS-4. Once the gliders are up and away, I have the chance to try my own luck at the soaring conditions and I decide to head northwards.

I had much anticipation and was actually quite nervous on my first 300, but I flew it without a hitch at over 5000 feet agl the whole way (and I've now completed a few similar flights). In the meantime, some of the top pilots had averaged 500 or more kilometres the same day.

Jumping in an LS-4, I left a couple hours after the thermals began. Flying in the best part of the day, it was easy to let loose the apron strings and get away from Tocumwal. The first town to appear is Berrigan at 25 km, with its clearly visible cricket oval. Later, the town of Urana with a large dried lake to one side, then Oaklands, and finally Lockhart. I'm already familiar with Lockhart, as I helped retrieve another LS-4 from there just days before. I know that my turnpoint is only a few kilometres more, directly on an eastbound road. It's Belfrayden, which is nothing but a former railroad crossing, a road, three houses and a silo.

Even with no cu to mark my way it is relatively easy to stay up. Final glide begins some distance out, giving me more time to take in the scenery. The dry landscape hasn't seen much rain in 17 years. The large fields (or paddocks) are not as great an asset for farming as they once were. With this in mind, there are quite a few that are suitable for landing – some are even smoother and longer than the runways near the local towns. (Almost all retrievals are done by air.)

As each town passes me by, the local scenery becomes more familiar. Finally, the X of the Tocumwal paved runways now comes into view, with the town and river near by. After some time attempting to lose altitude, the LS-4 finally decides to give in. The landing is uneventful with a few final bumps to a stop on the grass. It's then, when you step out of the glider, that you realize the magnitude of what you've just accomplished. The distance traveled in the last four or five hours is quite incredible, all without an engine.

I marvelled at my accomplishment for just a few minutes, then realized a fellow pilot was still flying. The cu were disappearing and the ASH-26 was still 100 km away. My friend Terry, a local pilot, has managed to pull off yet another 750 plus. But even that great feat wouldn't top the Online Contest that night – mind-boggling journeys repeat every day.

It really is quite an experience – for anyone who would like to open their eyes to something completely amazing and enjoyable, come Down Under. I hope to continue towing in the future. I'll write you on my next adventure from Rääskälä, Finland. ❖

# instrument installation & leak checking

Mike Borgelt, from *Gliding NZ*

**I**N ORDER TO OBTAIN THE BEST POSSIBLE PERFORMANCE from your sailplane instruments it is essential that the installation be done correctly and be free of leaks.

## A few simple installation rules

- 1 Use good quality tubing to connect the instruments. Tygon brand type B-44-3 Part AAB00012, 3/16" ID, 5/16" OD is highly recommended.
- 2 *Do not* use very soft wall tubing for the Total Energy (TE) line and make sure this line is well secured so that it cannot move under changing G loads due to maneuvering and/or turbulence. This will prevent spurious transient signals on the vario caused by volume and hence pressure changes in this line. Long lengths of tubing should be of the less flexible plastic or rigid nylon pressure hose. This prevents problems with the sudden static pressure changes in the fuselage during zoom or pushover causing weird transients in the TE vario readings due to these pressure changes being transmitted through soft tubing in the TE line. Any soft wall gust filter bottles should be removed and disposed of for the same reasons.
- 3 All tubing must be in good condition and should be a very tight press fit over the fitting to avoid air leaks. Even a small air leak will compromise a variometer's performance. For extra insurance against air leaks, small thick walled elastic "donuts" may be installed over the tubing several inches past the end. Then, after the tubing is properly attached to the fitting on the instrument, slide the donut back toward the end of the tube so that it supplies extra squeeze around the tubing/fitting area. You can use two on the TE line connections. Short lengths of thick wall silicone tubing may be used instead of the donuts.
- 4 Do not use nylon cable ties or twisted wire on tubing fittings as this will almost certainly guarantee a leak.
- 5 *Important:* Unless all the varios connected to the TE line are of the pressure transducer type, split the line as close to the TE probe as possible. This minimizes interaction between the instruments caused by flow in the line from variometers which use capacity flasks and also prevents the pressure transducer vario response from being slowed by the presence of the flask causing a pneumatic low pass filter to be formed. In practice, placing the T-connector under the seat near the rear of the seat area is good enough.



The most common mistake in variometer installations is to connect two vario systems to one TE line with a T-connector at the instrument panel. The only time that this is permissible is when both instruments are of the pressure transducer type. That is, no flasks hence no flow. Flow sensor type instruments cause significant flows in the line to the TE probe and these flows can cause instruments to interact with each other or with a pressure transducer type variometer causing unwanted transient indications and/or a general slowing of the response of both instruments connected to the TE probe.

- 6 *Do not* place restrictors or gust filters in the TE line and then split the line to two vario systems. Place a separate restrictor or gust filter in each line to the separate vario systems if you feel this is necessary. Try also to ensure that there is no excessive flow resistance in the TE probe mount or in the probe itself. Most modern electronic variometers convert the pneumatic signals to electronic signals and do any required filtering in the electronics, therefore gust filter bottles and/or restrictors are generally unnecessary.

If a paper element filter (motorbike gasoline filter) is installed in the TE line, the filter body *must be extremely rigid* otherwise the static pressure changes during a pull up will cause spurious variometer readings.

- 7 Providing a good TE source is very important. The most common TE probe in use is the modified Irving type. This type of probe is a simple 6mm or 1/4 inch diameter tube bent so the last 3 inches or 80mm or so is inclined to the airflow at 20° forward of a right angle with two small holes 40° to 60° apart at the back of the tube, a little more than 1.5 tube diameters from the end.

The Irving type probe, correctly manufactured, will provide satisfactory total energy (*refer also to the Total Energy article in free flight 2009/3*).

8 Electronic sailplane instruments will benefit from clean, noise and interruption-free 12 volt power. A fuse should be mounted on the battery as close as possible to the positive terminal. Any wire between the battery terminal and the fuse is not protected by the fuse. Care should be taken to double insulate this wire. Use a good quality polarized battery connector. It is important that it be polarized to prevent a reverse polarity connection of the battery which is likely to cause expensive damage to radios and instruments. Borgelt varios are fitted with reverse polarity protection but it is not a good idea to test this.

Power switches and fuses to individual services should be of high quality industrial type, not cheap consumer grade. Mil spec aircraft wire for all power hook ups is highly recommended. Use heavy (16 gauge or larger) wire for power to the radio and transponder. It is also a good idea to run a separate high power bus (including ground) for these and another bus for the variometers and GPS. This will help prevent electrical noise and RF from feeding into sensitive instruments. A common cause of low voltage being delivered to instruments and causing poor performance is high resistance fuses and holders. Use a digital voltmeter to check the voltage at the battery and at the back of the instrument with the instrument switched on. If there is more than 0.2 volts difference find the cause and eliminate it.

Check that the coax from the radio and transponder is terminated correctly at the BNC connector. The glider factories have been known to get this wrong. There is a correct method for stripping the outer cover, braid and inner insulator which can usually be obtained from the connector manufacturer. There is also a potential problem in older gliders where the dielectric in the coax may have deteriorated or connectors may be corroded. In some gliders with carbon fuselage and fin the antenna

*Mike Borgelt began gliding in 1966. After graduating in 1970 with a degree in physics he trained as a meteorologist and spent three years with the Royal Australian Air Force as a civilian meteorologist. During that time he acquired his first sailplane, a Salto, and began investigating electronic variometers before spending some time on staff in the atmospheric science department of an Australian university. In 1978 he and his wife Carol moved to South Australia and started Borgelt Instruments to manufacture electronic variometer systems, which continues today.*

*He was Australian 15m class Champion in 1981 in his Mini-Nimbus and won the South Australian regionals in 1985 which led to a trip to Uvalde, Texas to fly in the USA 15m class Nationals in 1986. Subsequently he became interested in self-launching sailplanes and put a Fischer TOP on his Ventus C 17.6 and owned a Nimbus 3DM to which he again has access and also owns a Bede BD4 for transport.*

*At present he is working on converting his Ventus to a self-launching twin jet sailplane. Progress on this project will be posted on the Borgelt Instruments <[www.borgeltinstruments.com](http://www.borgeltinstruments.com)> web site shortly.*

is in the fibreglass rudder with a connector provided so that the rudder can be removed for maintenance. This connector is not usually waterproofed and is very vulnerable to corrosion and damage to the coax from tail water ballast tanks and general environmental conditions. Heat shrink sleeving with internal glue liner can be used to waterproof these connectors. Check with electronic parts suppliers.

#### **Leak checking instrumentation following installation**

In the glider there is a sensitive pressure gauge – the air-speed indicator. The ASI can be used to detect any leaks in the instrument tubing, instruments and sailplane pitot, static, and total energy systems. You will need the following material:

- a large 60 ml plastic syringe (vet supply houses)
- a laboratory type hose clamp
- an instrument tubing T-connector
- an instrument tubing in-line connector
- some spare instrument tubing
- smooth jaw long nose pliers

Note: all leak testing must be carried out at reasonably constant temperature in the shade. If the temperature is changing it will be impossible to obtain steady pressures, likewise solar radiation will cause pressure changes in sealed systems. Also turn off any electronic instruments, particularly thermistor or hot wire flow sensor varios.

Warning: all pressure changes should be made very slowly to avoid damage to instruments. Make sure that tubing cannot slip off connections, causing sudden pressure changes.

#### **First check the ASI for leaks**

- Connect the syringe to the ASI pitot connection with a length of tubing.
- Gently increase the pressure so that the ASI reads 100 knots or so and then clamp off the tubing between the syringe and the instrument. The ASI reading should remain steady over at least one minute. You can gently tap the case in the event that friction masks small leaks. Remove the clamp and slowly reduce the ASI reading to zero. Repeat this test with the syringe connected to ASI static but this time reduce the pressure until the ASI reads 100 knots or so and then clamp the line. If the ASI fails these tests, have the instrument overhauled and/or repaired.

#### **Now check the rest of the sailplane system**

The static system should be checked under pressure and also under suction.

- Block the static ports of the glider with white wing sealing tape.
- Use T-connector to plumb the syringe into the static side of the ASI and slowly reduce the pressure until the ASI reads 100 knots. Clamp off the line to the syringe and check that the ASI reading remains steady for one minute, gently tapping the case if necessary. Remove the clamp, reduce the ASI reading to zero, remove the tubing from the static connection of the ASI and attach it to the pitot connection. Repeat the test – this time under positive pressure.

⇒ p31



# Soaring through the Golden Age

## *some personal reflections*

Charles & Kris Yeates

**S**Eeking adventure caused it all. This wasn't recognized for a long time. Halfway through university studies, I earned a Private Pilot Licence at the Brant Aero Club's grass airfield in the summer of 1945. It was close enough for bicycling to and from. Tom Senior had returned from instructing in the wartime British Commonwealth Air Training Plan, bringing two new Tiger Moths and engines in crates that had been purchased from War Assets for \$500 each. After they were assembled, Tom taught me to fly and I soloed after six and a half hours at a cost of \$39. Later we flew to Barker Field in west Toronto for licence qualification tests. In those days Ministry of Transport inspectors stayed on the ground to watch pilots being examined fly a prescribed series of maneuvers that ended with a spot landing. Overshooting the approach in a J3 Cub without wheel brakes, I touched down in long grass edging the runway and stopped in time. This was the start of a Golden Age.

There was little more flying until I graduated from the University of Toronto. Money was scarce. First employment with Procter and Gamble provided stimulating experiences equivalent to a Masters degree, and the funds for more power flying. Time passed. Management interests changed, mine and theirs, so that I ended up changing companies more than once. Flying interests changed too and I switched mostly to flying gliders in 1951.

While going with the flow, I was puzzled about why recurring job changes seemed necessary. What was I looking for? Between jobs, visits to an industrial psychologist resulted in myriad tests being sent to Chicago for analysis. The relative strengths and patterns of interests and capabilities were reported in graphic form. The psychologist remarked that interest in adventure dominated my results. In fact, the peak on the graph was the highest he had ever seen. This was an "aha" moment that affected my focus and actions from then on, both in my business career and flying.

My soaring interest became a passion. Successful competitive soaring in Canada and the USA enabled trips to World competitions in Poland, England, Argentina, and then Poland again. These adventures were super but the costs were progressively harder to bear. The Open Cirrus (#3 from the factory) for the 1968 competition in Poland cost \$11,000 – a sizeable portion of that year's salary.

Paralleling soaring activities, my engineering life earned a good livelihood. The two paths almost became one in 1969. This was around the time many Air Canada pilots had reached retirement age (WWII air force trained). This made switching from business management to airline pilot worth exploring. After serious consideration I made the decision to keep work and flying separate; that way flying would remain an adventurous hobby. Soaring through a Golden Age continued.

A heart attack in 1992 while at Lake Keepit, Australia, just months after retiring from business, required a triple bypass operation but TC reinstated my pilot licences six months later – no long term harm – just an underlined realization that one must not procrastinate if reaching personal goals is important. Soaring through a Golden Age resumed.

This winter Kris and I travelled to eastern Australia for two months – soaring at Kingaroy in Queensland, Lake Keepit and Temora in New South Wales, and Corowa in Victoria. We spent a lot of time with old and new friends along the way. We flew the Janus C, Duo Dis-



*The Open Class Breguet 901 I flew in Leszno at the 1958 WGC – photo sent to me by its French owner in 2008, fifty years after the event.*



*Tanking up the Duo Discus XLT that I flew at Corowa, Australia in January 2010.*

cus, Duo Discus X and Duo Discus XLT and came away with some impressions:

- Flying seventy hours in top-of-the-line two-seater sailplanes is a joyful adventure.
- Online "BLIP" maps forecast for each hour of the day estimates of thermal strength, air temperature/dew point lapse rates, likely cloud areas, height of cu bases, etc. These BLIP maps are forecasts whose accuracy certainly varies but they are amazing tools for planning soaring flights. Look at <http://blipmap.walsys.net/NEWSOUTHWALES/blipmap.htm>. Bernie Baer and Morgan Sandercock have built on early work by Dr. Jack. I also use <http://www.xcskies.com/cgi-bin/map/xcgmap.cgi>.
- Record performance flights depend mainly on strong weather, somewhat on pilot skills and, within quite broad limits, are almost independent of glider polar curves. Daily at Narromine, all pilots examined the excellent online BLIP maps. Beryl Hartley, ex-GFA president, current Australian FAI records officer, and long experienced with actual weather conditions in New South Wales, led a discussion of possible flights that could best use the predicted weather.

On 23 December, Kris and I chose a 400 kilometre triangle configured as a 3TP task. Even so, we underestimated the strength of conditions for that day. Our first leg was a slow 108 km north in dry thermals toward cu over the hills. If cu didn't appear on the second and third legs of the task (not forecast), it would be abandoned and we would follow the cu for distance. When cu was reached at the first TP, thermal heights jumped from 7000 feet to just over 11,000. Another surprise – across the rest of the task area cu were blossoming. The last legs of the task, totalling 300 km, were flown at 127 km/h for an overall average of 111.7 km/h. Obviously the task should have been started an hour later.

- The LX 7007 Pro IGC navigation package contains a remarkable thermal centering aid on its primary navigation page in the bottom left corner. A couple of turns after ther-

mal entry, a circle appears and the varying thickness of its rim shows where the strongest part of the thermal is. The circle is fixed relative to the ground (rotates on the instrument page) so that the strongest side of the thermal can be anticipated and a centering adjustment made.

