

free flight • vol libre

5/98
Oct/Nov





Badges, recruiting, cross-country and other matters The topic of member retention invariably comes up when one talks about membership stagnation. Many people only stay two or three years, the years where they use the most resources, and then drop out. We all know why they drop out — they get bored milling around within gliding distance of the field. Setting objectives and developmental tasks is an essential part of keeping people. Cross-country flying is the essence of the sport and badges are a neat way of introducing people to it. Jim McCollum made the remark recently on how few orders we receive for badges. The A & B badges are monitored and awarded by each club. How about giving them to new solos? How about having a badge committee to promote and encourage badge flying? Every club should try this for a year or two and see how they improve retention.

Rethinking AGMs The current format of a Sunday business session preceded by a seminar day is, I am told, about 15 years old. The lack of attendance at the last AGM in Toronto reaffirmed loud and clear that it is high time to rethink that exercise. The current method puts a lot of burden and financial risks on the local club. Many clubs see hosting the AGM as a chore. So I would like to submit for discussion the following ideas. These are just ideas in search of feedback.

- Scenario 1: Have a business meeting on Sunday with a dinner on Saturday night with local members.
- Scenario 2: Every other year, we have a special event in conjunction with the AGM. It could be a CFI seminar, a prestigious guest speaker like Derek Piggott, Ingo Renner, or the likes.
- Scenario 3: Have the AGM in conjunction with the SSA convention, when it is held near the Canadian border. It would allow us to take advantage of the exhibit and the seminars.

The objective is to have an event that will stimulate current and potential members.

My recommendation in case you get involved with organizing an AGM: when the AGM was last held in Montréal, the hotel gave us a suite for the weekend. So in lieu of the habitual stand up cocktails in an anonymous hotel ballroom, we recreated the club house atmosphere. The tub was filled with ice and beer. The wash basin kept the white and rosé wines cold. \$1 bought you something to sip. Was it successful? I don't know, but the place was busy until the wee hours of the morning ...

Income tax Every year in the fall, we send out income tax receipts. It is a fully automated routine and therefore costs very little to run. It is at that time that laggard clubs send us the remaining names of new members so they can get the income tax receipts. So what is an automated function becomes a manual one, thus costing SAC (that is all of us folks) money. I would therefore ask that clubs review their membership list and insure that the SAC office has complete records of your members asap. As an added benefit, new members get on the *free flight* list so Tony Burton can keep their interest up until next spring. Thanks for your support.



Les compétitions bi-provinciales Ontario Québec sont maintenant de l'histoire ancienne. La scène était belle à voir, avec 18 planeurs sur deux files attendant le départ. Ce qui m'a un peu chagriné, c'est de ne pas avoir eu de visiteurs de Québec ni de Bromont. J'ose espérer que ce n'était pas parce que vous estimiez que vos planeurs n'était pas à la hauteur. La compétition a regroupé des planeurs de performance diverses, allant des Pirat, Ka6, et Sprite aux DG et ASW.

Au moment où vous lirez ces lignes, Champlain aura vraisemblablement confirmé sa participation en tant qu'hôte des Nationales de 99. Dans ce cas nous aimerions pouvoir faire appel aux autres clubs du Québec et de la vallée des Outaouais pour nous aider à faire de cet événement un succès, une vitrine pour le sport ainsi qu'un projet collectif pour nos membres. Nous aimerions voir engagé dans la classe sport vos Solo, Jantar, Ka6 et autres appareils dans le seul but d'anticiper et d'apprendre.

Pierre Pepin president

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Le journal de l'Association Canadienne de Vol à Voile

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Bob McEwen flies York Soaring’s Astir in formation with Rob Harling in his 1-26 on a great day in 1994. Did anyone fix that gear door hanging down?

photo: Rob Harling



graphic not available for pdf file



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 national aero clubs. The ACC delegates to SAC the supervision of FAI-related soaring activities such as competition sanctions, issuing FAI badges, record attempts, and the selection of a Canadian team for the biennial World soaring championships.

free flight is the official journal of SAC.

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), or send a fax. All material is subject to editing to the space requirements and the quality standards of the magazine.

Prints in B&W or colour are required. No slides or negatives please.

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 contact their SAC Zone Director whose name and address is listed in the magazine.

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from a photo-montage by Real le Goueff

Thumbs-down on Silver O&R flights

L'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 aéro-clubs nationaux. L'ACC a confié à l'ACVV la supervision des activités véliplanes aux normes de la FAI, telles les tentatives de record, la sanction des compétitions, la délivrance des insignes, ainsi que la sélection d'une équipe nationale pour les championnats mondiaux biennaux de vol à voile.

vol libre est le journal officiel de l'ACVV.

Les articles publiés dans *vol libre* proviennent d'individus ou de groupes de véliplanes 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 en couleurs ou noir et blanc seront appréciées, mais s'il vous plaît, pas de négatifs ni de diapositives.

vol libre 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, dont le nom et l'adresse sont publiés dans le magazine.

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The rec.aviation.soaring newsgroup had some recent discussion on the Silver badge requirements. The best way to fly a Silver C distance, it was suggested, was a 100+ kilometre out-and-return task. This prompted the following opinion that little of significant cross-country training worth was to be learned with an out-and-return, and it was against the spirit of the originating concept of the task. Here it is — what do you think? Should club CFIs tell the Silver distance hopeful to land anywhere but back at the field and the club accept the related inconvenience of a retrieve? editor

by "Barney"

All this [*an O&R flight*] fits within the present rules. Unfortunately, a primary benefit of the Silver C was originally to have a pilot find and land at a strange site under favourable conditions as a progression to equip him to land anywhere, particularly in a field, when under pressure. Your [*O&R*] example of badge hunting for its own sake does not develop the most important cross-country skills of navigation and judgement.

The system you describe not only places the destination within familiar surroundings but also at the pilot's own site. I wonder what altimeter setting was used! I almost bet it was that of the home airfield!

Badge hunting is a total irrelevance in developing gliding skills, but it can be a measure of the standard achieved provided that standard is relevant to the "qualification". Theoretically, with a Silver C, a student becomes a "qualified" cross-country pilot; but, since out-and-returns have been allowed, he may never have landed away from his own airfield and certainly not in a field. As Gold and Diamonds do not demand an outlanding either a glider pilot could, theoretically, gain all three Diamonds and a 1000 Kilometre Diploma without ever landing away from his home airfield. What sort of qualifications are those?

The wealth of experience obtained and the skill and judgement used by a pilot flying from his own club, finding and arriving at a strange destination is far greater than either a flight "home" or an out-and-return.

Fortunately, at least in the UK (I cannot speak for others) the club system monitors early solo pilots and generally picks up those who do not have skills to match their "qualifications" but it can cause great disillusionment when the Silver is not, as a badge alone, taken particularly seriously as a cross-country qualification.

When the Sporting Code allowed out-and-return flights to count some years ago this was totally silly. As gliders became higher performance, the qualifying flights to progress became easier and more meaningless.

As someone with 1500 hours and a motorglider instructor who teaches navigation and field landings, I can tell you that very many people only arrive safely in fields because modern gliders are extremely well air-braked and therefore very forgiving. However, most accidents in the UK which result in damage to either the aircraft or the pilot are a result of failed field landings. This is usually due to inadequate planning of the circuit once landing becomes inevitable.

Therefore there is no substitute for practice, practice, practice — forget about badges, at least until you have got ten field landings under your belt (preferably in the middle of Wales or East Anglia just before harvest).

So let's concentrate on skill development, not bits of tin which show what has been done within the defined rules.



Valemont to Invermere

cruising Kinbasket Lake in the Rockies

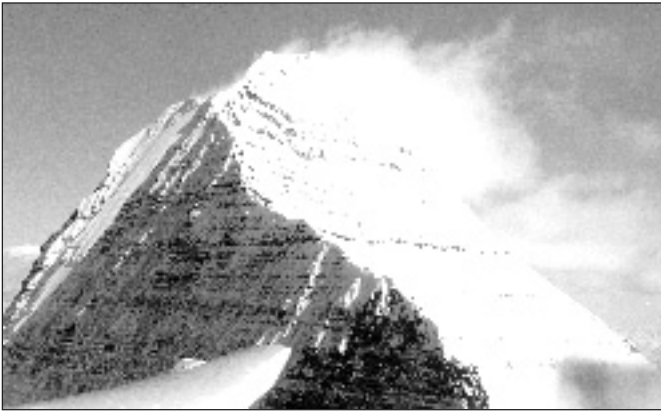
Kalli Brinkhaus, Vancouver

"R2 calling D2 — relay to Valemont Glider Ground — C3PO (*translation: see three possibilities*) for safe flight to Golden airport, possibly to Invermere."

R2 felt very gratified when she made this call. Her personality made it inevitable. That's simply the way she is. In the right place at the right time ... she'll go for it. Whoever happens to be engulfed in her most comfortable womb is taken along for the ride. Stress free and able to enjoy every moment.

It all started about three years ago. One of the privileged pilots belonging to her sistership, *Yankee 3's* Joe Gegenbauer, had flown to Valemont from Golden together with Uwe Kleinhempel in a Citabria. Joe had prepared great video footage of this trip and would not stop talking about the prospect of an outing to Valemont — the prospect of flying around Mt. Robson (a mountain which is only a few feet short of 13,000 with a 10,000 foot sheer drop along two-thirds of her base) and to explore the region in general.

Kalli Brinkhaus



When the Valemont camp finally occurred in early June this year, R2 knew she was ready for it. For many years now had she provided her 'cargo' with safe, spectacular flights in the Rocky Mountain area and elsewhere.

Saturday noon, the trailer opens, her first whiff of Valemont's clean delicious air just a seven hour drive from Vancouver — and what a sight. A large hard surface airfield in a remote setting (about five kilometres from town) with very little traffic (only three power traffic movements in a week), and what an unbelievable soaring paradise!

Y3 as well as Hodel Hodel had arrived the day before, along with AXQ — VSA's towplane. All was rigged and ready to go. With a smile R2 accepts Joe's offer to quickly

assist getting set up. The wings are on in a flash and in return her pilot helps with the launch of Y3. Hodel Hodel, being that cocky little DG-400 self-launcher, was taking care of himself.

It's her time to launch. Immediately she contacts increasingly strong thermals and soon frees herself of the noisy windmill on the front of the rope. Climbing in the valley near the airport — transitioning to the east ridge — climbing — reaching altitude permitting the first breathtaking view of the now not so distant Mt. Robson.

Radio chatter: "Hodel Hodel, this is Y3, what do you think, shall we make a run for it?" R2's anticipation is rising. She notices herself begging silently: "Wait for me!" She announces her position and promises to be there in a few more minutes. She approaches, watching the other two doing their thing. From the east side at 12,000 plus feet, they start their first run, keeping the majestic peak of Mt. Robson off their left wing tips. "Not much sink ... and actually some lift on the south side," she observes.

She has joined her peers, a couple more turns for maximum altitude and off she goes. What exhilaration and look what's with the pilot ... goose bumps have befallen him. Let's be gentle now as he is so easily overcome with emotion. At this moment she knows that nothing can possibly ever be greater than this. She is grateful for having received her wings and promises to be a good girl forever. In the company of her two friends she flies to Jasper, viewing the Jasper airfield, returning toward Valemont but not without indulging in a couple more circumnavigations around the 'by now almost familiar' peak of Mt. Robson.

During her stay in Valemont, not every day was a soaring day. But when they did happen, by gosh the flying was good! Either side of the valley (usually both sides in the same flight) offers outstanding scenery and great cross-country flying. What about venturing into the area to the south? The link to Golden and beyond?

More of her friends had arrived, *D2* (ASW-19) and *XH* (HP-14). Thursday afternoon: "Let's explore to the south along the shores of Kinbasket Lake," she urges.

Another great flight and unbeknownst to everybody she's made a plan: "As soon as the conditions are right, let's go to Golden and beyond — be ready for it."

The next morning — an omen? She observes her pilot friend getting up early. Joe and Heidi taking him to the base of Mt. Robson (a one hour walk from the parking lot only a 20 minute drive away). What a sight!

The reflection of a 10,000 foot sheer rise in a still 'mountain lake mirror' is experienced quietly in the company of good friends. A stirring — cheekily, a little cu peeks out from behind a mountain top in the north and it is only 9 am. The group on foot unwillingly increase their pace to get back to the airfield.

As soon as the trailer opens she knows today is yet again going to be an exceptional day. "Let's keep everybody calm, let's cooperate." The rigging seems to go even more smoothly than normally. On tow she begs of her pilot, "No macho low releases, please! Let's get off to an easy relaxing start!" He obliges.

Soon she is well poised for further exploration to the south along the shores of Kinbasket Lake. The conditions are strong with an indication of likely overdevelopment later. Gentle subdued dolphin-like flying provides very good progress. Every 10 -15 miles a turn for orientation purposes. Altitude between 10,000 to 11,500 — a very comfortable lift band from which to continue.

"Is this the day? Will he let me go the whole way? Come on, it's only 243 kilometres and we are half way already. Look, you can see Golden. Look at the cu, look at the options — go for it!" How can anyone resist Eve disguised as R2?

The call to relay is made to D2. Valemont operation answers with, "good luck", and "Heidi and the rig will meet up with you tomorrow sometime. Let us know when you arrive, etc. etc."

"Golden Glider Operations, this is Romeo Two", she says, looking forward to a reply.

"Helloooo ... R2, where are you?"
 "I am just south of Kinbasket Lake en route to Golden."
 "Coming from Invermere, are you?"
 "No, I left Valemont about two hours ago." ... pause ...
 "Where's Valemont?"
 "Near Mt. Robson," she answers.

Dick Mamini, Mike Cook, Mike Glatiotis, John Broomhall and ? are on a great flight themselves. A rather 'quick little flight' to the top of Rogers Pass. R2 enjoys their company for a little while. Her goal is Invermere. The East Kooteney Soaring's operations are located there and her place is going to be with Trevor Florence for the next couple of months, a prospect of more great flights, one that makes her proud to be a sailplane.

Onward she flies, past Mt. Seven toward Parson. A small cell near Parson has reached the overdevelopment stage.

"What to do?" as she circles nearby in good lift. "Let's go

photo not available for df file

Looking south down Kinbasket Lake. The lake is the reservoir formed by the 820 foot high Mica Dam on an arm halfway down the west shore. The lake, at about 2400 feet asl, is 200 kilometres long, filling the Rocky Mountain Trench from 35 km north of Golden to 12 kilometres south of Valemont. The mountain tops on either side average 9000 feet asl and are about 10 kilometres apart.

back to Mt. Seven for some entertaining interaction with 'jellyfish' and the likes and then have another look at it later," she muses.