- Turbo engines enable a significant change in pilot attitudes toward cross-country flying. Turbo engine reliability and rapid turn-on lets a pilot push forward on a cross-country flight to lower altitudes with much less apprehension. This noticeably increases the cross-country speed achieved.
- FAI performance flights (tasks) are not readily comparable with OLC (follow the weather) flights. The same day we flew our 400 km triangle task out of Narromine, an ASG-29 pilot flew a north/south 1080 kilometre O&R distance from further south out of Corowa! This highlights the difference between FAI and OLC flights. OLC has stimulated cross-country soaring immensely (good) but FAI attempts have been reduced (not so good). Since OLC flights follow the weather, there is little need for detailed flight planning. FAI tasks require careful planning and are subject to enroute weather variations. Therefore OLC flights are always much longer than FAI flights. Often I have not entered my FAI attempts on OLC – somehow I have felt embarrassed. Perhaps this reflects my old urge to fly competitively.
- The cost of a well-instrumented Duo Discus XLT is nearly US\$250,000 – out of reach to all but a select few clubs. The latest exotic sailplane is certainly not needed to enjoy the sport, but it would be wonderful if one could afford to have any turbo.
- The average age of soaring pilots continues to rise. A majority of the pilots we met were 65+, many being retired airline pilots. At the Joey competition for under-26s, there were only ten participants – not a good indication of future growth in soaring.

In summary, through my forty-four working years, finding an interesting new business opportunity was never a problem and economic ups and downs along the way seemed minor. Parallel to and extending beyond this has been sixty-five years of wonderful flying. The sport of soaring has given me a series of great adventures with the bonus of meeting many others who share the passion. Unfortunately, I sense the Golden Age that began in postwar 1945 is fading fast. As older pilots leave the sport, many are not being replaced by younger ones. Too few are aware that Leonardo Da Vinci got it right when he said:

*"When once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been, and there you will always long to return."* ♦

# flying the *Antares 18S*



**Willem  
Langelaan**  
SOSA

IN THE FALL OF 2006, Jeroen Bakker, a former gliding student of mine from the Netherlands and now a KLM 747 captain, asked me to fly along with him in his Diamond Katana to visit Lange Aviation. We took off from an airstrip in southwestern Holland, crossed the Wester Schelde to Antwerp, then flew via Brussel airspace to Zweibrücken in Germany. We landed near Frankfurt where we rented an old and pompous Mercedes Benz. From there we drove to Zweibrücken – a former RCAF/Canadian Forces base. The former Officers' Quarters is now the local motel. The lobby has photographs of all Canadian fighters that were stationed on the base. Jeroen told me that when he was in the Dutch Air Force they would make whisky runs to the Canadian airbase in a T-33.

**description** Lange Aviation GmbH has its factory and offices in a new facility on the airfield with direct runway access. Axel Lange founded the company in 1999 following his dream to develop an electrical motorglider, the Antares 20E. This was the glider that Jeroen wanted to fly. I was interested in flying the Antares 18S, a pure glider with an 18m wingspan. Axel is a very creative aeronautical engineer with unlimited imagination. When he laid out the wings for the Antares 20E, he already envisioned an 18m version for racing. Wingspan variations are conventionally implemented by adding longer wing tips. The Antares 20E wing is laid out with a "super-elliptical" wing that perfectly blends into a winglet. To shorten the end of the wing would destroy the refined aerodynamics, so Axel developed a wing whose span could easily be shortened or lengthened near the root!

The Antares 20E and 18, the Jonkers JS1, the HpH 304S Shark, and the Diana are original developments and are currently

the only gliders which are not based on the aerodynamic design of older models. As a result, these gliders have superlative performance in climb and glide thanks to their up-to-date aerodynamics. For example, the Antares 18 has a measured best L/D of 53, yet it stalls at a low 35 knots.

Professor Boermans of the Technical University of Delft developed nine different airfoil sections, finely-tuned to one another to provide minimum pressure drag and friction drag. The boundary layer remains laminar up to 95% of the wing chord on the lower surface of the wing. On the upper surface, the boundary layer remains laminar up to 75% of the wing chord. This is the highest value currently available.

But good climb and good glide performance are not sufficient, equally important is the coordination of the controls and the contradictory requirements of stability and agility. Axel understood this and he optimized handling of the glider with an elongated tail boom and a patented mixer for the flaperons. The longer tail increases form drag slightly, but requires smaller rudder and elevator deflections thus decreasing total drag. The roll rate of the Antares 18S from 45° to 45° is only 2.8 seconds.

Assembly of the glider with the custom rigging aid is a cinch. I walk around the glider and notice how well the glider is finished. Lange uses the same excellent finish that lends DG its reputation for high quality. The tail wheel is mounted inside the rudder to give full directional control even at low speed. (Of course, the rudder hinges are reinforced to allow this.) The landing gear is electrically operated with a switch. The canopy has a deep cut-out and stretches far into the nose. The cockpit has ample length for my 6'-3". Seating is comfortable, the instrument pedestal falls mostly within the contour of the canopy thus not obstructing the view.

Safety is a prominent design parameter. The cockpit is reinforced with stringers. The current production Antares have ultrabright LEDs integrated into the fin leading edge. Hey, in a contest other pilots can see where you are! Well, isn't that the point of collision avoidance! The air brake and flap handles are on the left, water release levers are on the right, the trim is on the stick. The landing gear is electrically operated by a switch on the panel.

**flight** After Jeroen self-launched in the Antares 20E, it was my turn in the Antares 18S. We push the glider to the runway where a Jodel is waiting. We hook up, and we are rolling. There is instant directional control. The wing, with its full span flaperons, has no tendency to drop.



The Antares lifts off and it immediately feels trustworthy and familiar. At 2000 feet I release in a 1.5–2 knot thermal. I push the gear switch and soon the red LED turns green to indicate that the gear is up and locked.

Directional and pitch stability are in the most positive sense a non-issue. The rapid roll rate results in requiring only small inputs for corrections in the thermal. Rather than lending a nervous mode to the flight, the agility of the glider fosters smooth flying. Rudder and flaperons are well coordinated. After a few minutes of thermalling there is great comfort in flying the Antares. When the autumn thermal diminishes, I level the glider and make a run for a distant cloud that is developing. I set the flaps negative and accelerate to 90 knots. I spot the Antares 20E and join it in a thermal and we both climb at the same rate. After an hour the seating remains comfortable and ventilation is excellent. I fly back to Zweibrücken and call the tower. Cleared to land, I set up my circuit at

800 feet, and fly the downwind leg. But when I turn base, I see that the ground appears closer than expected, and on turning final, see that the taxiway for Lange Aviation appears near the horizon. I now remember that the runway is 10,000 feet long! I have to keep the air brakes closed for a while, then eventually open them fully, touch down, and roll off the runway onto the taxiway to the hangar with the use of the steerable tailwheel (all gliders should have them!). Flying the Antares was a joy.

**epilogue** Jeroen and I compared our flight experiences, and our notes are nearly identical in their appreciation of the flight characteristics of the Antares 20E and 18S. I later heard that many people who make a test flight are impressed enough to order one. Jeroen joined a Dutch syndicate for the 20E and I am expecting delivery of an Antares 18S. I will be flying a factory Antares 18T at the WGC 2010 in Szeged. I expect to obtain Canadian certification for the Antares 20E, 18S and 18Turbo soon. ❖

### Justin Wills

I HAVE OWNED AN LS-6 FOR 21 YEARS and love it like an old friend. Now that I have no further aspirations regarding World Championships, I would not buy another 15m sailplane as the performance of even the latest designs are so little better than the LS-6 that the cost and bother of change would not be worth the benefits. However, an 18m glider clearly offers significantly better performance, and the option of a turbo. I do not need a self-launching glider and wish to avoid the cost, complexity, weight, and bureaucracy involved.

Other 18 metre gliders available are adaptations of earlier 15m designs with which I am familiar. After my years with the LS-6 I want something different and really new. Therefore, when I heard about the Antares 18, I arranged to visit the factory in June 2006.

**the factory** I had heard good reports of the Antares 20E, but I was still very impressed by the factory and the staff of forty. I sensed an atmosphere of dedication and idealism that reminded me of Glasflügel in Haenle's time. This was reinforced by the quality of the engineering and construction methods, and the attention to detail. Axel Lange seemed to be a perfectionist, and this pervades the whole operation. Because of its comparatively small size and output, the factory aims to provide a bespoke

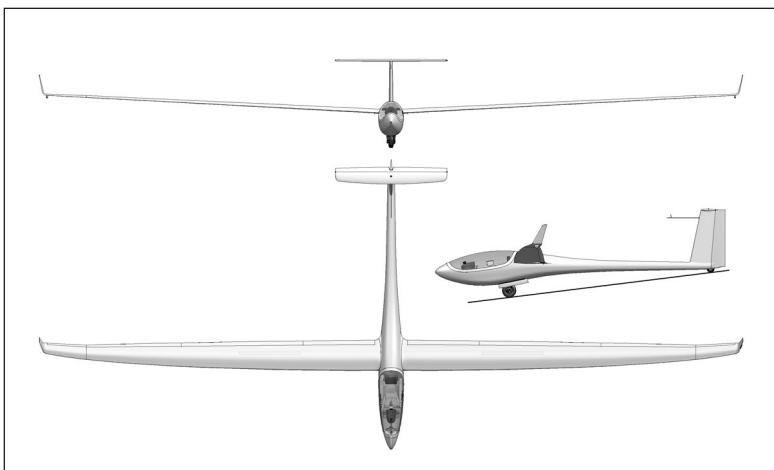
service to all its customers with whom it maintains direct contact (they speak excellent English) and thus can obtain maximum feedback.

**the aircraft** Construction is almost entirely of carbon fibre which should make repairs simpler than more complex composite structures. Thanks to the way the spar is incorporated into the wing, the weight of the inner panels (which total slightly more than 15m) is lighter than my LS-6 despite being a thinner profile. Rigging was easy with the same two main pin system as the LS-6. The outer panels with the winglets are very light and fit easily. The wing tip wheels are nicely designed and look very robust. The tailplane is also very thin, and attaches easily without the need for any tools.

The fuselage is unusually long, and the cockpit provides space midway between the LS-4 and the LS-6. The safety aspect of the design is impressive, and includes an undercarriage designed to collapse progressively under load, and which can be varied according to the pilot's weight. It also incorporates a specially made hydraulic brake that can provide maximum retardation without locking the wheel and tipping the glider on to its nose. I had some doubts about the electro-hydraulic undercarriage retraction system, but it seemed logical when I realized that most aircraft will be sold with a turbo, and will use the same system to raise and retract the engine. It also removes an undercarriage lever in the cockpit and leaves it less cluttered.

**the flight** On the day of our visit it rained until 2 pm. Thereafter the overcast began to break up and very weak cumulus appeared at 600 metres agl with some sunshine. Lift was never more than 1 m/sec.

Knowing this was the first Antares 18, I was struck by the high standard of finish of the cockpit. The view out of the large canopy was outstanding and, very unusually for me, I was immediately comfortable without having done anything special to the seating. The controls were laid out exactly as I like them, with the one exception of the cable release which was in the usual Schempp- ➞ p31



# Flight Training & Safety Committee

## 2009 annual report

Dan Cook, chairman

**Safety 2009** Tragically we had another fatal accident this year. The fact that experienced, competent pilots can fall victim must give us all a wake-up call that we are *all* susceptible to human factors (HF) and must do something about it, now. This is especially important since we had a poor season of weather last summer and this often results in higher accident rates the following year. It's time to think about what you can do for your personal recurrent training, and what we can do collectively in clubs to protect ourselves. Any club not starting with a safety meeting in the spring to discuss human factors and other safety issues is setting themselves up unnecessarily for safety challenges. Most accidents were by experienced pilots in 2009! (See the separate SAC accident report on page 22.) It's a good place to start your spring safety discussions.

Formal SAC accident reports are not being forwarded to SAC. Most information comes by e-mail to the FT&SC from third parties, which I am grateful for. It seems that if we have an accident we don't really care if it happens to someone else. This is a reflection of our safety culture. Pilots – please forward a copy to [sac@sac.ca](mailto:sac@sac.ca).

**National Safety Program** The NSP has been simplified and can be described as hazards/risk assessment/mitigation plan/stakeholders/follow-up. This process is completed at the club level and is a *club* plan, not a SAC plan for clubs. Performance measurement for the NSP is based on SAC getting a copy of the Club Safety Plan or Safety Program Manual. In addition, NSP performance measurement is based on receiving annual safety reports from clubs, copies of accident/incident analysis, triennial Safety Audits, and individual accident reports from pilots. From the SAC Safety report you can see we are not doing too well when we look at these parameters. Some clubs have sent in their Safety Program Manuals. It's a start.

Where does SAC/FT&SC fit in? SAC members and our insurer have demanded oversight to help reduce the accident rate. It's human nature to relax if no one is watching, so we make less of a planned effort on safety matters to have more time to do things we like. Change is uncomfortable and we are mentally hard wired to avoid it. We want clubs to think about what needs to be done in their club and to support the clubs with some process tools. These can be found in the NSP or in more detail in the "Safety Officer Training Package" available on the SAC web site.

The only leverage we have as a cooperative organization is through the SAC president's, zone directors' and club presidents' persuasive capacity to show that volunteer oversight and mutual cooperation is necessary. Without

this we are admitting we need government oversight, which no one wants! Members want the FT&SC to be proactive and provide information and tools, and that's what we are doing. Everyone doesn't have time or money but somehow we must make the effort or nothing changes. Safety in our organization is evolutionary not revolutionary, it starts with small steps at the local level.

**SAC safety seminars** At the 2009 OSTIV Training and Safety Panel (TSP) meeting in Terlet, Holland, it was apparent that countries which had national safety seminars experienced decreases for a few years but then increases in accident rates three years following any cessation of their safety seminars. The spikes in national accident rates prompted Sweden's *Stop Crashing* safety seminars and Germany's *FLY TOP* safety seminars. In Germany the chance of a pilot being killed in a glider is 1:2500 a year, in the United States it's 1:2000, but in Canada it is 1:1000!

The purpose of the SAC safety seminars will be to stimulate safety programs and practices at the club level with a focus on recurrent training. The intention is to introduce the simulator as a recurrent training tool. Our target audience will be both the new and experienced club pilots. This is intended to be a "hands on" participative interactive experience. You will learn from each other. The seminar will review three major points: the National Safety Program processes and systems approach to safety, the national accident situation and the major human factors affecting it, and recurrent training scenarios conducted on the simulator.

The first year of the plan for 2010 is to train the trainers and introduce and refine the pilot seminars at the regional level. In 2011 the goal is to take the seminars to several of the larger clubs at the regional level, with the aim of reaching as many clubs as possible in the third year of implementation. We hope as a result that clubs will be interested in developing their own recurrent training programs in a simulator and all pilots will be able to review emergencies in the off-season.

**SAC instructor course** Last year courses were held in Quebec with Gabriel Duford and in southern Ontario with Richard Sawyer, training only six candidates in all. We anticipate that demand will be higher in 2010 and there is a course planned for Hope, BC in late May and another for Chipman, AB in June or July. Courses for the Ontario region will be identified when clubs have indicated a need and when a club is willing to host. Gabriel will continue to run instructor training at Champlain starting in the spring 2010.

Currently our committee is developing video preparatory ground instruction for the 10 lesson flights of the instructor's course. In addition, we plan to have the course theory material online. John Mulder has volunteered to help with the implementation. Other Class 1 instructors who wish to be course conductors please contact an FT&SC member.

### SSA annual meeting

Members of the OSTIV TSP have been asked to make presentations at the SSA annual meeting. Several countries including Canada will present safety information and programs. Canada will present plans for safety seminars utilizing simulators.

**TC meeting** The FT&SC chairman attended a TC meeting with Arlo Speer, Chief of Licensing & Registration, in Ottawa to discuss *Freedom's Wings* training. Arlo pointed out that the licensing requirement for a disabled person to conduct a preflight inspection was basically what we teach as the preflight walk around. It is understood in gliding clubs that we also conduct more detailed daily inspections and a disabled person may require club assistance for this type of inspection. With respect to the use of pilot assisting devices such as removable hand controls, we did not get a definitive resolution. Arlo had requested that the Maintenance Standards department look into how the issue can be resolved. In the USA, removable hand controls for rudder and other devices are being used within the regulations.

**TC "Aviation Safety Letter"** We have forwarded several articles to the editor to provide some gliding content. Ideas or suitable articles are appreciated and can be forwarded to the FT&SC.

### FT&SC projects

**Airmanship** PowerPoint presentation posted on SAC web site for club use.

**Collision Avoidance** PowerPoint presentation is available for club presentations on CD.

**The Daily Inspection** DVD available this spring.

**Preparatory Ground Instruction** DVD available this spring.

**Approach Scan Technique** PowerPoint presentation posted on SAC web site for club use.

**Instructor Course Flight Briefings** DVD will be available to course conductors this spring.

**Online Instructor Course package** Plan is to develop the package for 2010.

**Instructor Refresher Training Package** Under construction.

**FT&SC blog** Too many issues have been dealt with during the year to list in this report. The results of these discussions have been put into the blog as Q&A and will serve as a quick reference. The blog is posted on SAC Roundtable under Safety.

### L-23 spin procedure

Jean Richard pointed out that the spin recovery procedure in the manufacturer's Aircraft Flight Manual differed from CS-22 standard spin recovery method. In addition, the published Blanik method did not always work. Our committee has discussed the issue with OSTIV SDP & TSP.

The SDP has advised that the L-23 manual is correct and there is no translation error. Accordingly they stated that although desired, no universal spin recovery method is applicable to all sailplanes. The SDP recommends that pilots and instructors follow manufacturers' procedures in the Aircraft Flight Manual/Pilot Operating Handbook (AFM). If pilots experience problems with procedures in the AFM they should contact the manufacturer directly who have the expertise to identify/rectify the problem. Our committee recommendation is to continue to teach the standard method of spin recovery in initial training as it applies to most gliders and, where applicable, follow the AFM if there is a conflict between spin recovery methods.

Note: instructors should be familiar with the AFM spin recovery technique for the two-seater in which they are instructing, and how this compares to the "standard" recovery technique, and that they should know what the effect on spin characteristics is when the cg moves further aft. A light student, for example, may need to carry extra weight when going solo!

### OSTIV TSP meeting summary – Terlet

- National safety reports and accident rates showed that the number of accidents went up if countries did not implement national safety seminars. The more clubs visited and the more pilots participating, the more effective the message and results. If the time lapsed since the last seminar was about three years, then the national or club accident rate started to increase!
- Human Factors Pilot attitude is fundamental to airmanship. Good judgement includes additional elements of skill, knowledge, confidence, and responsibility. We forget to emphasize this in training and focus on skill and knowledge. (Ref: *Redefining Airmanship* by Tony Kern – Amazon.com.) The Dutch presentation on airmanship is available on SAC web site.
- Accident statistics where FLARM was used in congested flight areas such as mountain, ridge, and contest flying demonstrated it reduced accidents substantially (zero for most equipped gliders).
- Scenario Based Training was agreed as a key in recurrent training and to make training more relevant to experienced pilots. Flight exercises were flown to validate national techniques during the session.
- Older pilots are at higher risk if first learning about flight or beginning to fly at an older age (50+). Pilots trained younger who stay current are at much less risk when over 50. See graph/article in the TSP report.
- Synthetic winch cables (*Dynema/Spectra*) are lighter and allow steeper climbs sooner. The lighter cable has problems with cable drift in crosswinds during a launch malfunction. If soil is sandy on field, premature cable wear can result. Synthetic also requires polished drums.
- Simulator use in Sweden and Holland reduces training time in ab-initio training but only a portion of the total training time is done in simulator. *Condor* seems to be the preferred software because it has more detail closer to ground and the glider performance more realistically matches actual aircraft. They use ➡ **p29**



## 2009 ACCIDENT REPORT

In 2009 we have had one fatality and 18 accidents involving 22 aircraft. This is close to the annual average of 19 accidents/1.5 fatal. Not all the damaged aircraft are insured with SAC and some of the accident reports were obtained from CADORS. Clubs are requested to contact the FT&SC with their annual Safety Reports and accident analysis in December so that safety information can be included in the SAC committee annual report that is prepared in January.

Pilots are requested to forward accident reports to SAC within two weeks of the event *whether or not* they are insured through the SAC group plan.

### Accident Summaries

**Fatal** DG-800 motorglider wing struck guy wires in an attempt to land on a road on final glide approach to the airport in a mountainous area. The glider then swung into trees. The motor was extended around 200 feet but not successfully started. The accident occurred mid-week when the club was not very active and a retrieve crew was not available. Experienced pilot.

**Lesson learned** Human factors play a major role in this type of accident. Heuristics (see p20) of consistency, familiarity and scarcity may have played a role. Retrieve crew availability and the inconvenience of a landout have been factors in the past putting pressure on pilot decision making. Attempting to start a motorglider when it is not above a suitable field/height is not recommended.

**Write-off** ASW-20 was performing an outlanding. After turning final at 500 feet a strong downdraft on final approach made it difficult to clear a power line. Pilot elected to make a 180° turn to land on an adjacent field. The right wing contacted bushes causing a ground loop. Experienced pilot.

**Lesson learned** An alternate landing area is part of the checklist for an off-field landing but rarely gets the attention it should.

**Write-off (?)** PA-18 towplane was landing and a gust of wind forced the aircraft to veer off the runway into a bean field. The pilot

applied power to control the aircraft and attempted a go-around but lost directional control when a wing tip dug in and the aircraft flipped over (no SAC report).

**Substantial damage (?)** Three gliders damaged in their trailers in a severe western wind storm (no SAC report).

**Lesson learned** None of the trailers that were damaged had reported being tied down properly? This area is prone to strong winds.

**Substantial damage** DG-505 released after take-off at low altitude and attempted a 180° turn to return to the field. The wing struck the ground in the turn and the aircraft cart-wheeled/ground looped damaging the wings, tail and fuselage (no SAC report).

**Lesson learned** Discussion indicates that the pilot was not strapped in properly at take-off, had difficulty with the airtow and, below 300 feet, elected to release or inadvertently released while adjusting the seat.

**Substantial damage** Grob-102 attempted an off-field landing on a 300 km cross-country flight and was damaged in a hard landing. Cracks were noted in the fibreglass fuselage behind the cockpit and on the tail boom on the left side. Pilot experienced.

**Lesson learned** Pilot fatigue/concentration was listed as a major factor on a long flight. Judging height over a large/flat field was also listed as secondary factor.

**Substantial damage (?)** High winds in southern Ontario damaged a 1-26, a 2-33, and another glider in a trailer (no SAC report).

**Substantial damage** L-13 tail damaged in hard landing on training flight. Student was attempting full air brake landing at low air-speed and instructor took control too late.

**Lesson learned** Instructor and student fatigue were listed as factors. Instructor told the student to "watch airspeed" during the approach. Better instruction is to "increase airspeed" or "lower nose". Allowing only half air brakes for L-13 student rotation eliminates most landing problems.

**Substantial damage** L-33 damaged in hard landing when the glider bounced and the air brakes re-opened to nearly full (no SAC report).

**Lesson learned** There have been many accidents with L-33 hard landings. The majority of these accidents are a result of pilots not following recommended procedure in POH. This may indicate poor type checkout procedure at the club, especially if poor air brake equipped gliders such as the 2-33 are used in primary training or if full spoiler landings are normally taught by instructors.

**Substantial damage** L-19 towplane strikes a plastic picnic table on a grass taxiway. Propeller is damaged. Pilot experienced.

**Lesson learned** Plastic table may have been moved onto taxiway, creating the hazard. High nose attitude of L-19 and many other taildraggers block forward vision and requires the pilot not to taxi in straight lines. Thankfully, no one was sitting at table!

**Substantial damage** Sinus touring motorglider bounced four times on landing, each progressively worse (PIO) and came to rest after sliding on nose. Nose wheel and propeller broken. Pilot experienced on type.

**Lesson learned** PIOs are reported as a likely issue in landing with less than recommended full spoilers. Overconfidence listed as a factor. Distraction with tower communications and flare speed being 8 kts higher than recommended may have been contributing factors. The Sinus POH recommends full spoilers at 50 feet with flaps and flare at 40 kts.

**Substantial damage (?)** Glider landed off-field with the engine pylon partially extended. During the landing, the internal bulkhead carrying the tail wheel assembly was damaged (no SAC report).

**Moderate damage** L-19 prop strike (tips bent) after wind lifted tail while taxiing. Gust reported at 25 kts. Pilot experienced.

**Lesson learned** Pilot currency/recency may have been a factor given the conditions.

**Moderate damage** 2-33 wing damaged on landing. As the glider rolled out onto a taxiway, the left wing dropped and clipped two taxiway lights, causing it to groundloop (no SAC report).

**Lesson learned** Best practice is to land straight ahead on the runway until stopped, particularly if there are runway or taxi lights on the field. Glider should not be taxied off

Notes: Minor Damage <\$1000;  
Moderate Damage < \$10,000;  
Major Damage > \$10,000

the runway unless there are no obstacles, energy is minimal, and club procedures allow.

**Moderate damage** ASW-20 attempted off-field landing on water late in the afternoon and hit rock on the lake shore while beaching. Front hull damaged. Experienced pilot.

**Lesson learned** Human Factors such as fatigue likely played a prominent role in this accident as did mountain downdrafts. (Lack of detail in accident report.)

**Moderate damage (?)** On landing roll, the Grob 103 ran into and damaged a parked 2-32 and a parked 1-34. The Grob 103 suffered a wing skin puncture requiring composite repair (no SAC report).

**Moderate damage (?)** The glider landed hard in a freshly mowed hay field. The undercarriage collapsed and the undercarriage assembly was substantially damaged (no SAC report).

**Minor damage (?)** At the initiation of a spin recovery, the canopy unlatched and swung fully open, breaking the retaining strap (no SAC report).

#### Incidents

- A glider and a 737 pass within 400 feet of each other at 6500 asl near Abbotsford, BC (3 May). No radio contact.
- Student in 1-26 overflew a 1-72 on final and in close proximity to it. The 1-72 made evasive maneuvers to avoid the glider. Radio communication with 1-72 failed. Alternate landing area for glider available.
- Low time pilot flew beyond gliding distance of the airfield and had to make an outlanding. No preparations were made for cross-country or planning for available landing fields.
- Citabria towplane Schweizer hook not closed properly, leads to launch interruption after take-off.
- Cross-country glider joins local glider in thermal within an aerodrome traffic area without a radio call warning on the local airport frequency.
- Glider lands at an airport NORDO due to lack of knowledge how to set the .725 MHz on their radio.
- Cross-country pilots not monitoring or position reporting on 126.7 to FSS/FIC.
- Glider on final lined up with adjacent field rather than runway and made very low turns to reach runway when mistake realized. Air brakes were not seen to close.
- Glider pilot launched with approaching weather and wind gusts almost create an undershoot situation on final.

- Solo student takes off with approaching thundershowers on second solo without instructor on ground supervising. Instructor approving student solo by radio is on own cross-country flight. Local winds reversed and gusted to 20 knots immediately after student took off. Flightline is shut down until storm passed.
- Towplane snags tow rope on fence during approach. Downwind extended too far.
- Grob 102 preflight control check detects ailerons not deflecting evenly. A battery power line to the flight recorder had wrapped around a control rod connected to the control stick, and the wheel brake cable had slipped between the control stick stops on one side.
- Glider got too high on tow at 600 feet and the towpilot released it.
- A licensed glider pilot flew an intro flight with the intention of releasing at 3000 feet agl. The pilot inadvertently released at 2000 feet. The flight continued without further incident, utilizing available thermal lift to provide a normal intro flight experience.
- A near miss at Nationals by two gliders

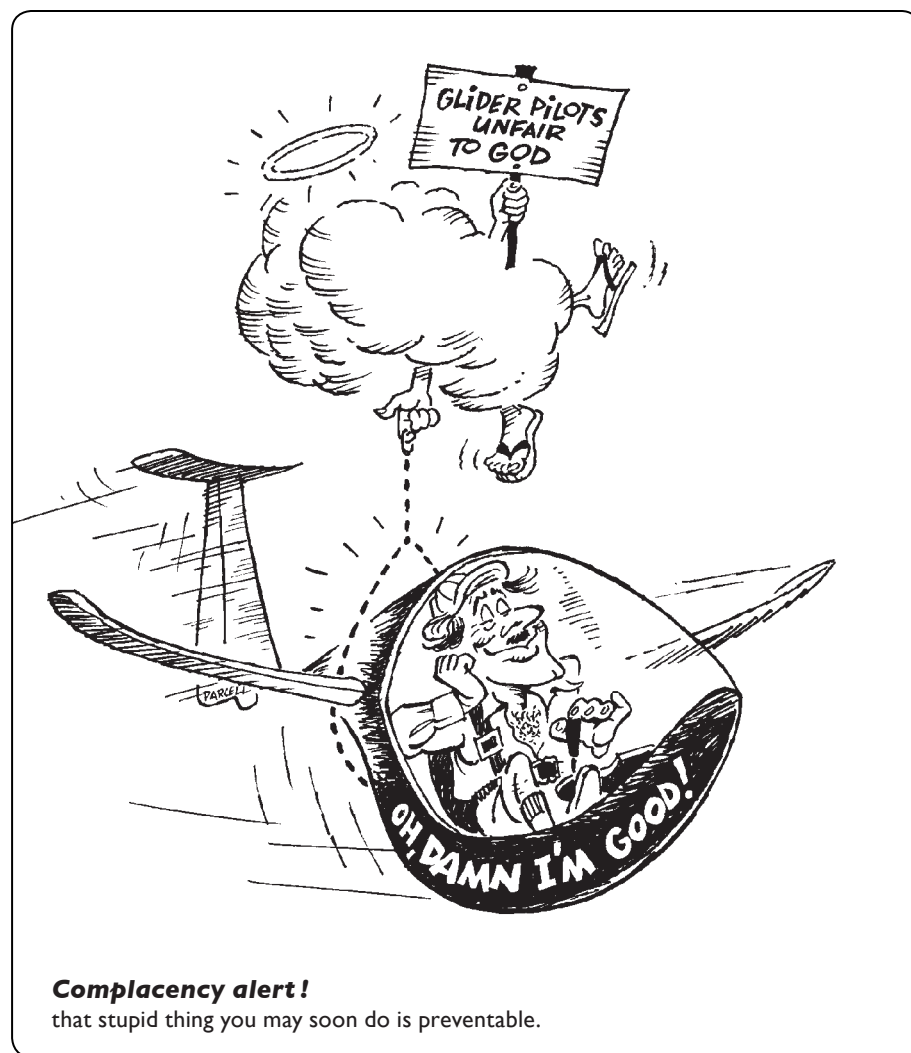
completing contest finishes due to non-standard circuits.