Back to Parson, the cell is now covering an even larger area. "Cross the valley to the west and continue or land in Golden?" When she overflew Golden she had noticed a large number of glider trailers (proof of a successful Golden camp) indicating an opportunity to spend an evening in the company of peers.

Back to Golden, the decision is made. Tiedowns are arranged and a wonderful night is spent at the Golden airport while her pilot bunks with John Broomhall.

The next morning, another early start to a promising day. Waiting for Uwe (the tow buddy): "What's keeping him? Come on Uwe!" as signs of potentially early overdevelopment appear. "I really would like to complete the last leg to Invermere in flight!" she urges. On this route she truly does know every nook and cranny, but even so, the conditions are no longer perfect as she finishes this part of her adventure. The conditions near Invermere suggest some good local soaring. "Oh, how I would love to make it to the top of Mt. Nelson to say my "thank you's" within sight of the little cross on the top — yes, that would absolutely make it perfect."

And thus ends R2's shuttle flight from Valemont to Invermere.

Is *this* one more leg for the pilot with 1000 kilometre ambitions? Invermere/Valemont/Elko/Invermere. According to the GPS, the total distance is 1003 kilometres. Well, we can dream — practice and be ready.

One day, right? ❖

GPS Q&A

We all know what GPS is — but what exactly can it do for me, and where is the technology taking us?

Ian Spence, SOSA

This question and answer session is intended as an introduction for glider pilots who are unfamiliar with this relatively new navigational technology. It is easy to be intimidated by GPS, computers, and similar technology. We should not be — these electronic aids can expand the horizons of our wonderful sport just as much as Lippisch and Kronfeld's vario did back in 1928.

Some of the text is based on the recent discussion on the SAC Roundtable (<http://www.pubnix.net/~rmacpher/sac/round.html>).

Q What is GPS?

A The Global Positioning System enables accurate navigation based on discrepancies in the times broadcast from satellites carrying synchronized atomic clocks. These discrepancies are the result of the differing distances from each satellite. Triangulation, based on these distances, is used to establish the position and altitude of the GPS receiver that you carry in the aircraft.

Q How accurate is GPS?

A Accuracies of only a few metres are possible but the U.S. Department of Defense degrades the timing information available to civilian users so that horizontal positioning is accurate to tens of metres with a maximum likely error of about 100 metres. Vertical accuracy is worse and altitudes may be off by two or three hundred metres at times.

Q Can GPS record my flight?

A Almost all GPS units have some kind of memory that can be used to hold (1) airport and airspace information, (2) task turnpoints or waypoints, (3) a log of the track flown. Not only can your flight be recorded but GPS can show you important waypoints such as airports or turnpoints as you fly. If you have to make an outlanding, knowing the distance and direction to the nearest airport is a great safety feature.

Q What does GNSS FR mean?

A Global Navigation Satellite System Flight Recorder. The first acronym covers any satellite-based navigation system (GPS is American; GLONASS is Russian) and the second abbreviation denotes the instrument that logs the flight — this is often called, simply, a logger.

Q Doesn't an electronic aid diminish the experience of gliding cross-country?

A If you get your jollies from navigation, you are probably not going to be enamoured of GPS. Before GPS, I spent 30-70% of my time map reading and dead reckoning — and I still sometimes got lost. While I carry a sectional, and cross-check it regularly, I now devote

10% of my time to navigation. I use the time saved to look outside. I spend more time reading the weather, the essence of cross-country flying. George Lee, three times world champion, once said that he was successful solely because he read the weather better than others. I also have more time to look for gliders circling ahead and to steal their hard-won lift. Heads-up flying is also safer; doubly so if the other guy is not buried head-down map-folding, compass-reading, calculating tracks, bearings, wind vectors, and so on.

Q How do I use GPS for navigation in my glider and how much will it cost?

A You have three choices: a handheld receiver designed for general use (\$250-\$600), a receiver designed for aviation (\$600-\$2000+), or a more specialized unit designed for gliding and approved by the International Gliding Commission (\$1500-\$2000+). Costs are approximate and in Canadian dollars, but prices are falling rapidly and will continue to do so.

Q Can I use a handheld GPS for badge flights or records?

A No, but you can hook up many handhelds to an IGC approved recorder such as the EW flight recorder. This combination is good for badge flights up to Diamond but not for records. Think long and hard before you do this since the cost of a handheld plus a flight recorder is pretty close to the price of an integrated GPS FR such as the Cambridge GPS-NAV or Filsler LX21. These units are good for any kind of badge flight or record flying and are also specially designed for gliding. In addition, they are optimized for connection to flight computers.

Q \$1500 is a lot of money for a GPS recorder. Why shouldn't I stick with a camera and barograph?

A One camera will probably cost you \$150. Most people carry two (see below), so you could easily spend \$300. You can't buy a new barograph for less than \$500. Cameras use film and batteries; barographs use foils and other consumables. Then there's film processing. So you can count on adding another \$7-\$14 per flight. That's \$70 to \$140 per year if you make a few badge attempts or fly a contest. Thus the short term cost is not much less than buying a GPS flight recorder and the long term cost is more.

Q Electronic gizmos are complicated. Wouldn't life be easier with a camera?

A If you also enjoy the occasional self-flagellation, the camera (and barograph) route is the way to go! Oldtimers are so used to the ritual that they forget how error-prone the whole business is. Cameras often fail — no film; no film takeup; dead batteries; lens cap on; forget to wind film; forget OO grease pencil on canopy, lab screws up processing; and so on. And Aresti diagrams could be made of the turnpoint gyrations needed to get lined up — many beginners don't even get the TP in the frame. Better carry two cameras just in case! As a bonus, making the mount for the glider is a nice little winter project.

Q Electronic gizmos are complicated. Wouldn't life be easier with a barograph?

A A camera alone is no good for badges and records. You need a barograph to show continuous flight or to verify altitude gained. If you use a Winter barograph,

you must be a smoker, and smoking is bad for your health. Where's the foil, where's the camphor, who's got a match, blast this wind, don't smudge it, ... where's the OO, ... where's the fixer, ...? I think there are community college courses that cover all this — only in German though. A Replogle is nicer — no black fingers and the manual is in English — but what if you run out of the special paper, and the double-sided tape, and the elastic band to make sure the double-sided tape doesn't unstick? Oh, don't forget to wind it and turn it on before lashing it down with four bungee cords in some inconvenient place.

All IGC approved GPS flight recorders have an integral pressure barograph that records electronically. Nothing could be simpler.

Q Which of the above recorders is best for me? I fly cross-country occasionally in club gliders.

A A cheap handheld will probably do the job. Don't waste the extra money for an aviation model. You can also use the unit for driving, hiking, sailing, etc. Some cheaper models shut off the display above 99 knots; this may make a difference on final glides when you want to know exactly how far you have to go to the airport.

Q I'm a frequent cross-country flyer. What do I buy?

A Depending on your budget, any of the three types mentioned. If you also fly power you will probably want to buy a handheld unit that has an aviation database. If you want to keep the database current you must pay for software updates; this can be as much as a few hundred dollars each year. If you only fly gliders, the aviation database is of limited usefulness.

Q Can I hook a handheld up to my flight computer?

A Yes, if ... You need to be sure that the two are compatible. Most handhelds can output data that can be read by a flight computer but you should check with the manufacturer of your computer before buying.

Q What are the drawbacks to using a handheld?

A Several. It's really not a good idea to have loose objects floating around the cockpit — try it on the ridge or in the rotor! Most people devise a mount that often intrudes awkwardly on limited cockpit space. Many units are most easily used with two hands and are less convenient when your other hand is on the stick. The internal batteries need to be replaced every few hours — although some units can use rechargeables. You may be able to hook up to the glider battery but this means buying (or making) a power cable — not always cheap and you may spend considerable time tracking down the right kind of connector. Ideal for those who would rather fiddle than fly.

Q I'm a fairly serious cross-country pilot and I sometimes fly contests. What's best for me?

A You should almost certainly purchase a unit custom designed for gliders. It will be panel-mounted, eliminating the awkward problem of what to do with a handheld; it will easily integrate with your flight computer providing functions not available with the handheld/computer combination; it will usually display data useful to glider pilots, such as wind direction and strength; it will use the glider battery; and it can probably be used to verify badge and contest flights.

Q What if my GPS doesn't have airport data included?

A Many can accept data that you download from your own computer. Specialized glider databases are available on the Internet (<http://acro.harvard.edu/SSA/JL/TP>). The process is much easier if you use a GPS flight recorder specially designed for gliding, but glider databases are also available in formats suitable for the Garmin, Magellan, Eagle, and other handhelds.

Q How reliable are GPS flight recorders?

A Very reliable. Much more so than cameras. In two recent world championships there were *no* failures in more than one thousand flights. At Brandon, in our recent Canadian Nationals, there were no flight recorder failures. You must have a good battery and it must be charged — there is very little else that can go wrong.

Q I don't fly contests, or do badges, why should I be interested in a flight recorder?

A Because it's probably the best way of analyzing and improving your flying. You can review every flight in detail. You can even compare flights with others to see what they did that you did not. If you make some good flights, you might even be tempted to submit them for your provincial ladder! I won the Ontario Ladder last year — I wouldn't have bothered with cameras, but it was no hassle since my Cambridge GPS-NAV gives me a record of every flight.

Q How else can GPS help improve my XC flying?

A It can almost totally remove the anxiety associated with field landings. No matter how good the farmer's field looks from 800 feet, it may contain rocks, holes, ditches, pieces of equipment, or livestock that can damage the glider. Airport landings do not present the same hazards. If your GPS/flight computer combination has an airport database, it is often possible to airport-hop when going cross-country. If you keep going on course only while you have a landable strip within gliding range, you will never meet any farmers. When flying from SOSA I now almost never land in fields, although I have made quite a few airport landings in the last three years. A nice bonus is that I can usually call SOSA and get an aerotow retrieve! The GPS gives you the confidence to go cross-country more often.

Q Where do I find out more about GPS?

A Use the web. Some great starting places are:
<http://acro.harvard.edu/SSA/JL/TP/links.html>
<http://www.gpsworld.com/>
<http://gauss.gge.unb.ca/manufact.html>
<http://www.cnde.iastate.edu/gps.html>

Q Where do I find out more about IGC approved flight recorders.

A At the IGC site: <http://www.fai.org/gliding/>
They also have links to each of the manufacturers.

Q Who do I talk to in Canada about approved GPS units?

A Ulli Werneburg at "MZ Supplies" for Cambridge and Ed Hollestelle at "Solaire Canada" for Filser. See their ads in this issue of *free flight*. The Cambridge web site is <http://www.cambridge-aero.com/> and the Filser site is <http://www.filser.de/>

Q How about a really cheap GPS flight recorder? Is that ever going to happen?

A IGC approved flight recorders will drop in price but they will probably never be cheaper than about \$500, mainly because they must contain an accurate pressure barograph. Since the barograph component is only neces-

sary for badges and records, a very cheap logger could be manufactured.

Nick Bonnière has designed and built a prototype of a system that could sell for about \$150. Stay tuned for more details in *free flight* and on the SAC Roundtable. Also watch for used GPS units. They are starting to appear as those pilots who have to have the latest and greatest trade up.

Q Is there any other way to reduce the cost to pilots?

A Yes. Many clubs buy barographs; from now on they should buy flight recorders instead. When a new aircraft is acquired make sure that a GPS is installed (it always seems cheaper to install radios and other instruments when the aircraft is purchased). I belonged to a French club, Aero Club du Bas Armagnac at Nogaro, when I was on research leave two years ago. Every cross-country glider was GPS equipped! The cost of buying one or two flight recorders should not be beyond the budget of the larger clubs — if desired there could be some cost recovery by charging a small rental for use.

Q What's in the future for GPS and flight recorders?

A More than we can imagine: big clubs will probably get rid of their baroque timekeeping and accounting systems by using downloaded records from permanently installed flight recorders. Pilots will carry a bar-code card which they'll swipe in the glider before flying, thus providing identification. Complete details of each individual's flight will be downloaded at the end of the day, simplifying aircraft records, billing, etc. No more flight tickets, timekeeping, and laborious entry of flight details for the club treasurer. The technology exists now — we just need to customize it and make it more convenient.

In contests, transmission of glider position and altitude every 30 seconds will allow spectators to follow the race on a large screen television. This has already happened in experimental trials such as at the pre-Worlds in Bayreuth this year.

The biggest benefit for contests is the reduction in work. The organizers no longer have to prepare turnpoint booklets and photos. They no longer have to verify coordinates.

Photo processing and interpretation — difficult tasks that take many, many hours of volunteer work — are eliminated. Scoring with flight recorders is trivially easy and scores can now be posted within a few minutes of the last pilot turning in the FR. Pilots can no longer appeal the photo interpreter's decision. We now know exactly where they went.

New kinds of contest tasks, probably with individual start points for each glider, will help reduce leeching and may prevent the scary and dangerous prestart gaggling that occurs during the weakest part of the day.

Pilots will be able to develop and store thermal databases for their own local flying area. Imagine knowing where the "house thermals" are not just near your field, but all over! Someone like John Leibacher, who manages the Internet turnpoint database, will make these available on-line to everyone.

Display technology will improve. The glass cockpit in the glider is not far off. There is really no reason why all our critical flight information should not come via a single large screen or even on a heads-up display like the French HUDIS. I flew an ASH 25 with a HUDIS as long ago as 1991. It was an amazing instrument, but we can do much better today. The bureaucracy will probably always make us carry a few analogue primary instruments, but these could be 57mm and tucked away at the bottom of the panel. Increased computing power, an improved display, along with good thermal and landout databases will help pilots optimize their flights and increase cross-country speeds and do so more safely.

Q Isn't this all too much technology? Aren't we losing the simplicity?

A To my mind, the whole point of technology is to give me a better flying experience. My Cambridge LNAV/GPS-NAV equipped ASW 24 enables me to make much longer and faster flights than my very first glider, an SGS 1-34, that had no computers. More than two decades ago, I flew all my Silver, Gold, and Diamond badges in that wonderful ship and I loved it dearly. But I wouldn't go back to it. I'm looking forward to that glass cockpit ... ❖

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Training for cross-country

This article is a transcription of a recording unearthed from a series of lectures Dr Reichmann presented at an international soaring symposium given in Australia in 1988. The content is timeless.