- High g, low altitude turn at Nationals to enter landing pattern. Stall/spin scenario.
- Motorglider departed the runway and experienced an engine failure after take-off and landed straight ahead with no complications.

#### Analysis

In a search for national trends, the most alarming fact is that the majority of accidents involve experienced pilots. This shows our vulnerability. Thinking that accidents happen only to other pilots is putting one's head in the sand. We are gaining knowledge in the areas of human factors and starting to learn more about stress reactions, "heuristics" (explained in next paragraph), the limitations of scan techniques, mental fixation, control errors, and redefining airmanship. If any of these factors are not completely familiar to you, you are not adequately prepared for your next flight.

The majority of our fatalities are stall/spin related and the OSTIV Training Safety Panel



## SAC SAFETY PROGRAM

club status as of Jan 2010

Club	1 Annual Safety Report	2 Incident / Accident Analysis	3 Safety Audit	4 Safety Program Manual
<b>Eastern Zone</b>				
ACES				
Cantons de l'est				
Outardes			Oct 00	
Champlain	Jan 10	Jan 10		
Quebec		Jan 09		
Montreal	Dec 08	Dec 08	Nov 00	
<b>Ontario Zone</b>				
Bonnechere				
Erin Soaring				
Gatineau	Jan 07	Jan 07	Jul 01	Jan 05
Great Lakes		July 08		
Guelph				
London	Dec 07	Dec 07	Dec 09	
Rideau Valley				
SOSA	Dec 08	July 08		
Toronto				
York		July 08		
<b>Prairie Zone</b>				
Prince Albert			Jan 01	
Regina				
Saskatoon		Dec 09	Nov 00	
Winnipeg	Dec 09	Dec 09	Nov 00	
<b>Alberta Zone</b>				
Central Alberta				
Cu Nim		July 08	Dec 00	
Edmonton		July 08	Mar 01	Jun 08
Grande Prairie				
<b>Pacific Zone</b>				
Alberni Valley				
ASTRA				
Cdn. Rockies	Dec 09	Dec 09		facilities HB
Vancouver	Oct 09	Oct 09	Dec 00	
Pemberton				
Silver Star	Dec 08	Dec 08	Nov 00	Dec 07

- 1 Date of last report to SAC (in italic if not for current year). Shows how club intends to mitigate incidents/accident. Should be updated annually.
- 2 Include in club annual safety report or separate. Shows analysis of accident/incident. Should be updated annually (in italic if not for current year).
- 3 In italic if not forwarded in last three years with updated information.
- 4 Manual explains how Safety System will be implemented. (hazards>risk assessment>mitigation)

has identified fifteen scenarios that have got pilots into these accidents. Are you familiar with them all, or do you prefer to wait for the element of surprise? Those fatal accidents not spin related are often heuristic-based. A *heuristic* is a rule of thumb we apply that simplifies our flying, but unfortunately allows us to inadvertently accept higher risks. So as we gain more experience and apply more rules of thumb, we increase the chances of a mishap – we have let our guard down.

In similar accidents to this year's fatal, pilots have fallen into the heuristic traps of consistency, familiarity, and scarcity. Once the decision has been made to commit to a final glide it is difficult to abandon this decision despite new information being available (consistency). Although sink is present, the pilot is optimistic that lift will also be present, as it often is. The more often the pilot has made a marginal final glide the more difficult it is to abandon the habit (familiarity). Safety margins also progressively decrease the closer the pilot is to the airport.

In some cases the pilot creates self-imposed pressure, which increases risk taking. The tendency is to value the opportunity in proportion to the chance that the person may lose that value (scarcity). For motorgliders that value is independence and the ability to avoid a landout. As the possibility of a landout increases and that inconvenience increases, the pilot makes decisions and accepts risks that will help him avoid that lost value. Available landing fields with potential for an engine start or landout are overflowed in the wish to make it back. Accepting a landout after spending up to a quarter million dollars to avoid landouts can help to create that self-imposed pressure. Eventually a pilot may run out of height, options, and luck.

Most of our accidents are during the take-off or landing phase. This year's accidents involved six off-field landings and six (three hard) landing situations. As in 2008, downdrafts and strong winds are being underappreciated. Scenarios such as taking off in worsening weather conditions or applying incorrect techniques (air brake use included) and inadequate safety margins must be avoided. Flying a closer base leg and staying upwind in many of the windy situations would have avoided the problem. In addition, we had two prop strikes due to inattention or airmanship.

We are seeing situations where the launch is interrupted but the pilot does not have a safe plan for what to do next. Have you heard the mnemonic, "are you ready to WROLL"? Do you know what "Options" means in the pre-take-off checklist?

Incidents are also being under-reported. Based on averages seen around the world we should have reported about 200 incidents (10:1). Most clubs see reporting as airing their dirty laundry. We see it as learning opportunities. Again this year, our incidents show lack of preflight planning and preparation and an alarming increase in potential for mid-air collisions. Communication reduces the collision risk, but glider pilots do not seem to want to talk to each other, use ATC, or communicate their position on 126.7 MHz with FSS when on a cross-country. Knowing someone is out there in your intended airspace is half the battle. Airmanship is also a responsibility requiring self-discipline and judgement.

## Conclusion

How can we best tackle the safety challenge? First you have to decide it is important to you; second, you have to do something about it – you are part of the solution or part of the problem. Focus



on recurrent training of skills, knowledge, attitude, and confidence. Be familiar with the human factors training material available. Practise good airmanship. Do your own hazard identification/risk assessment/mitigation plan on your flying skills and develop a personal recurrent training plan. Participate in club and national safety programs. Finally, fly a lot or don't fly at all.

My thanks this year to the clubs that sent in safety information.

**Dan Cook**  
National Safety Officer

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## The all-important difference

The element of risk in flight cannot be eliminated – but it can be greatly reduced with judgement, knowledge and skill ...

To be perfectly safe in the sky, you must make it a tenet of faith that you will not fly higher than you are willing to fall. That is obvious. Flying is the only mode of transporting the human body in which the medium is unable to support the vehicle used while it is in a state of rest.

But to never fly higher than you are willing to fall places a restriction of such proportions on the whole exercise that the total endeavour becomes futile. So the choice is simple: don't fly at all; or fly so well that the odds against falling are reduced to an acceptable minimum.

Enduring the unacceptable was brought home to me with incredible clarity when I had checked out my wife, a low-time pilot, to fly her new Ercoupe. I had flown with her until I was sure that the only reason to continue dual was my own fear. So I turned her loose with words of confidence, plus a clear agreement on the limits of her first flight. She beamed her pleasure at being set free, at having achieved the right to fly her own aircraft by herself.

I watched with pride, and a sinking heart, as she taxied to the end of the runway. The trepidation grew as she did her run-up with extreme care, moved at a snail's pace into take-off position, and hesitated as she made her final checks. I wanted to run out to the runway and demand we do one more circuit. Too late! The engine opened up and the little monoplane gathered speed, bounced slightly, and lifted off. She was beyond any help but her own now; committed to a project that must be carried through, alone. Neither radio, nor prayer, nor worry would

replace what she knew, and how she would use it.

And suddenly I was calm. She had made the commitment that every pilot makes every time the wheels leave the ground. And as she lifted higher than was survivable in any fall, I shared her joy in challenging this exhilarating, frightening, and endlessly variable medium. Not even when she turned to land, holding off to clear the wires near the threshold, nor even as the wheels reached tentatively for the runway and safety, did my preflight fears reassert themselves. Nor was there relief when she slowed to a stop. Just joy at the look on her face, and pride in shared accomplishment in the great challenge she had survived, alone.

Too big a reaction to a flight in a mere Ercoupe? Ah, but it was done alone! And the more complex and crowded life becomes, the fewer the opportunities to take responsibility for oneself, alone. So every opportunity is unique, and should not be accepted lightly, not forgotten quickly.

Alone. Is that the magic casting its spell on all flyers? There is a law of physics which makes flight practical. The laws are immutable in any set of circumstances – as they are in land and sea travel – but the circumstances vary in confusing profusion. Thus, the right response also changes endlessly, sometimes in hardly finite ways and at other times so dramatically as to make the response an experiment.

When things get ahead of the motorist, he often can slow them down, or stop them altogether by coming to rest. When elements tend to overwhelm a sailor, he can perhaps heave-to, take in all his canvas, batten down his craft, and wait, even if in terror.

No such escape awaits the flyer. He usually has made all his mistakes before he begins his journey. When things go wrong there is no roadside stop along his airway at which to rest; nor can he furl his sails without sinking forcibly to the bottom of the sky. Due to the speed needed for flight, things that go wrong seem to multiply by the "square". Fix the first one immediately or it becomes two, fix both or it becomes four; then sixteen – until the only way out is an emergency landing with broken wings or worse.

How often we have cried, "Dear Lord, please get me out of this, and I'll never climb as high again." And how often, believing in His indulgence, have we again ascended into the very thin air, but less innocent, more preplanned, less ready to risk falling, more aware that God

has other things to do than cradle brave flyers. Brave flyers get into trouble; some over and over again until, still brave, they run out of luck.

To the uninitiated, it seems that those flyers who fly through mountains are brave – as are those who skirt tumultuous storms – and those who loop and roll in apparent abandon. But most often those flyers, because they know they are deliberately increasing the risk, endlessly reduce the odds by endless practice, and you'll find them as listeners in many hangar flying sessions.

Learning, not talking. Separating the bravado from the fact. Making internal judgements on what should have been done, what they will do if or when faced with similar circumstances. Speaking rarely, the responsibility of passing along advice that may lead a fellow flyer to safety or destruction one day, heavy upon them.

One such pilot was extremely irritated to be called an incautious pilot. Affronted, in fact. He was skilled in weather flying, aerobatic flying, twin-engine, glider, and helicopter flying. He flew extremely low air shows, and in formation with a chosen few, would put his wingtip within hand's reach from the other cockpit. He did a hundred things most pilots would not dream of.

Yet he was never known to take off without the most meticulous preflight of his aircraft, without checking the weather in detail, without previewing his route, without knowing where every line of retreat began, and stopped. He was careful to fly within the limits of his own exceptional skill, knowing that these change from day to day through human frailty. He was careful to fly within the capabilities of each aircraft, knowing these to be firmly set by physical law.

He understood fully the axiom of never flying higher than you are willing to fall – *unless* you accept the necessity of doing everything in your power to prevent that from happening and of never being seduced by the pride of vanity. Thus, despite the exceptional flying maneuvers he performed, he was a prudent pilot.

But if, despite everything, chance should one day overcome the strength of his mount, or surmount the depth of his skill, he will have fallen intelligently, accepting the challenges imposed by the environment he chose to face alone, armed with judgement, knowledge, and skill. That's the all-important difference.

**Douglas Murray**

## Incident report ~ ye olde Blanik flap/spoiler mix-up

As a post-solo student, I was enjoying practice at half-flap thermalling the Blanik. I stayed close to the airfield due to occasional high sink rates in the area. Take-off was on runway 07 with a cross-wind out of the north. After flying close to an hour, I was just east of 07/25 at about 1100 feet agl. I checked the wind, which appeared to be essentially the same as on take-off. I headed for the high key area in preparation for doing a left hand circuit for 07, and completed my SWAFTS check, keeping my hand on the spoilers.

I started downwind, and made my radio call declaring my intentions, then grabbed what I thought were the spoilers but did *not* visually confirm the handle. During the downwind, the sink rate increased to 6 knots. I kept the circuit in close, and had the aiming point selected abeam the left wingtip at 500 feet. I felt well under control at that point. I recall thinking that I had to be careful not to use the spoilers until I was absolutely sure I was going to make my aiming point. I turned 45 degrees onto base, with the second 45 degrees fairly quickly after that. I was feeling good at the onset of the final approach – speed was good, and after lining up, I could see there was enough altitude.

I pulled on the “spoilers” but did not see a large difference in the glide angle, although it did steepen. Coming in high over the start of runway 07, I thought I must be catching a bit of lift. The ground speed seemed higher than it should have been, and I was not coming down at the rate I expected. The end of the runway was coming up fast. I realized I would probably fly through or over the fence at the east end of the runway if I didn’t do something right now. I looked very quickly to check the wind, and did a slip into the wind trying to lose additional altitude.

I finished what can best be described as a “Non-Low Energy” landing, and it was not pretty. I flew onto the runway at a higher than normal speed, grabbed the brake, and stopped quickly. There was only about 150 to 180 feet of runway remaining.

At that point, I still hadn’t realized that I had mixed up the flap and spoiler handles. Soon, a comment from the CFI mentioning he had not seen any spoilers made me realize what had just happened. I was very lucky this incident had a good ending. It was unpleasant thinking that I had made such a stupid mistake, and the outcome could easily have been worse. Other notes from this experience:

- Taking my hand off the spoilers to make the radio call, and not looking at the handle

when I grabbed it again is the reason this incident occurred.

- For most of the past hour, I had been grabbing the flap handle over and over as I practised thermalling. Paying close attention to the sink rate on downwind diverted my attention and I grabbed the handle I had been using recently. However, I did not *visually* check the handle.
- After landing, I noticed there was a slight wind change that made the landing slightly downwind. This would have accounted for the higher than expected groundspeed.
- I could have revised my circuit to a right-hand and landed on runway 32, which would have been more into wind, but that would not have addressed the flap/spoiler mix up.
- The stress level definitely increased in the last 15 or so seconds of the final approach. I was intently focused on landing safely, and dealing with a situation that was getting worse. Regardless, I am most disappointed that I didn’t heed the symptoms of a flap/spoiler mix up during the final approach. They were all there: glide slope not changing as expected, handle was harder to pull than usual and, excessive float in ground effect.

The biggest lesson learned (and burned into my memory) is ALWAYS visually check the handle you are using.

## the good approach

Getting the approach and landing right can bring a satisfying end to a flight, but all too often it becomes simply a means of getting the glider back on the ground. I still find a nice approach and landing, executed safely, stopping exactly where I want to roll to a halt without using too much wheel brake is a most enjoyable experience. I find it enjoyable because doing is, well, *hard*!

What I would love every pilot reading this to do after their next flight is to ask themselves four questions:

1. Did I land in the intended place?
2. How much airbrake did I use; was the approach too shallow/steep for comfort?
3. Did I get a bit too close to obstacles on the ground (see below)?
4. Did I retain appropriate speed until the roundout?

**Mike Fox**

BGA National Coach

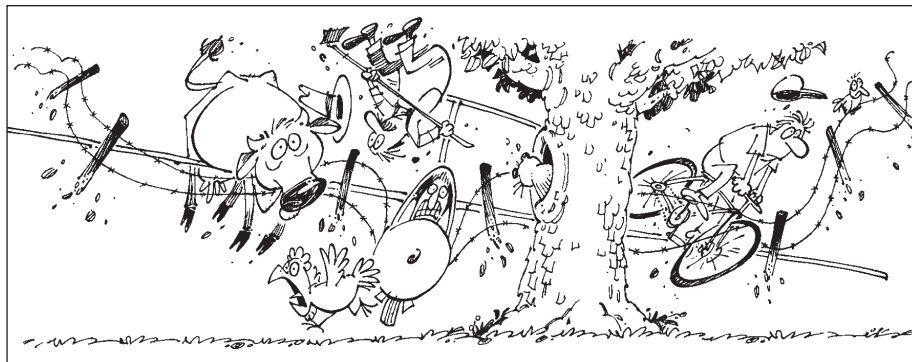
*One’s experience level is immaterial, if you are not regularly reflecting on your flying performance, you risk all the hazards that attend a complacent frame of mind.*

Tony

## a top-10 list

As part of “Options” in the pre-launch checklist, pilots should consider the top ten reasons to initiate a release before or during the takeoff. Common sense? So many accidents have occurred by not releasing in time. And, *before* the launch, have a plan for what and where you go after a premature release from less than 300 ft, over 300 ft, and over 500 ft. Factors affecting the planning decision include wind speed and direction, obstacles assessment, landable area assessment, and launch interruption assessment. Release if:

1. Directional control lost
2. Wing drops on ground
3. Overrunning tow rope or wire
4. Slack in rope
5. Towplane or winch loses power
6. Not airborne by \_\_\_\_ (a landmark allowing room to stop on runway)
7. Obstacle appears (pedestrian, vehicle, aircraft, etc)
8. Canopy unlocks or opens
9. Lose sight of the tug
10. Any safety concern (not sure tail dolly is off, bee in cockpit, etc, etc.)



## Sporting committee report Jörg Stieber

**IGC plenary meeting** I attended the IGC meeting in early March '09 in Lausanne. The meeting minutes are posted on the FAI website <[www.fai.org/gliding/system/files/igc\\_minutes2009.pdf](http://www.fai.org/gliding/system/files/igc_minutes2009.pdf)>. The highlights were:

- Sporting Code, Section 3, Annex C, 2009 edition was approved. This section contains provisions for commercial, off the shelf (COTS) flight recorders to be used for badges. The document is available at <[www.fai.org/gliding/system/files/sc3c\\_2009.pdf](http://www.fai.org/gliding/system/files/sc3c_2009.pdf)>

- Canada supported the USA bid to host the 32nd World Gliding Championships for 15m, 18m and Open Classes in 2012. The bid was accepted over the competing Australian bid 17 to 15 votes. The Worlds will be held in Uvalde, Texas, 4-19 August, 2012. It will be much more affordable for Canadian competitors to compete in this WGC in North America where they can use their own equipment. We hope to see a strong Canadian team in Uvalde with a full complement of pilots in all classes. The last Worlds in North America were held in 1991.

I had a good discussion with Brian Spreckley, the administrator of the International Pilot Ranking List. Under the present IGC sanction fees of at least €300 per class, Canadian participation in this ranking list has not been feasible since, with the typically small number of competitors in our Nationals, the cost per pilot would discourage participation. Brian advised that the sanction fee policy was being revised to accommodate countries having small competitions. He also offered to waive the sanction fees for our first year of participation. We have since taken advantage of the offer and entered the results of the Canadian Nationals 2009 which has significantly improved Canada's national ranking.

Going forward, the IGC has announced a revised sanction fee policy. Under this policy, the sanction fee is €4 per pilot with a minimum of €100 per contest. The fee structure makes it quite feasible for Canada to participate in the International Pilot Ranking List on an ongoing basis.

I will be attending the 2010 IGC meeting 5-6 March, again in Lausanne. Agenda and supporting documentation is available at <[http://www.fai.org/gliding/igc\\_plenary10](http://www.fai.org/gliding/igc_plenary10)>.

**Junior Worlds** Chris Gough competed as the only Canadian contestant in the Club Class Junior World Championships 21 June to 7 July in Räyskälä, Finland. Chris' participation was partially funded under the SAC funding policy established at the 2009 SAC AGM. It was a tough competition over nine days. Chris finished 34th out of 46 competitors with 70.6% of the winner. Details in <[www.jwgc2009.fi](http://www.jwgc2009.fi)> and *free flight* 2010/1.

**Canadian Nationals** For a second year in a row, the club which was scheduled to host the 2009 Canadian National Soaring Competition withdrew its commitment to do so. The Sporting committee sought an alternative host and, thankfully, SOSA Gliding Club agreed to step up and put on a low-frills contest. Scheduled to take place 1-10 July with practice days 29 and 30 June, the contestants were rewarded with five good contest days.

The contest was well attended with 20 pilots split into two "hybrid" groups. In accordance with recent trends in Canada, there were insufficient numbers to support the minimum of five required to run individual IGC classes and the pilots voted to adopt two classes, "FAI" and "Club". FAI class was a combination of 15m and Standard, handicapped and allowing water ballast. Several pilots who had planned and practised to fly in 18m generously agreed to compete in 15m configuration. Club generally followed IGC Club class rules, handicapped and no water ballast. One aircraft that fell outside the Club class performance range was allowed to participate in that group.

The complete results of the 2009 Canadian National Soaring Competition can be found at <<http://2009nationals.blogspot.com/2009/07/day-5-scores.html>>.

The winners in the FAI class:

1 David Springford, F1, LS-8	4556 pts
2 Jerzy Szemplinski, XG, ASG-29	4526 pts
3 Willem Langelaan, ET, ASW-27	4417 pts

The winners in the Club class:

1 Anthony Kowzowicz, HK, Jantar	4336 pts
2 Derek Mackie, TT, Mosquito	3704 pts
3 Alf Marcellisen, TW, ASW-20	3699 pts

**Seeding list** Also discussed and voted on at the mandatory pilot meeting was how

to handle seeding list points for the Club class. Since the FAI class was not open to all participants and there were strong competitors in the Club class, it was agreed that the Club class would be awarded points in that IGC category. CAS and SAC Sporting committee members present agreed to review the seeding list rules in the coming season. The seeding list is available at <[www.sac.ca/index.php?option=com\\_docman&task=doc\\_download&gid=438&Itemid=73](http://www.sac.ca/index.php?option=com_docman&task=doc_download&gid=438&Itemid=73)>.

**Canadian Nationals 2010** After a successful shakedown contest on site in 2009, the hosting club has announced the dates and location for the 2010 Canadian National Soaring Competition. The contest will be held in North Battleford, SK. The airport has proven to be a well-suited venue to hold a National contest. 13-14 June are scheduled practice days with 15-25 June being the competition dates.

### World Gliding Championships 2010

The 31st WGC for 15m, 18m and Open Class will be held in Szeged, Hungary from 24 July to 7 August. Canada will field the following team:

Dave Springford – 15m class, ASW-27  
Jerzy Szemplinski – 18m class, ASG-29  
Willem Langelaan – Open, Antares 18m  
Team Captain – Jörg Stieber

The preliminary registration has been completed and arrangements for gliders and accommodations have been made. Fund raising is under way and is yielding encouraging results. The expected costs are \$15,000 to \$20,000 per pilot, including crew, depending on whether or not glider and/or vehicle rental is required. We will strive to keep everyone well informed through a team blog. The blog is already active and will first chronicle the preparations leading up to the team's departure and then feature daily reports about conditions/results/events from the contest site: <<http://wgc2010teamcanada.blogspot.com/>>

**OLC Canada** The Online Contest Canada continues to be popular among Canadian pilots. Participation is at a 3-year high. The total number of flights as well as the total distance scored have seen a rebound from 2008. See results below. The Sporting committee congratulates Ian who has achieved the highest score of a Canadian pilot in the OLC North America list.

**Contest Letter registry** Thanks to Chris Gough for taking over the Contest Letter Registry. ➡ **next page**



## Policies and rules updates

**OLC Canada** A discussion was initiated on the Roundtable regarding some discrepancies between the OLC Canada Rules and the minimum requirements for the SAC 200 Trophy. Upon review, it was agreed that the rules were due for an update. The committee has completed a comprehensive rewrite and the new version is ready for publication.

While there were numerous format and editing changes for clarity, the primary change is in the definition of a Novice pilot in terms of the OLC. In essence, a Novice pilot is defined as one having less than 200 hours P1 at the start of the OLC season. This has been harmonized with the SAC 200 Trophy requirements and unclear wording relating to 300 km flight limits have been deleted. All flags have been re-set.

Pilots who satisfy the requirements and want to compete in the Novice category need to reconfirm their Novice status when they register for the 2010 OLC season. The rules should be posted shortly.

**COTS flight recorder approval** The SAC approval procedure for COTS flight recorder units is available on the SAC Documents/Badges and Records page at: [www.sac.ca/index.php?option=com\\_docman&task=doc\\_download&gid=441&Itemid=79](http://www.sac.ca/index.php?option=com_docman&task=doc_download&gid=441&Itemid=79). So far, SAC has not approved any COTS units and has not received any approval applications.

### SAC supported international contests

An expense policy is being drafted to define the eligibility criteria, both in terms of eligible pilots as well as eligible expenses, under SAC's policy (motion AGM 2009) to support Canadian competitors in World level competitions. The project is ongoing.

### Seeding procedure update

A project is currently under way to clarify or possibly redefine how the seeding list is calculated and used. A draft has been produced; however as yet there is no agreement on the scope of the project. Lively



*Tim Wood's front cover is a fine response to the last issue's request for retrieve stories – lots of human interest in this photo. A new season is here; you may have a retrieve story too. Don't be shy.*

*Richard Avery (far left in photo) landed successfully in a bean field close to home at York Soaring. The I-26 was manhandled back to the field along the Township road and then the club's driveway, Walter's Way (named for the club's illustrious founder, Walter Chmela). A swarm of willing volunteers was pressed into action to get the ship back home. Some were student pilots on camp at the field, others were instructors and even one towpilot.*

discussion continues. The project is ongoing – watch for discussion on the Roundtable.

### International events

- In June 2009, the *World Air Games* were held in Torino, Italy, featuring ten air sports including sailplane racing [www.wag2009.com/eng/](http://www.wag2009.com/eng/). The gliding competition was in the Grand Prix format and was broadcast live over the internet. Announcements were made on the Roundtable and other media to alert Canadian pilots to the event.

- The *3rd World Sailplane Grand Prix* was held in January 2010 in Santiago de Chile. Again, live internet tracking with real time commentary made it a fascinating event to watch <http://www.grandprixchile.org/>

### International competition calendar

A complete list of upcoming international

competitions, along with the latest record claims, is posted on the IGC web site at [www.fai.org/gliding/](http://www.fai.org/gliding/).

**Thanks** I want to thank my fellow Sporting committee members Walter and Derek for their support, Tony Firmin for looking after the OLC and Ursula Wiese for continuing to look after the *Book of the Best*, maintaining the historical record of competitions, trophy awards and records.

Jörg Stieber [joerg@odg.com](mailto:joerg@odg.com)  
Walter Weir [2waltweir@gmail.com](mailto:2waltweir@gmail.com)  
Derek Mackie [iswdesigns@rogers.com](mailto:iswdesigns@rogers.com)

### Insurance committee report Keith Hay

If you have questions or comments regarding the insurance plan, please use the SAC Insurance committee address, [insurance@sac.ca](mailto:insurance@sac.ca), as it is usually the quickest and easiest way to reach me. I do try to reply back to people within a couple of days, though it sometimes may take somewhat longer depending on holidays and more complex issues.

I want to thank all the club treasurers in distributing and collecting the renewals for their club and private owners. Their work helps ensure that both insurance and SAC mem-

OLC Results	2009	2008	2007	2006	2005
Number of competitors	264	248	246	193	180
Total flights scored in Canada	2636	2226	2765	1942	1952
Total km scored in Canada	596,000	407,691	596,000	416,358	423,011
Highest total km by a pilot (2009 - Ian Spence)	13,529	18,150	28,429	30,546	–
Highest total km by a club (2009 - Canadian Rockies)	71,959	87,103	127,425	116,846	–

bership are both processed and kept as close in sync as practical. Thanks to all.

As you can see, our loss ratio moderated slightly from 2009, but still remains relatively high. Both 2008 and 2009 show the impact that one or two significant accidents across the country can have on the plan as a whole. I suspect we will continue to see this as the average hull value of our ships continues to increase, particularly the number of \$100K+ ships. This is in part due to clubs modernizing their fleets, always a great thing to see!

SAC continues to apply a "Claims Surcharge" to those with claims in the last 3 years. This amount is in turn rebated to all owners with a claims-free record in the form of a No Claim Bonus at each renewal. For 2009 the plan rebated a total of \$5444 to those owners with a claims-free record.

As I write this report in mid-February, we are in the process of starting to ready "Requests for Proposals" to send to interested underwriters in the Canadian market. Once we have received responses, they will be evaluated and we will finalize any changes for the 2010 plan. While we are hoping to see no significant change in rates, this may prove to be challenging given our 96% hull loss ratio and 63% combined. We plan on having the plan renewal complete for the SAC AGM in Silver Star 27 March. Hope to see you there.

The 2010 policy year will run from 31 March 2010 – 31 March 2011. Renewal packages this year will be sent out to each club treasurer or contact in the last half of March in advance of the 1 April renewal date. Private owners should contact their club insurance contacts

if they have not heard prior to 1 April. As in previous years, coverage will be extended for the month of April to renewing owners to allow for the renewal process. While this standard extension does provide coverage, it is important to send your renewal to your club contact as early as possible.

We have had several instances the last couple of years where we have had to send out reminders to aircraft owners several months into the policy year. Late payment of your premium can result in your coverage being called into question and a claim potentially being denied by the insurance company.

#### Your SAC Coverage – major points

**Glider purchases** We have had several cases over the last couple of years where confusion occurred with the purchaser of gliders. Responsibility for insurance coverage should be included in the purchase agreement. We have had instances where the purchaser was not sure of the coverage they had on their glider as well as instances where the seller may wish to "transfer" the existing insurance coverage to the buyer. The purchase agreement should spell the effective date of transfer, the levels of coverage in place, who is responsible for notifying the broker and any price adjustment agreed upon between the buyer and seller. While there is no charge to transfer the SAC insurance, we need to be notified of any ownership and or lease changes. Alternatively, the seller may choose not to transfer coverage, in which case they contact us and are entitled to a pro-rated refund of premiums. The purchaser must also then arrange for insurance coverage for their new glider.

While we are all aware of the insurance premium we pay at the beginning of the year, what exactly are you buying with that premium? While this report touches the major points, both the plan coverage summary and policy document are available from your club treasurer. It should be required reading for all club executives and private owners. This helps to ensure that not only do you know what is being provided, but also what your responsibilities are. Claims reporting guides are also available to keep in your aircraft should an accident occur.

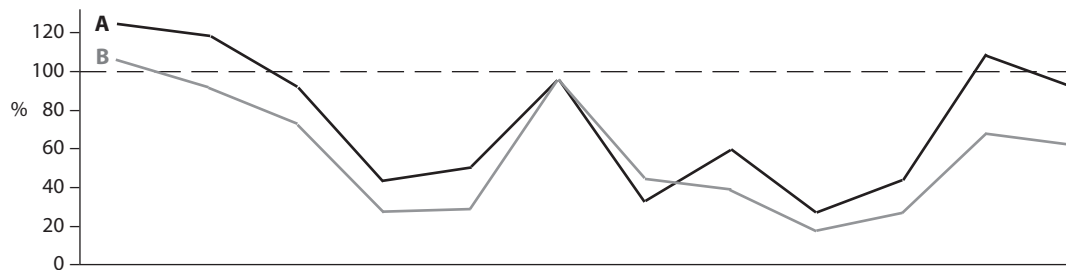
**Hull liability** This is the coverage that covers most accident damage to your aircraft. It covers the aircraft and its normally installed permanent equipment. You purchase a specified value of coverage for each aircraft that should reflect the value of the aircraft and its normally mounted equipment and instruments. This does *not* include your glider trailer. It is not a good idea to "under-insure" your glider. One way to view this is that the insured value should be an amount that you would be happy to receive if your glider suddenly disappeared from your trailer.