Dr Helmut Reichmann

from *New Zealand Gliding Kiwi*

The modern Olympic sports have developed to be competitions in physical skills. The psychological state of the athlete plays an additional role, while the intellect has a minor influence on the question of winning or losing.

Gliding seems to be different. The main emphasis is given by the intellect, physical condition is a prerequisite and the psyche plays an additional, important role. Considering these facts, gliding training is different from the common interpretation of training in physical sports. To achieve the aim of the individual or even the absolute maximum in performance (the aim of any training according to the definition in *Mayers Encyclopædia*) in the sport of gliding, training has to develop the physical, the psychological and, in addition, the intellectual.

As far as physical skills are concerned in gliding, we may understand this as not only the physical condition of the pilot but also the ability to control and to steer a glider perfectly. That means in any maneuver the yaw string should stay in the middle, thermals should be centred quickly, the pilot should be aware of stall situations early enough to prevent any danger, and spin recovery whenever needed should be a routine as well as outlanding procedures.

By psychological skills we may understand this as good motivation and positive thinking. Generally the stress should be limited to just an amount which allows the pilot to reach the maximum performance. Even in extraordinary situations when conditions may be very stressful, the pilot should still be able to control his mind and his reactions.

By intellectual skills we may understand this as a background of knowledge in gliding theory as well as the experience we have gained from other people or by our own flights. In addition, what I personally think is very important, the pilot should know about the importance of facts influencing flight decisions. He should be able to set the right priorities even if he has to handle a lot of contradictory inputs!

Quite often, maybe every minute, many alternatives like "should I fly more right or left? ... faster or slower? ... should I circle or not? ..." and so on, have to be recognized, weighed, and should lead to a definite decision. It may surprise you, but the combination of state of mind

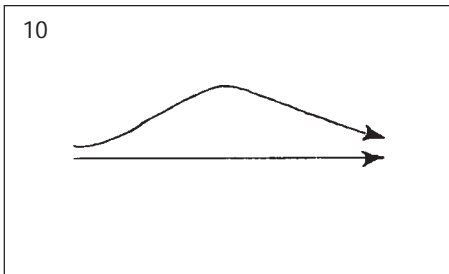
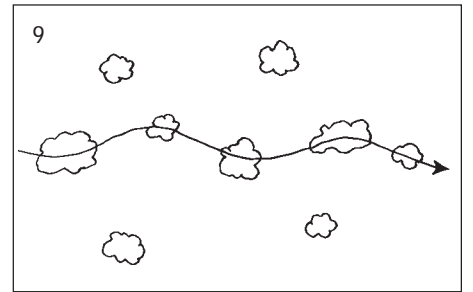
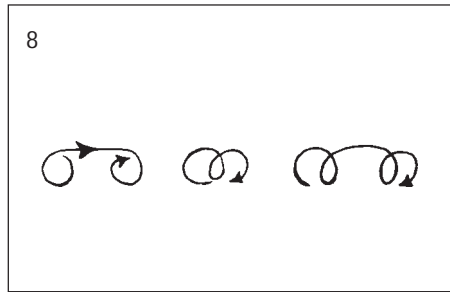
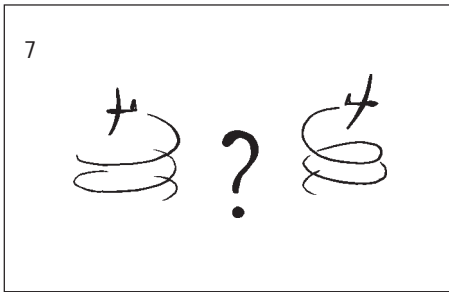
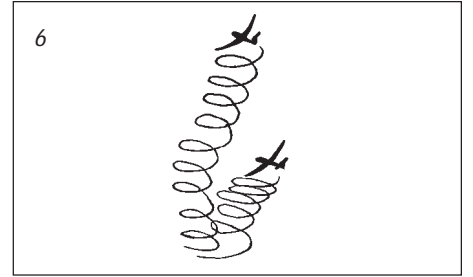
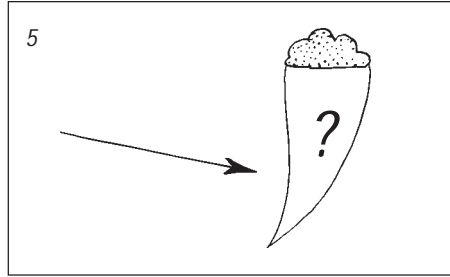
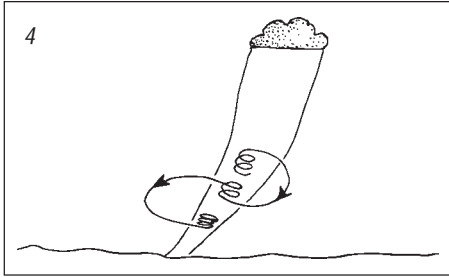
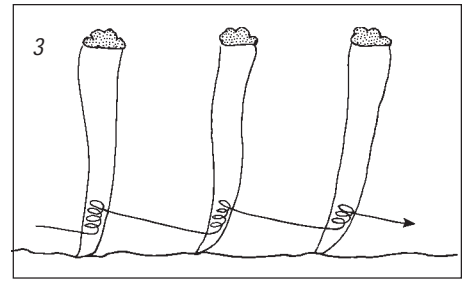
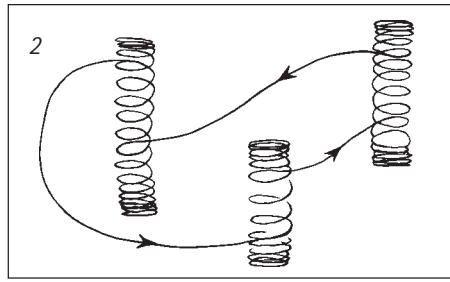
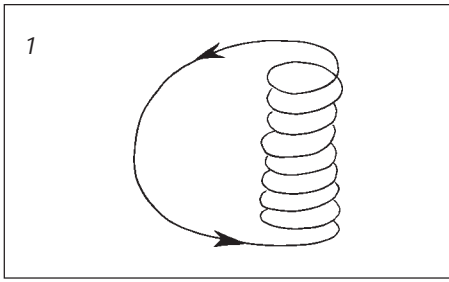
and physical condition in gliding seems to meet the Olympic ideals better than some well-established Olympic sports just performed at Seoul. Maybe some Greek athlete of the past who raced in a cart towed by a lot of horses would prefer today to fly a gliding competition trying to win nothing but honour instead of joining the Olympic games which suffer from omnipresent public relations people, from politics, and from lots of money.

You may wish to hear a lecture which comes from practice, deals with practice, and leads to practice. So I will try to meet this interest and perhaps get you to continue to think about training a little more, do something more, maybe fly a little better, or help others to improve.

Questions concerning training are seldom like mathematics: beside a clear right or wrong there is a maybe, a let's try, and a very individual influence of the person who deals with training. I cannot do otherwise than give you my opinions. They may not always be the same as yours. Nevertheless I will do it frankly and sharply enough, and so try to encourage you to question me when you think it's worthwhile or necessary.