There is a \$500 deductible per incident. There are options to increase the hull deductible to either 5% or 10% of the hull value, providing a decrease in the premium. Many other aviation policies and recent proposals have higher minimum deductibles.

**General aircraft liability** This coverage provides payment in the case of damage to third party property, and bodily injury to third parties that may occur involving your aircraft while it is "in motion". Claims in this area are potentially HUGE. Imagine the medi-

### SAC INSURANCE HISTORY, 1997 – 2008

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Insured Clubs	37	39	41	38	35	33	36	32	29	29	23	23
Total Aircraft	411	359	376	306	276	351	368	337	336	313	288	295
Hull Value (\$M)	10.15	10.55	10.89	9.49	8.56	13.35	13.60	12.7	12.3	11.7	11.5	12.0
Hull Loss Ratio (%) <b>A</b>	127	120	92	42	51	97	32	60	26	42	110	96
Total Loss Ratio (%) <b>B</b>	108	92	73	26	29	96	45	38	16	27	68	63
No claim bonus paid (\$)								9659	7632	8400	6585	5444
Claims surcharge (\$)								8261	9276	8222	4357	9120



cal bills should a bystander or passenger be injured while operating your glider. Coverage is available in \$1M and \$2M amounts per aircraft and, unlike some policies we have reviewed in the past, the complete amount is available regardless of the number of people involved or type of expense. There is no deductible for this coverage.

Minimum coverage on all private gliders is \$1M per seat. Minimum liability coverage for club aircraft is \$2M per aircraft. One of the primary reasons for the higher club limit is that past club liability settlements have exceeded \$1M at least in part because clubs are seen to be held to a higher standard of "duty of care" than private owners.

**Airport premises liability** Coverage for all clubs in the plan is mandatory. This covers airport premises and operations other than aircraft to a liability limit of \$2M. This coverage provides important protection to clubs for damages and injuries that could occur on their airfield (owned or leased), which do not involve aircraft. Note this does *not* provide liability coverage for your clubhouse or other facilities. This coverage in the general marketplace typically costs a minimum of \$2500. The premises liability coverage also provides \$100,000 of coverage for "Instructor Errors and Omissions".

#### **Claims service and legal representation**

The insurance company provides claims adjustment and legal representation for all claims. Legal costs of defending a claim, particularly liability claims, can be substantial and are paid over and above the coverage limits purchased. We continue to have an excellent level of claims service from our insurance company.

Here's hoping for a fun, challenging and safe year of flying for everyone in 2010.

### **Vision for a 13.5m class**

*The text below has been extracted from the proposal put to the delegates to the recent IGC Plenary meeting in Lausanne.*

It is proposed that a 13.5m racing class be created to allow all eligible gliders and motorgliders with a wingspan of 13.5m or less to participate in IGC international competitions. This new racing class will absorb and replace the current FAI World Class at WGC and international competitions. Proposed changes are to be effective as of 1 April 2014.

This proposal affects the Sporting Code, replacing the definition of the World Class in

section 6.5.5 with the definition of the 13.5m class. *Note: the PW-5 World Class glider will soon lose its IGC-mandated "lock" as the small glider class, which is the reason for a replacement class. The PW-5 hasn't met the hoped-for goals for which it was originally established, and the intervening years have seen a notable growth in light-end designs. If you want to read about how the World Class was originally conceived and how the design competition went, look to Free Flight articles in the 1989/1, 1991/4, 1993/1 and 1995/3 issues.* Tony

Reasons supporting the proposal:

- 13.5m provides a sufficient and clean separation from other existing classes while covering a large fleet at the light-end of soaring.
- The 13.5m class will provide a "racing home" in IGC for many gliders and motorgliders at the light-end that currently do not have one.
- The 13.5m class will significantly enlarge participation in IGC events from the light-end of soaring.
- It will fill a void at the light-end of soaring, bridge the gap with the light sport aviation, and draw new membership.

The vision is for a class of small, agile, low-cost, easy to rig and transport racers with reasonable performance that will provide the thrill of racing to those who do not have access to the latest models or the latest and expensive designs. The vision is a racing class that will attract and retain within IGC the many gliders and motorgliders at the light-end of soaring that currently do not have a "racing home". This includes the pure gliders that were contenders for the single-design world class, the gliders and motorgliders of the class DU under IGC SC3, and those "soaring" motorgliders of the class R.

A span of 13.5m or less provides a clear and sufficient difference with the other FAI racing classes while covering a vast majority of the light-end fleet. Through fair rules and healthy competitions at the international level and at the national, regional and grass-root levels, this new racing class would offer membership growth and would strengthen entry avenues into the IGC from the light-end segment of soaring.

If the recent trend experienced in many countries over the world toward light sport aviation and its reduced bureaucratic burden is any indication, the popularity of a new aviation class will be strongly tied to grass-root activities in individual countries. The migration of the sport aviation membership today is clearly toward less constraints and bureaucratic regulations, and toward more

openness and flexibility of participation opportunities.

Countries have widely different light-end fleets, some with large numbers of older light-end models, some with rapidly growing fleet of the newer generation of small motorgliders. In establishing a new class, it may be essential for viability to "cast the net as widely as possible" and foster maximum initial participation opportunities, particularly from grass-root movements of pilots and gliders of widely differing age, type, and performance.

### **Continental records introduced**

These days most record flights are set in lee waves of the Andes. Because of the high costs involved, relatively few pilots now have the chance to fly a World record. The primary aim of the IGC in approving the idea in principle is to ensure that international record flying stays attractive.

- Record flying should be open to a wider group of pilots at less cost.
- Continental records are expected to contribute to the participation of gliding on all continents.
- Records in thermal flight will be possible again.

It is likely to take some time to sort out problems such as setting minimum record levels given the many existing national records within, say, Europe.

### **FAI Lilienthal Medal awarded to Ross Macintyre**

The FAI created this medal in 1938 and is the highest award offered by the IGC. It may be presented annually to a glider pilot who has rendered eminent service to the sport of gliding over a significant period of time, and is still an active glider pilot.

At the IGC annual meeting on 6 March, the medal was awarded to Ross Macintyre, the chairman of the Sporting Code committee since 1999.

A New Zealander now living in the UK, Ross began his work with the Code in 1970 as the NZGA Awards chairman. He saw areas needing improvement and his suggestions resulted in a major upgrade to the Code in 1990 with more accurate English. His long history with Code intricacies makes him the first person to go to when questions of interpretation arise. It is a pleasure to work with him on the committee, and I am delighted to see him get this well-deserved award.

**Tony**



## AVV Champlain

La saison 2009 a été un franc succès. Tout d'abord, grâce à des travaux de drainage, il a été possible de commencer à voler dès la deuxième fin de semaine d'avril, au grand bonheur des membres puisque la météo a été généreuse au printemps. Cette météo nous a ensuite fait faux bond au plus chaud de l'été, en pleine période de vacances, mais ce ne fut que passager, l'automne nous réservant plusieurs fins de semaine intéressantes.

**Les nouveaux membres** Chaque année, des membres nous quittent. Il faut bien les remplacer. Au début de la saison, l'arrivée de nouveaux membres se fit au compte-gouttes, mais la situation s'améliora rapidement par la suite de sorte que nous avons dû envisager de limiter les nouvelles inscriptions. Avec 65 membres actifs à la fermeture, la taille du club a atteint son niveau optimal.

**L'école** L'AVVC a servi de banc d'essai pour la mise au point du programme de formation en français. Des changements ont été rendus nécessaires suite à l'adoption de nouveau matériel pédagogique, en accord avec le FT&SC. Ce nouveau matériel a été bien accueilli par les instructeurs et les élèves et les résultats sont encourageants. Et toujours au niveau de l'école, l'AVVC continue à démontrer son leadership en offrant une fois de plus à tous les clubs de la grande région de Montréal un stage de formation théorique pour les élèves pilotes.

**Le volet sportif** La participation à la compétition OLC a été très bonne. Compte tenu de sa taille et de sa composition (une population jeune et trop peu de retraités pour faire tourner la plate-forme tous les jours de la semaine), le club s'est très bien classé au 4<sup>ième</sup> rang. Du côté de la FAI, quelques membres ont réussi certaines épreuves, durée, gain ou distance. C'est un progrès sur les années antérieures car ces épreuves étaient un peu tombées dans l'oubli.

**Le matériel volant** Plusieurs membres ont eu l'occasion d'apprécier l'ASK-21 démonstrateur, mis à notre disposition pendant une semaine en août. L'événement a ouvert la porte à la réflexion et à des discussions, si bien qu'en toute fin de saison, le club a fait l'acquisition d'un tel planeur, pour remplacer un L-13 qui a maintenant dépassé le cap des 5000 heures. Cette acquisition fait partie de l'effort de modernisation de l'école.

**Les planeurs motorisés** Bien qu'en propriété privée, la présence de quatre biplaces motorisés au club a donné l'occasion à plusieurs membres de diversifier leur expérience du pilotage et du vol à voile.

**La sécurité** Incontournables malgré nos efforts, quelques incidents se sont produits au cours de la saison, dont deux avec dommages mineurs – une commande de train mal verrouillée dans les deux cas. Un cas plus sérieux de marsouinage à l'atterrissage a causé des dommages plus importants à un motoplaneur privé.

La saison 2009 est maintenant derrière nous et son succès nous amène à préparer celle de 2010 dans l'enthousiasme et l'optimisme.



2009 was a successful season. First, drainage system improvement made an early season start possible. It was welcome since spring weather was exciting, though not so in July and August, but we enjoyed nice soaring conditions at the end of the season. Every year, members leave and need to be replaced. The first half of the season didn't see a lot of new members coming in, but the situation has reversed to the point we considered closing our doors to new members. We ended with 65 active members – optimum for our club.

The OLC was once again popular. Considering that the club misses some more retired people to make midweek operation possible, OLC results of fourth place were quite satisfying. FAI badge legs were also tried by some members, after a few years with no claims.

In August, we enjoyed a brand new ASK-21 demo for one full week. Most members having a trial flight agreed that it would make an excellent trainer. After some discussion the club got a used ASK-21 to replace an aging L-13 Blanik. We now have 4 motor two-seaters, all of them privately owned, and they gave many members the opportunity to increase their experience, both pilotage and soaring.

Even with a lot of effort to avoid them, incidents still happen. Two of them followed a not properly locked landing gear that ended with minor damage. A more serious case of uncontrolled porpoising ended with a broken propeller, a collapsed front gear and some front fuselage damage on a motorglider.

The 2009 season's success brings optimism and enthusiasm for 2010.

**Jean Richard**

## the demise of Guelph Gliding

Guelph Gliding and Soaring Association (GGSA) discontinued flying operations in Elmira at the beginning of 2009. Progress made in recent years to reduce club debt was countered by new, unexpected costs. A dwindling membership resulted in tow-pilot availability issues, under-utilization of club ships, and reduced club revenue. Faced with financial and logistic issues, GGSA elected to move their club aircraft to York Soaring and begin the process of dissolving club assets to repay private loans long term members had made over the years. YSA had previously extended an invitation to GGSA members to use their facilities in 2009 as guest members and encouragement from the Erin Soaring Society who, after ceasing independent operation joined YSA, were motivating factors in making the move.

Prior to moving to YSA, two club ships and one privately owned craft were damaged during a severe storm. The club's 1-26 was written off after it broke loose from its tie-downs, contacted the adjacent 2-33, and came to rest upside down. The 2-33 was sold to the Ontario Air Cadets. The privately owned ship had been stored in its trailer all winter and was uninsured. During the storm, the trailer was lifted off the ground, tumbled downwind and impaled on a fence post.

Over the course of the summer, the majority of GGSA's pilots continued to fly at YSA, Toronto Soaring, and SOSA. The GGSA Pawnee and 1-34 was sold to YSA to pay off the remaining club debt and to keep both aircraft available to GGSA members at their new club. The Lark continues to be owned and flown by the fourteen remaining GGSA members out of YSA. GGSA social activities such as summer BBQs and the annual Christmas dinner will continue for several years to come. Moving forward in 2010, GGSA members are joining YSA, who has fast-tracked full membership privileges to complete the transition. Although members of the club were sad to see operation in Elmira end, the majority of members will continue to be active in the sport and are adjusting well as members of a larger club.

**Eva Dillon**

## Winnipeg Gliding Club

The 2009 season began on 25 April with a remote start-up at the high and dry Southport Aerospace facilities near Portage La Prairie. Without the support of Wade Linden and the good people at Southport Aerospace the club would have been forced to

wait until late May to start operations at their own lake bottom field at Starbuck.

The season was quite fruitful with six new glider pilots licensed or converted. At season end there were two other students very close to licensing. As well, two other glider pilots joined from other organizations during the year. In competition, two pilots (Jim Oke and Frank Cwikla) flew in the meet in North Battleford in June. One or more additional members may also attend the Nationals in 2010. The club season ended with last flights taking place on 24 October. Between seasons, one of the long time members and instructors purchased a Discus B. Hopefully, this will further increase the club's presence on the OLC for 2010.

Winnipeg scored well in the OLC in 2009. Fifteen participants logged 95 flights for a total of 12,480 points with Russ Flint attaining the high club score and finishing first in the SK/MB region. As a club, WGC finished 4th of 24 clubs in the FAI category, and 9th of 41 clubs in the CDNC category. Jay Allerdyce placed first overall in the Junior class, and 4th in the Novice Class.

Art Grant will be officiating at both FAI World Gliding Contests this year with financial assistance from Sport Manitoba. Art has officiated at the 2003, 2006, & 2008 FAI world contests.

**John Toles**

### big year for Cu Nim

2009 was an incredibly busy year for Cu Nim. The 2008 season ended with the unfortunate towplane accident at the end of the fall Cowley camp. After AMEs were approached to obtain repair estimates, it became evident that repair costs were close to the insured value of the aircraft and that it was possibly a write-off. Evaluating the options available, we decided to repair the aircraft and also replace the wooden wing spars with the aluminium spars, with the club footing the bill for the difference between the repair costs and the insurance payout. Several members pitched in with the repairs under the guidance of the AME to help lower the costs.

From the frame out, NJK is now a brand new towplane, although a number of hidden defects (such as cracked axles) were discovered during the rebuild that contributed to numerous delays and cost overruns.

At the end of the 2008 season, the Cu Nim members had approved the purchase of a Schleicher ASK-21 with dual hand controls for the rudder. The original motion was to

*Spring has sprung  
Da grass has riz  
I wonder where da birdies iz ?*



...

*Da birds, I guess,  
Iz on da wing.*



*Now ain't dat absurd ...  
Da wings is on da bird!*

*Marty Slater*

purchase the aircraft for an early 2010 delivery with a clause that we could take earlier delivery provided that no additional costs were incurred. As luck would have it, Schleicher informed us that there was a March delivery position available. As the club didn't have sufficient funding on hand, we pondered various fund raising possibilities, and the funding finally fell into place thanks largely to member loans.

Due to the glider's high price and the volatile dollar/euro exchange rate, we decided to dollar cost average by spreading the purchase of euros over several months – we became currency traders with many e-mails and phone calls being exchanged as we tracked the changes in the rate. The club also applied for grants to help fund the purchase and over \$40K has been received and other grants are in the works.

To prepare for the arrival of the glider, four Cu Nim instructors travelled to California to get K-21 instruction at Skylark Soaring and Caracole Soaring. The K-21 left Hamburg on 11 May, and we had it at the field on 30 May. The first flight was on 5 June.

One of the reasons for purchasing the ASK-21 was to give flight training to disabled individuals and to become a chapter of the *Freedom's Wings* organization, <[www.freedomswings.ca](http://www.freedomswings.ca)>. To start the *Freedom's Wings* program, Mike Clarke (a paraplegic glider instructor from Ontario) spent several days at Cu Nim training our instructors as well as taking a number of disabled people for inspiration flights. Since then, we have provided numerous "inspiration flights" to individuals from the *Carewest Fanning Centre* and other organizations. The *Rick Hansen Foundation* generously provided grant money to pay for these flights. Cu Nim has also gained our first disabled student.

We disposed of one of our Blaniks once the ASK-21 was delivered. Just when we thought

we could relax, a hard landing occurred with the other L-13, and once again the services of a repair shop had to be obtained.

The normally good spring soaring weather deserted us. However, the post-fall Cowley conditions were remarkably mild and we got a lot of late season flying done, especially in November when everything is usually packed away (and that has helped our income). Cu Nim saw an increase in flying mainly due to the adoption of a four-day flying week. This was very successful and will be continued in 2010. We are even considering making it a five-day operation with a day dedicated to *Freedom's Wings* flights. The K-21 is always on the line and is really earning its keep; it logged 177 hours and 368 flights from its June '09 start!

Even given the on-and-off flying weather, we had 888 flights compared to only 468 in '08. In conclusion, it was a good transition year and we eagerly await the start of this 2010 flying season.

**Derek Jones**

### Vancouver Soaring

2009 was a year of stark contrast for us, we experienced some very positive things and yet had our share of challenges too.

We began with modest expectations due to the less than encouraging economic situation. Our goal for membership was less than we had seen in 2008 and reflected our uncertainty about the coming year. We decided to reduce our rates and offer some incentives in our flying packages to try and offset this. The early spring soaring was particularly good and got everyone thinking about the OLC and what was yet to come.

On 14 May tragedy struck when we lost our Deputy CFI, Brian Allen, in a motorglider accident. Brian had been a large figure in our club for nearly ten years and his loss was a huge shock. Together with Brian's family we helped each other come to terms with this as best we could.

The effect on our activities is easy to imagine but we also knew that Brian loved to fly and that he would want us to go on doing just that. On 25 July we were able to host a memorial for Brian and give his family and friends an opportunity to say goodbye. I think I can speak for everyone in the club when I say how honoured we were to be able to do this.

Over the course of 2008 we forged some new friendships with our local Cadet squadrons and 2009 saw a repeat of their long

weekend visits. In the third week of August we hosted a week long soaring camp for air cadets from all over Canada and we were blessed with fine weather all week long. The course was successful and a great deal of fun for all involved. Everyone hopes we can do it again in 2010.

The club continued to offer week long training courses this year and, although the first was hampered by poor weather, the second was perhaps the busiest yet and brought several new members to the club. Our activities with the *BC Mobility Opportunity Society* also continued this year although they were beset with weather and logistical problems which resulted in much fewer flights than we'd hoped for. We are committed to continuing the program in 2010 and are eagerly awaiting the certification of hand controls for the Grob 103.

2009 also saw our participation in the first year of the *SAC Youth Bursary Program*. We took on three students who took full advantage of the incentive to advance their learning and enjoyment. We hope they'll be back with us again next year.

Summer came in hot and dry in this part of the province, and with it the risk of widespread forest fires. This resulted in a temporary closure in our flying at a time which is usually very busy for us. Thanks to the efforts of several members, we managed to draw up an agreement with the BC Forest Service which allowed us to resume flying in certain areas whilst giving the helicopter traffic the freedom they needed to operate. We now have a template for future deployments which all agree is mutually beneficial.

Unfortunately we didn't fulfill all our plans for away camps this year but the June expedition to Ephrata saw some good flights from several members and featured large in our year end award ceremonies. There is already talk of next year's camps with a hope to include some of our newer members in the plans.

After a year of ups and downs we finished having flown slightly more hours than we'd budgeted for and with an increase in membership about 10% over our forecast figure. As usual, it was the efforts of individuals and small groups within the club that made everything happen and gave us a successful year despite the considerable challenges we faced. The club is involved in several initiatives that I think will keep it alive and well and I look forward to the 2010 season.

My thanks to all who helped make 2009 a successful year for us.

**Dave Hocking**

## FT&SC report

from page 17

the K-21 cockpit in Holland and bungee cables to substantially stiffen the controls. They also use smaller 6 foot fabric screens on wooden frames. Less than 8 ft screens made it a little more difficult for the rear pilot to sense motion, but was good in the front seat.

- USA has web-based training modules for wing runners, etc. SSA Safety Foundation does site visits with verbal reports only. Safety seminars are 1/2 day to 1 day long. Most launch accidents occur after the glider pilot initiates a release with no plan what to do next. Recommend having student call out height and airspeed in rope break training to develop the habit of awareness.

- Sweden – the *Stop Crashing* program is a seminar for their national safety program. As one result they have removed gear alarms from aircraft, as the distraction caused more additional control problems in crash studies.

- Denmark – pilots cannot renew the glider's C of R each year if the owner does not provide safety data, which includes the number of launches, outlandings and total hours flown.

- Holland issued a safety alert that the DG 505 seat cords on the rear seat can let the seat fall forward and jamb control stick. They use an SF-22 touring motorglider (TMG) for "Fast Track to Soaring" program – 5 hours dual in TMG then in a K-21 because this TMG closely matches the K-21 in speed, handling, and performance. They teach primary effects of controls through to circuits in the TMG. Comment from a Dutch instructor was that they train glider pilots faster, but they don't necessarily stay with the club flying gliders and switch to the independence of a TMG or power plane flying.

- Switzerland – noted that older pilots are flying less but having more accidents! This trend may be bigger than we think!

- After TSP discussion, there are now fifteen separate spin scenarios. Added were: tightening thermal to centre core, low altitude circling of a landmark, and turning low in windy conditions (illusions created by drift).

- OSTIV TSP Chairman, Ian Oldaker, has been requested to present his paper on Pilot Safety in Gliding – Recommendations from the OSTIV Training and Safety Panel for Immediate and Long-term Initiatives and Systems approach to safety to the IGC and the SSA Convention 25-28 Jan, 2010. He will also run a seminar on improving pilot safety for the SSA Instructor revalidation clinic. The IGC paper is based on safety management principles and Human Factors experience.

*Dan Cook: chairman & National Safety Officer, members: Joe Gegenbauer, Gabriel Duford, Bryan Florence, Richard Sawyer, Ian Oldaker: OSTIV TSP Chairman*

## Dick Johnson's glider

from page 7

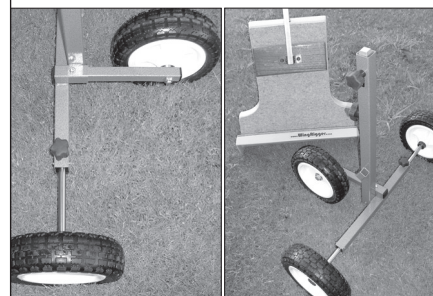
and Val's getting mad. The agent comes back 20 minutes later with my computer in hand and says, okay, you're good to go. What? Why did we have to sit in this room for so long? Well, we were told that we could have been lying – even though we had copies of the ad, the money orders, and the contact numbers for seller so they could call, that wasn't proof. She only released us because she looked through my e-mails and saw my conversation with the seller. What would have happened if I hadn't had my laptop? I guess we would still be there. So beware, when coming across the border at Coutts, the government will spend more time trying to get money from you than being concerned about what you're going to do with a high-powered rifle. It had been a 2-1/2 hour ordeal. It took us at least an hour after that to calm down – even now our blood starts to boil when we talk about it.

We arrived at the club at Innisfail about 10 pm, relaxed by the fire pit and told our story. The next day we put the plane together to show others and get familiar with it. A couple weeks later after some hard work from John Mulder and his associates we got the import complete and the new registration was done. C-GBXX is ready to fly once again. One final thing – after seeing our new registration letters, and because the plane has a 20.3m wing, and the fact I'm not the smallest pilot you've ever seen, the new competition letters are XXL (Extra Extra Large).

My first flight in XXL was 2.3 hours. I will see you this spring; I know you will be seeing me. I'll be going after my 300K. ❖

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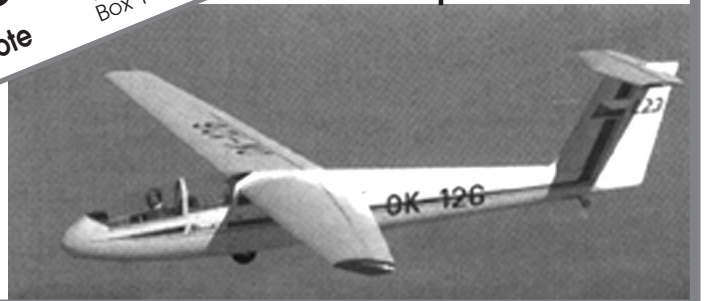
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## flying the Antares

from page 15

Hirth position at the base of the panel. I prefer it in the LS position on the side of the fuselage in front of the flap lever.

With a 10 knot crosswind on take-off the steerable tailwheel, which is part of the rudder, made itself useful, although it takes a moment to get used to it. But the most obvious characteristic, which became immediately apparent, was the very light controls. I like a responsive, sensitive glider as I depend on airframe feedback for the way I fly. The rate of roll was both quicker and lighter than my LS-6, the rudder was more than sufficient (in circling I seemed to need almost no rudder), and the elevator was similarly effective and light. Despite this aircraft having no elevator/flap linkage at present, the forces were so low that the glider appeared to adopt the appropriate speed at the different flap settings without any need to alter the trim. The undercarriage retracted quickly, and thereafter the cockpit became almost silent, irrespective of the position of the adequate ventilator.

The glider seemed to climb well in the very weak lift, indicating 80 km/h or slightly less. It was very reluctant to stall unless deliber-

ately provoked, and then recovered quickly without any wing drop. I really enjoyed flying it for two hours and reflected how nice it would be to fly in the mountains. It was easy to land, and using the steerable tailwheel and wingtip wheels I could confidently steer off the runway on to the taxiway.

**performance** Such a flight can give one absolutely no impression of comparative actual performance. I've always thought that gliders designed to similar specifications perform virtually the same, and it is the pilot and his/her interaction with the aircraft that makes the difference. However, when buying a new glider one certainly hopes that its performance will be at least as good as its competitors, and it seems to me that this is a reasonable expectation for the Antares 18 because:

- it can fly at a wide range of wing loadings: with an empty weight of only 275 kg, and a maximum weight of 600 kg, the glider should excel in both very weak and strong conditions,
- by all reports, the performance of the Antares 20E is outstanding. Thus the fuselage drag, wing root design, tailplane and rudder,

which the Antares 18 shares with the 20E, should perform well,

- similarly the wing, with its constant curve leading edge and its nine Boermans profiles, should work well (it certainly looks nice).

Whether the Antares calculated performance curves, which suggest it to have a performance advantage especially at higher speeds, will be proved correct, only time will tell.

**cost** At first sight the Antares 18 seems rather expensive. But this is not really the case: the price includes everything except instruments, parachute and trailer. The tail dolly is included, and all aircraft come with engine bays and doors for turbo installation – even fitting instruments may be included. On this basis the price is very similar to its competitors. I admire Axel Lange and his team for their courage and determination in developing the Antares sailplanes. They pursue their dreams, but it is no way to become rich.

**conclusion** For me, buying a new glider is an emotive decision. On landing the Antares 18, I asked myself if I really, really wanted to own this glider. The answer is yes. ♦

## instrument ...

from page 11

- If the ASI reading does not remain steady, use the long nose pliers to clamp off the tubing at various places until the leak is isolated. Leaks may be caused by case leaks, internal leaks in an instrument, joiners, T-connectors, and at the skin of the glider where the static/pitot port pickups are glued to the skin. Leaks may also be caused by tubing which has gone hard and no longer provides clamping force on a fitting. Borgelt Instruments provides and recommends rubber rings to slip over tubing where it fits over fittings. These continue to provide clamping force even when the tubing does not.

- The pitot system should be checked under positive pressure. Block the pitot port and plumb the syringe into the ASI pitot line (or connect it to the pitot tube) and check that a constant reading is maintained with the syringe clamped off at about 100 knots IAS.

- The TE system should be checked under suction (negative pressure) as this is how it functions in flight. Plumb the static side of the ASI into the TE line, block the holes in the TE probe with white wing tape and gently apply suction using the syringe. Clamp at 100 knots on the ASI and check for a steady reading for one minute. Leaks may be isolated

using the long nose pliers to clamp tubing in various places until the leak stops.

Caution: mechanical variometers in particular are very delicate devices and are easily damaged by very rapid pressure changes. Ensure that all pressure changes are achieved slowly without the instruments hitting their stops.

Note: With some computer type variometers you will find large leaks in the pitot and static systems as some instruments of this type use a flow sensor in series with a capillary leak to measure airspeed. It is important to ensure that the remainder of the pitot and static systems in the glider do not have leaks as these other leaks may introduce large errors into the airspeed as measured by these instruments resulting in very poor performance of netto variometers, speed to fly indi-

cators and large errors in measured true airspeed for wind calculation and navigation purposes.

If leaks persist despite using good tubing and T-connectors, you can assemble the tube and fitting using a little Permatex Aviation Form-A-Gasket No.3 (or equivalent) non-hardening sealing compound. *Do not use silicone RTV* – the fumes given off during cure may seriously corrode internal parts of instruments. Case leaks and internal leaks in instruments should be referred to the manufacturer or agent for rectification.

*Related articles from past issues of free flight:*

- *Fixing impossible leaks*, Andrew Jackson, 1989/3
  - *Basic instrument care*, Rudolf Brozel, 1989/3
  - *A neat improvement for \$3.50*, Peter King, 2000/1 page 18
- ♦



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# FAI badges

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## 2009 Badges annual report

The latest revision of the Sporting Code, the document that lays down the rules for badges and records, was made valid as of 1 October. The major changes are the elimination of camera evidence for validating turnpoint achievement and rules for the use of commercial off-the-shelf (COTS) GPS units for Silver and Gold badges.

I haven't had a claim using camera evidence for at least two years so that change will have little effect.

The use of COTS loggers, called "position recorders" by the FAI, is potentially more complex. Each make and model must be separately approved by SAC. The recorder must not extrapolate points in the case of signal loss – each recorded point must be an actual fix. GPS altitude is not allowed – only barometric altitude is valid – so in most cases a separate mechanical barograph must be carried. A verifiable .igc file must be produced, either by the download software or by some other means such as a digital signature. A guide to applying for approval of specific units is available on the SAC web site in the Documents Vault, Badges and Records, page 2. As far as I know no one in Canada is working on an approval at this time.