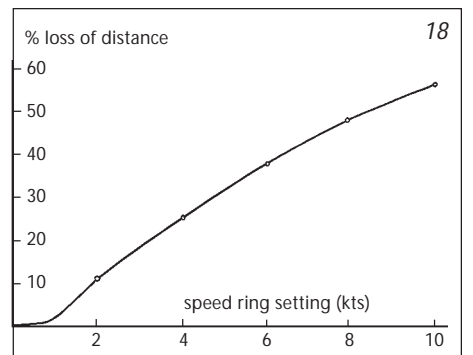
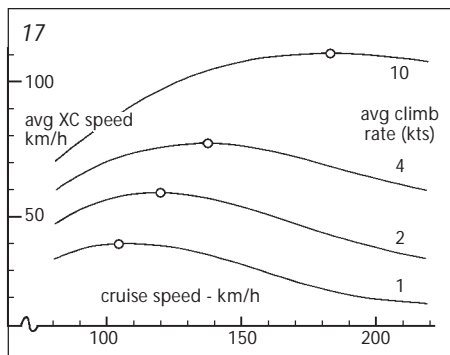
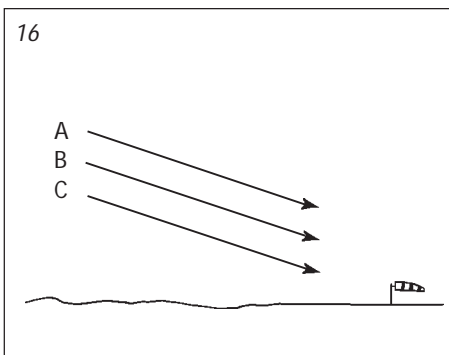
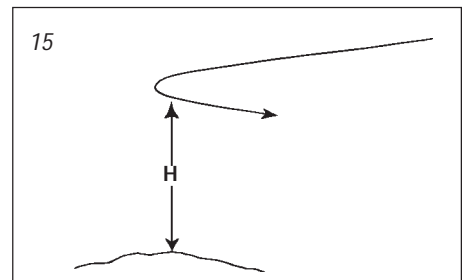
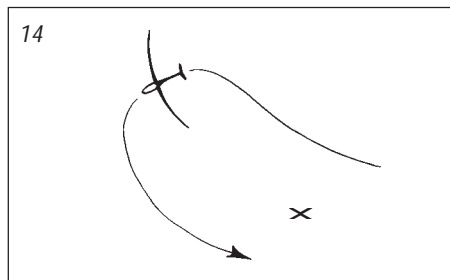
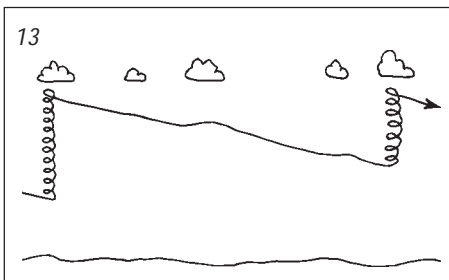
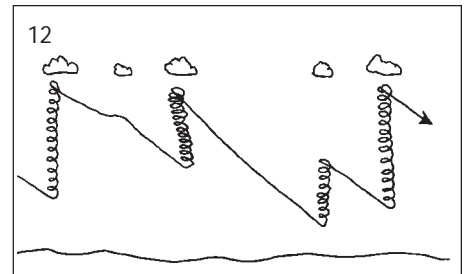
The Glider Here are some ideas on which glider could do which job in training:

- Any glider whose penetration performance is somewhat around or better than, let's say 28, should be well for training purposes.
- Good pilots fly well in any glider. Bad pilots fly badly in every glider.
- The development of a pilot's skill should be very independent from the performance of the glider.
- Money can buy a good sailplane. Money cannot buy a pilot skill — sometimes it's the contrary!
- Easy-to-handle and easy-to-read instruments make it easier to fly.
- High-tech computerized instrumentation needs the attention of the pilot. Only very few pilots know not only how to handle all functions of their computers but also know the more or less inevitable faults of the complicated pressure measuring and calculating systems which characterize instruments.



11

Final climb
= *speed setting*
= *initial climb*



I know these sentences sound a bit extreme. Sure, a pilot needs some 20 hours to get accustomed to fibreglass when he only flew old gliders before. After another 20 to 30 hours in large Open class gliders the pilot should also be able to fly these gliders well enough for a competition entry. The result in speed and distance is always produced by the combination of glider performance and pilot skill.

But, the pilot's skills themselves may not be developed more successfully by using sophisticated gliders at a rather low level of pilot skill. Do you know the proud and at the same time anxious faces of some well-situated private owners who have little experience but have just bought the very best glider? There is no way to perform better without the uncomfortable and time-consuming way of learning and training. Good, if they bought two-seaters which they share with experienced pilots. Wonderful, if there is sponsorship, but dangerous if there is neither of these but only the strong ambition which comes almost automatically when they own a supership. Compared with single-seater sailplanes, two-seaters have a lot of advantages and very few disadvantages concerning cross-country training. Motorgliders offer special possibilities and advantages too but they may leave the pilot with a false feeling of safety as no outlanding (which has risks) may be necessary, and he may lose low altitude and outlanding experience.

Flying tasks for training As a lot has been published on this item it might be sufficient to give a survey and to add some proposals, some of which have been practised in training camps. Others are just ideas.

Training in thermal skills

- Leave the lift and use airbrakes to lose 1500 feet of altitude, then try to find and centre the same lift again (figure 1).
- Change thermals as soon as the climb rate drops below a fixed value. In case you drop lower than a fixed altitude use weaker lift also (figure 2).
- While always in reach of a safe airport landing, try to use thermals at low altitude. Fix a minimum flight altitude (figure 3).
- While always in reach of a safe airport landing, explore the trigger point and the very low part of a thermal. Circle lower, step by step by leaving and entering the thermal again or just by using the airbrakes (figure 4).
- Predict the strength of the next thermal in out loud before you fly to it. You will be astonished how often you are wrong (figure 5).
- Try to outclimb everybody but always without disturbing their flight (figure 6).
- Circle during a whole day only in the direction you don't like (figure 7).
- Fly with a maximum allowed wing loading in weak conditions.
- Centre thermals differently from what you are used to doing (figure 8).
- Climb like the birds. Centre thermals according to your feelings; no visual or acoustic vario reading.

Training in straight flight

- Low altitude loss. Minimize circling time (stop watch

or computer control) by deviations (figure 9).

- Minimize in-flight navigation by improving flight preparation. Try to do it so well that you almost don't need to use the map when flying.
- Experience different alternatives when you fly together with your friends (figure 10).
- Try to fly according to the speed-to-fly rule (figure 11).
- Fly with a too high speed setting — but stop this game before you have to land out (figure 12).
- Fly with setting 1-2 knots in strong conditions but circle only in the very best of thermals (figure 13).
- Avoid load factors less than 0.5g to avoid loss by excessive drag.

Turnpoint training Fifty percent of pilots who have documented at least ten flights never have a problem with the turnpoint photosector. We should always teach our student pilots how to fly and to photograph a turnpoint long before the disappointment of a negative flight document occurs.

The fixed camera mount is a must, especially for newcomers. There is a very simple method using suction cups to attach the camera to the plexiglass of the canopy.

Fly a turnpoint photo-safari. Take one photo per turnpoint only. Check photos and sector after the film has been developed (figure 14).

Final glide Fly a calculated final glide to every turnpoint. Arrive at the turnpoint at an altitude you choose before the flight (figure 15). Fly calculated final glides to your airport. Diminish the calculated arrival height as you get more experience and when conditions are strong (figure 16).