A list of the COTS position recorders which have been approved by other countries is available at <[http://www.fai.org/gliding/position\\_recorders](http://www.fai.org/gliding/position_recorders)>.

As for other Code changes, some of the "gotchas" have been removed but it's still necessary to be careful. Download from the SAC web site or from <[www.fai.org/gliding/sporting\\_code](http://www.fai.org/gliding/sporting_code)>. For badges, read Chapter 2 – it's less than two pages. Then read, in Chapter 1, the definitions of the terms used in Chapter 2. It doesn't take long and if you intend to make a badge claim it could save you a lot of grief.

The table below shows that 2009 was better than 2008 and just slightly below the five year average for badge achievement.

FAI badge and badge leg statistics, 2000 – 2009

	00	01	02	03	04	05	06	07	08	09	5 yr avg	% of avg
1000 km	1	0	2	0	0	0	0	0	1	0	0.2	–
750 km	–	–	–	–	–	1	1	2	1	0	1.0	–
Diamond	2	1	2	1	1	1	0	1	0	0	0.6	–
Gold	5	5	5	7	2	5	1	2	3	4	3.0	133
Silver	7	8	19	19	7	7	13	16	9	10	11.1	90
C Badges	15	38	57	26	18	33	19	27	21	23	24.6	93
Badge legs	67	71	111	99	51	47	60	90	40	55	58.4	94

Of the 55 badge legs, 7 were Diamond, 9 were Gold and 39 were Silver.

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# FAI records

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The following records have been approved:

**Pilot** Charles Yeates (Kris Yeates)  
**Date/Place** 23 Dec 2009, Narrowmine, Australia  
**Record type** 400 km Triangle Speed, Citizen, Multiplace  
**FAI Category** SAC  
**Sailplane** Duo-Discus VH-GKC  
**Task** 3 GPS turnpoints out of Narromine  
**Speed** 111.7 km/h  
**Previous record** 85.0 km/h – A Kawzowicz (J Brennan), 2007

**Pilot** Charles Yeates (Kris Yeates)  
**Date/Place** 23 Dec 2009, Narrowmine, Australia  
**Record type** 3TP Distance, Citizen, Multiplace  
**FAI Category** 3.1.4f  
**Sailplane** Duo-Discus VH-GKC  
**Task** 3 GPS turnpoints out of Narromine  
**Distance** 406.5 km  
**Previous record** unclaimed

**Pilot** Charles Yeates (Kris Yeates)  
**Date/Place** 23 Dec 2009, Narrowmine, Australia  
**Record type** 100 km Speed to Goal, Citizen, Multiplace  
**FAI Category** SAC  
**Sailplane** Duo-Discus VH-GKC  
**Task** 3 GPS turnpoints out of Narromine  
**Speed** 127.0 km/h  
**Previous record** unclaimed

## 2009 Records annual report

Multiplace and legends were the dominant themes of 2009 record flying activity.

Of the eight 2009 Canadian soaring record flights, a couple stand out as particularly unique. Charles Yeates and his able copilot Kris started the year with a couple of solid multiplace records flown in Namibia, the first Canadian soaring records flown in that country. Well done Charles.

Meanwhile back in Canada, Bruce Friesen was busy showing us what can be done with classic "wood" and some great western soaring weather. That this record was a predeclared out-and-return flatland task flying a classic Standard Austria is truly exemplary!

Additional territorial record flights were also flown by Jerzy Sziemlinski and Ian Spence with Charles & Kris rounding out the year with three more citizen records flown in Australia.

One point regarding flight declarations – please remember that any declaration must be made prior to launch. This applies for all claims including self-launch gliders.

Finally, records certificates will be printed and sent to each new record holders prior to the start of the 2010 flying season. Congratulations gentlemen!



# CANADIAN RECORDS (as of 23 Dec 2009)

**T** A record set entirely within Canada – listed only if a “C” record is flown.  
**C** indicates a record by a Canadian citizen originating outside the country.  
 (These are noted only when a greater “Territorial” record does not exist.)

RECORD	OPEN	15 METRE	CLUB	FEMININE	MULTIPLACE
<b>DISTANCE (km)</b>					
3.1.4a Free distance	Marsden / Apps Ian Spence	1093.0 596.7 T 2009	Mike Glatiotis Bruce Friesen	Ursula Wiese not claimed	Chester Zwarych (R Adam) Ernst Schneider (D Smith) 393.3 T 2008
3.1.4b Free out & return	Tracie Wark Tim Wood	750.2 C 2003 1002.4 2008	Tracie Wark Tim Wood	Tracie Wark Sue Eaves	Charles Yeates (Kris Yeates) 464.8 C 2008
3.1.4c Free 3 TP dist.	Brian Milner Tim Wood	1394.0 C 1993 481.0 2007	Jerzy Szemplinski Tim Wood	Tracie Wark Antonia Williams	Trevor Florence (J King) 689.0 2002
3.1.4d Free triangle dist.	Marsden /Apps TimWood	539.6 2009 707 2007	Jerzy Szemplinski Tim Wood	Tracie Wark not claimed	Charles Yeates (Kris Yeates) 590.0 C 2008
3.1.4e Distance to goal	Jerzy Szemplinski Tony Burton	642.7 T 2007 760.0 C 2006	Jerzy Szemplinski Bruce Friesen	1975	C Zwarzych (H McColeman) 310.0 T 1984
3.1.4f 3 TP distance	Brian Milner Hal Werneburg	652.3 T 1993 1128.9 C 1999	Pat Templeton Tony Burton	1984	Charles Yeates (Kris Yeates) 406.5 C 2009
3.1.4g Out & return dist.	Hal Werneburg Peter Masak	803.7 T 1982 1007.0 C 1987	515.7 2004 Spencer Robinson	1988 2006	Dave Marsden (Ed Dumas) 421.5 T 1979
3.1.4h Triangle distance		1007.0 C			Charles Yeates (Kris Yeates) 506.9 C 2007
					John Firth (Dan Webber) 510.4 T 1986
<b>ALTITUDE (m)</b>					
3.1.4k Absolute Altitude	Bruce Hea Walter Chimela	10485 T 1981 12449 C 1974	15m record claims must exceed listed starter values	Deirdre Duffy A Cervenka	Bob Shirley (P Campbell) 9083 T 1961
3.1.4m Gain of Height	Dave Mercer	8458 1995		Deirdre Duffy	W Chimela (VanMaurik) 10390 C 1975
					Bob Shirley (P Campbell) 7102 1961
<b>SPEED, ▲ (km/h)</b>					
3.1.4j 100 km	David Mercer Dale Kramer	141.5 T 2004 168.1 C 1999	David Mercer	Tracie Wark	Dave Marsden (M Jones) 98.1 T 1975
SAC 200 km	John Firth Charles Yeates	110.6 T 1984 116.3 C 1994	Tony Burton	Tracie Wark	Charles Yeates (Kris Yeates) 125.6 C 2006
3.1.4j 300 km	Kevin Bennett Peter Masak	113.1 T 1988 148.9 C 1985	Tony Burton	Tracie Wark	Lloyd Bungey (Tony Burton) 76.0 T 1983
SAC 400 km	John Firth Rolf Siebert	99.0 T 1987 140.1 C 2004	Dave Springfield Tony Burton	Tracie Wark	D Springfield (P Templeton) 108.5 C 2002
3.1.4j 500 km	Walter Weir Peter Masak	105.7 T 1991 151.2 C 1985	Rolf Siebert	Tracie Wark	A Kawzowicz (John Brennan) 87.1 T 2006
3.1.4j 750 km	Willi Krug Spencer Robinson	108.8 T 1982 118.7 C 2003	Tracie Wark	Tracie Wark	Ian Spence (J-R Fallu) 128.5 C 1991
3.1.4j 1000 km	Peter Masak	106.5 C 1987	Spencer Robinson	Tracie Wark	A Kawzowicz (A Marcelissen) 85.0 T 2009
			not claimed	not claimed	Charles Yeates (Kris Yeates) 111.7 C 2007
				not claimed	John Firth (Danny Webber) 88.8 C 1986
					not claimed
					not claimed
<b>SPEED, O&amp;R (km/h)</b>					
SAC 300 km	Hal Werneburg Walter Weir	115.2 T 1983 191.3 C 1989	Bruce Friesen Jerzy Szemplinski	Ursula Wiese Tracie Wark	Ernst Schneider (D Smith) 112.7 2008
3.1.4i 500 km	Kevin Bennett Walter Weir	126.3 T 1992 150.9 C 1996	Tim Wood	Tracie Wark	Charles Yeates (Kris Yeates) 79.2 C 2007
SAC 750 km	Walter Weir	145.0 C 1994	Jerzy Szemplinski	not claimed	not claimed
3.1.4i 1000 km	Brian Milner	147.0 C 1999	not claimed	not claimed	not claimed
<b>SPEED, GOAL (km/h)</b>					
SAC 100 km	David Mercer	167.0 T 2004	David Mercer	Tracie Wark	Trevor Florence (N Marsh) 105.1 T 2000
SAC 200 km	Rolf Siebert Tim Wood	183.7 C 2004 128.2 T 2008	Rolf Siebert Tony Burton	Tracie Wark	Charles Yeates (Kris Yeates) 127.0 C 2009
SAC 300 km	Walter Weir Tim Wood	143.0 C 1995 128.2 T 2008	Jerzy Szemplinski Tim Wood	Tracie Wark	Trevor Florence (J King) 91.5 2002
SAC 400 km	Walter Weir	145.9 C 1994	(starter)	not claimed	Jock Proudfoot (G Fitzhugh) 70.2 C 1981
SAC 500 km	Tony Burton Dave Marsden	81.5 1990 97.1 T 1970	85.6 100.4	not claimed not claimed	not claimed
	Walter Weir	138.4 C 1993	138.4 C		

## Advanced Soaring Made Easy ~ 2nd edition

by Bernard Eckey

review by Dr. Richard Agnew

To me it is no surprise that the first edition of his book *“Advanced Soaring Made Easy”*, sold out very quickly. But rather than just reprinting it and resting on his laurels, Bernard’s second edition is a big improvement, essentially a new book with lots of bells-and-whistles. It bridges the gap between the first solo flight and competitive cross-country flying and even prepares the aspiring pilot for the psychological hurdles of the sport. Many of the subjects covered are anything but common knowledge. His book answers many, if not most, of the questions that glider pilots ask – from early solo pilot through to competition pilots and record hunters. It is also a very helpful reference for gliding instructors and coaches.

Large sections have been added to every chapter, the book’s layout improved, and the photo-to-text ratio increased. Some photos can only be described as spectacular. As well as making a complex subject appear simple, Bernard has included examples and anecdotes from his own outstanding gliding career to help the reader understand.

The first edition was good... the second edition is great. Even as a Diamond pilot, ex-instructor and now record pilot I use Bernard’s book in preference to the others that can be found next to my reading lamp:

- Helmut Reichmann’s classic, *Cross-Country Soaring*, 1988
- George Moffat’s, *Winning II*
- John Joss’ edited volume, *Advanced Soaring – a handbook for future Diamond pilots*, 1974
- CE Wallington’s classic, *Meteorology for glider pilots*, and,
- Leo and Ricky Brigliadori’s, *Competing in gliders – winning with your mind*, 2005.

Why should you own this new edition? *Advanced Soaring Made Easy* is broken into 12 bite-size digestible chapters. Having said this, I must admit I read the whole 336 pages in quick succession. The graphs, 134 drawings and 163 pictures greatly assisted understanding and made the read so much more pleasurable. Now I use this edition as a ready reference book.

Chapters include local soaring, gliding and weather, flight preparation, extended local soaring, advanced cross country flying, winning the mental game, flying competitively, a technical chapter, outlandings, safety (lookout, etiquette etc.), ridge lift and slope soaring and my favourite subject – wave soaring.

Eckey has included in this edition both northern and southern hemisphere material so pilots can be assured that their flying zone is covered. The use of icons alert the reader to a new topic or new section of text that may be of particular importance, applicable to a particular part of the world and/or essential to a pilot’s technical knowledge.

The much improved layout makes this new edition a ‘must have’ because of the ease of reading and flow of information, logic and theme. All chapters contain relevant drawings, graphs, and tables – and the amazing photos aid the description of the subject matter. Almost every page contains information on how to transform new knowledge into practical benefits. Readers will instantly see that specific and systematic training paves the way for more fun and enjoyment in gliding.

When I started my own gliding journey, I saved up my meagre pennies and lashed out on Reichmann. Now I can admit that I never really

understood his mathematical ‘stuff’... Then later came father and son Brigliadori’s book. Eckey, on the other hand, has produced a high quality book that covers all these topics and more, and has somehow managed to price it so that it is even accessible to junior pilots.

If you are looking for reasons to own a book on gliding, the attractive price, the photos and ‘niceness’ are all huge reasons why you cannot look past the second edition of *“Advanced Soaring Made Easy”*. I suspect that this edition will be the sort of book that will only be lent out to the most trusted of colleagues – if at all. My Reichmann never was allowed out of the house as it was deemed way, way too valuable and probably a tad mythical. Eckey has managed to break that taboo and now I have a book that I might even buy two of, one for me to keep in pristine condition – the other for the unwashed. Eckey’s 2nd edition is now my ‘top of the pops’ and will probably remain there – especially Chapter 12.

*Advanced Soaring Made Easy*, by Bernard Eckey

ISBN: 978-0-9807349-0-4

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Richard Agnew is an Australian speed, distance and height record holder.

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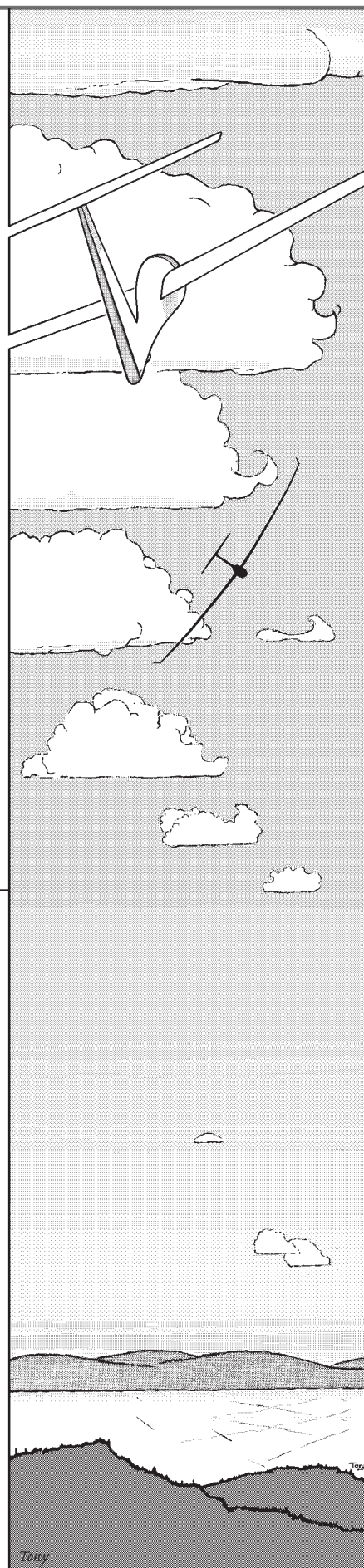
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