Landing

- Every landing has to be a spot landing after a standard approach pattern. Try to touch down and stop within 300 feet.
- Become a frequent outlander by choosing and flying tasks to the maximum of the daytime. You will soon consider outlandings to be a normal standard procedure and you will stay in practical experience.

Organized training in clubs and camps For successful training in groups, the absence of any envy is a must. This is easy to say but rare to find! We should see our aim in making talented pilots much better than ourselves. The club should provide material and financial help for talented pilots whose talent to make money is underdeveloped.

- Fly the same or a similar task together.
- A pilots' meeting before and after the flight will provide fun, provide motivation, and be good for thirst and for camaraderie.
- Start your race at the same altitude and time. For better comparison meet again after a while at the altitude of the lowest participant for a new racehorse start.
- Groups may team fly against other groups or against individuals.
- Fly according to the competition rules of the competition you prepare for.
- The best pilot should tend to fly a slower glider instead of the best when racing against each other.

- Fly Pilot Selected Tasks (PST). They are fun and you will learn a lot.
- Try different possibilities of team flying ranging from close pair flying to loose information teams.

Two-seater training

- Learn from observing and asking a good pilot during his flight by being a passenger.
- Change control between pilots after approximately every hour.
- Explain what course you steer and why. Say what you expect the conditions to be next.
- Accept corrections to your flying style.
- If you are interested in optimizing a two-seater flight, have a definite splitting of tasks. One of you should be the responsible pilot. The other would advise but never complain! Navigation, radio, calculations etc. could be the task of the second pilot. If you like, you could add very important arrangements on who will prepare meals and drinks. In fact, flying two-seaters cross-country is great fun!
- For training purposes the task could be that each pilot does exactly what he needs to train instead of doing what he knows he can already do best. Disadvantages in two-seater training occur when the pilots don't fit together and when it's not clear who is responsible and for what task. I know of a crash at the home airfield of two instructors flying together in a K13. When their club friends came, they were still arguing who was responsible. Each of them thought the other had control, but apparently nobody did!

The psychological situation of two-seater pilots is different from that of the single-seater pilots. Being accompanied by a good pilot may lead to a wrong feeling of safety. In any case, he may hesitate to correct you even in a dangerous situation. Long time training for long distance flights should preferably take place in a single-seater.

Motorglider training A motorglider is ideal to discover what is possible and ideal to see how far you can go. In addition, a self-launching motorglider makes flying a lot easier and almost independent of help.

In our national training camps in the French Alps, the motorgliders fly much further than the gliders because the pilots do not fear the very uncomfortable retrieve through the mountains.

It is interesting that motors are not used during almost all flights! In soaring, an outlanding is a long procedure which starts when or even before getting low. Motorglider pilots should not forget how to do all this. Sometimes it may happen that the engine will not start when needed. Considering this, the pilot will decide to start the engine well in advance of a possible outlanding. So he might miss a chance to recover by soaring methods. In competitions those difficult situations usually determine the final results. Flying a motorglider with the possibility to start the engine when conditions get difficult leads to a different psychic situation of the pilot as compared to pure sailplane soaring. This happens automatically and maybe necessarily.

Physical fitness Physical fitness is important for

cross-country training but will not be a subject here as there already exists a lot of literature. Just do something regularly. Don't do it excessively and have fun with it. To learn more about it read a specialized book or ask your doctor.

Training the intellect As mentioned above we should try to get enough knowledge and especially try to get an overview of the factors which influence the flight result. We should be able to judge their importance. Some examples:

- A whole generation of glider pilots suffered from the imaginary need to fly exactly according to the speed ring although already in 1938 Polish publications showed that there is very little influence of the speed-to-fly on the average speed (figure 17).
- A lot of pilots flew and fly unnecessarily low average speeds when they get low, because they are anxious and fly with a zero setting. They don't know that with a setting at 1 knot they have almost the same glide angle and lose much less average speed in case they recover and complete the task (figure 18).
- The speed-to-fly rule: $final\ climb = speed\ setting = initial\ climb$ can be converted into $final\ climb = initial\ climb$ which is very important, while "speed setting according to climb rates" is of more minor importance.

As a result, the speed setting may be open to competition tactics. We may fly faster when we want to catch a gaggle in front and we may fly slower when we are uncertain in estimating the conditions. Both 'faults' lead to very little loss in average speed.

Motivation and stress Stress by itself is not at all something negative. The right amount is just good for maximum performance. Motivation on the other hand must not necessarily always be something good. Too much motivation limits the ability of information uptake and you may fall back into decision tactics which you overcame a long time ago.

Maybe it's helpful to try to have fun in flying. This should lead to enough motivation and avoid excessive stress. In any case, fun is the best value by itself, or isn't fun the reason why you fly?

If this is not sufficient as advice, try to find a reasonable book out of a wide variety of publications on motivation and stress problems and hope to find a way to solve such problems. The secret of quite a lot of very successful pilots sounds more or less simple, like

HAVE FUN, TRY YOUR BEST, TAKE IT EASY

I think the fact that fun seems to be important for gliding success is wonderful. We don't have to struggle one against the other. We try to use a very little bit of the immense power which Nature wastes in the air each day. We get information from Nature herself, from clouds and birds, maybe from other competitors also. We may see them as companions rather than as opponents.

Maybe it's just this which leads to an international friendship among pilots from all over the world, no matter which nation or political system they come from. ❖

Conquering nerves

by Stewart Midwinter

on getting your head straight after an accident

Prologue

The Millennium is the successor model to the Swift, a micro-light foot-launchable tailless flying wing made by Bright Star Hang Gliders in Santa Rosa, CA. The Swift was featured on the cover of Popular Mechanics soon after its release in 1994 and received an award for the best invention of the year in the USA that year. There have now been over one hundred built. I bought one, learned to fly it and set a few triangle records with it before it met its demise at Mt. Swansea, Invermere, BC.

The Millennium is a "Swift lite". Featuring the same design concept, the wing now has a Dacron wing surface over folding aluminum ribs (instead of fiberglass), and no flaps (although it still has elevons and winglet tip rudders). As a result, it's 10-15 pounds lighter, and much more portable — it goes in a long bag on a car's roof rack. I keep mine in my basement instead of in a hangar. I can carry it, set it up in ten minutes, fly it, and put it away by myself. As with the Swift, the pilot lies supine in a hammock-style seat between two longitudinal tubes of a "hang cage", with a stick on the right side. The elevons and tip rudder surfaces are inter-linked to reduce adverse yaw. The left hand can pull on a cord to activate both rudders simultaneously as air brakes. The pilot can take off on foot or be towed up (via winch or ultralight) off a wheel, and land on foot or on the wheel and front skid. A nose wheel is optional, as is a full Lexan fairing. Oh yes, the best L/D is about 17/1 unfaired at 55 km/h, 18.5/1 partially faired, or 20/1 fully faired. Minimum sink is 120-150 ft/min at 35 km/h, and V_{ne} is 110 km/h.

This story is a brief account of my initial flights with my own new glider (back in October, 1997, I flew the pre-production prototype three times at a 40 foot training hill near Milpitas, California).

One step forward, two back

My first flight attempt in my new Millennium didn't go so well. On the evening of the day I picked up the glider, a hot, calm day on a flattish launch at a 1500 foot hill near Tekoa, WA, (70 kilometres south of Spokane), and too keen to wait for a stronger cycle or a better day, I got off the ground but dragged a tip seconds later, yawed sideways then touched down ... taking out the skid, all four chrome moly cage supports, and the left-hand 3" diameter hang tube. As a testament to the energy-

photo not available for pdf file

absorbing powers of this cage structure, I was unhurt. That made two launch failures in 2365 foot launches.

As I reflected upon the mishap, it occurred to me that this was the second year in a row that I had been paragliding for several weeks in Spain, then came home and crashed a rigid wing on my first flight. Last year's flight will be forever etched on my mind, as I spun my Swift into the forest on the top of Mt. Swansea at Invermere, BC. I reflected on the lessons to be learned from that accident in *free flight* last year ("*Interview with a dead man*"; 5/97), so I won't repeat them here.

Thanks to excellent service from Bright Star, I had replacement Millennium cage parts within a week and was ready to go again by the following Saturday. With help from Calgary-area PW5 co-owner Kevin Caldwell, I visited a training hill but the wind was gusting to over 15 mph so I limited myself to a few runs with the glider, not wanting to risk the possibility of a low altitude gust.

Sunday, I was back at the training hill, but this time in light winds. In fact, having been too bold on my first launch attempt the week earlier, I now perhaps erred too much on the side of caution, for I stood on launch for over an hour waiting for the perfect cycle. When it came, the launch was anticlimactic. A good hard run, with some light forward stick pressure, and when the glider had sufficient airspeed it told me quite clearly with a very solid upward push from the hang tubes. With no windsock in the landing zone behind some trees, I chose to land on the wheels (I heartily recommend Millennium purchasers order the optional bolt-on front wheel for use in towing or your initial foot-launched flights). After a repeat performance in another similar cycle, I went home confident I could launch the glider safely — a necessity for my next step.

Into the mountains

Monday August 3, I arrived on launch at Mt. Seven in Golden, BC to find the Western Canadian Hang Gliding Championship in full swing. Over thirty gliders were set up and most of the pilots, it seemed, wanted to come over and play with my stick, so to speak. It made a good impression that I was able to pick the glider ⇨ p25

Stewart prepares to launch the Millennium production prototype last October.
photo: Ernie Camacho

The elements of handicapping gliders

Part 2

How does climb rate translate into achieved MacCready cross-country speed?

Carl D. Herold

This second chapter on the building blocks to handicapping provides some insights into the idealized MacCready cross-country model, the speeds to fly, and the resulting achieved cross-country speed along the course line.

I have provided idealized sets of MacCready curves for four different gliders. These curves presume the climb rates along the course line are uniformly constant and 100% efficient (there is no thermal searching time or centering time loss, all cruise legs are on the course line, and there is no wind). All soaring is performed at sea level at standard temperature and pressure (STP) of 29.92" Hg and 59°F. The potential energy (height) and the kinetic energy (cross-country speed) of the start of the flight and the efficient final glide are not factored

into the achieved cross-country speed. All three of these items add to the achieved task speed shown on these charts. The energy (speed squared) increase due to density altitude of the flight are also not factored in these charts for a fixed achieved climb rate. No sinking air is presumed along the course line during the cruise period to the next thermal.

These charts essentially describe what happens to the achieved cross-country speed as a function of the inter-thermal cruising speed for a fixed climb rate. You will note all four charts have the same characteristics. For each achieved rate of climb curve, there is a best cruising speed to get a maximum achieved cross-country speed. This maximum point essentially describes the best MacCready speed to fly between thermals, all of the same rate of climb.

You will note that the point of maximum speed is fairly flat near the maximum. One can in general cruise at plus or minus 10 knots and make just a small difference in the cruising outcome. The advantage of flying slower provides increased gliding range to the next thermal and the reduced sink rate also means you don't have to make your (right or wrong) decisions as fast. Flying faster than the optimum MacCready speed does create a higher risk in making bigger errors, thus requiring more consistent pilot skills.

I have also made some simple comparisons from these four gliders. For weak conditions, I have drawn a short line through the maxima for weak conditions, and for the strong conditions I have drawn a long line through the maxima. The slopes of these lines represent the increase in achieved cross-country speed in knots per increase in 100 ft/min rate of climb.

You will note that the greatest improvement in speed takes place in weak conditions. The converse is most important — a greater penalty to your achieved cross-country speed occurs if you linger too long in weak thermals, wringing out the lift for the soaring conditions described above. Furthermore, these speed gains dimin-

Table The increase in average cross-country speed for each additional 100 ft/min improvement in lift

Glider	Wt (lbs)	Weak Lift	Strong Lift	X-C speed @ 300 fpm
1-26E	700	6.0 kts	2.4 kts	28.0 kts
Std Cirrus	744	8.4 kts	3.1 kts	38.4 kts
Grob G-103	1279	8.3 kts	3.4 kts	42.5 kts
DG-400/17	1014	11.5 kts	4.1 kts	51.5 kts

A series overview – factors & philosophy

The goal of handicapping is to attempt to "equalize" performance among gliders where the need arises, principally Sports class competition. But what is it exactly that is being equalized? It is the average cross-country speed potential of the glider, which has many elements that this series of articles will introduce and explain. I will not just be describing the theoretical process of handicapping — I am trying to show the complexity of the handicapper's problem.

The series will proceed along these lines:

- First some general graphs on cross-country speed as a function of lift strength (pure MacCready theory) for five typical gliders having a

broad range of performance (presented in the last issue).

- The impact of glider weight on cross-country speed.
- The impact of wind on cross-country speed.
- A following article showing the handicap ratios for the idealized thermal strength, weight, and wind for the same gliders.
- The impact of start gate speed and task length on the handicap.
- With this multidimensional background, I can next show how lift strength, length of soaring day, and winds, impact the percentage contribution of these factors for a broad range of soaring regions, thus providing a lead-in for showing the pilot/contest/

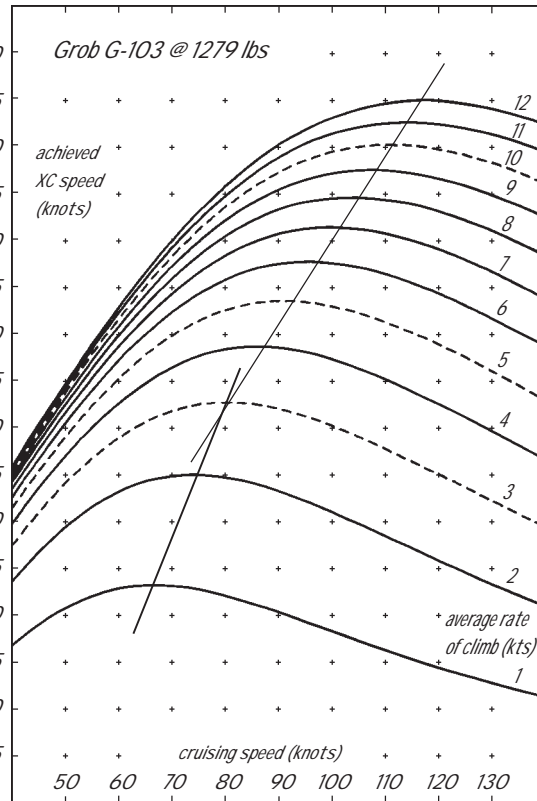
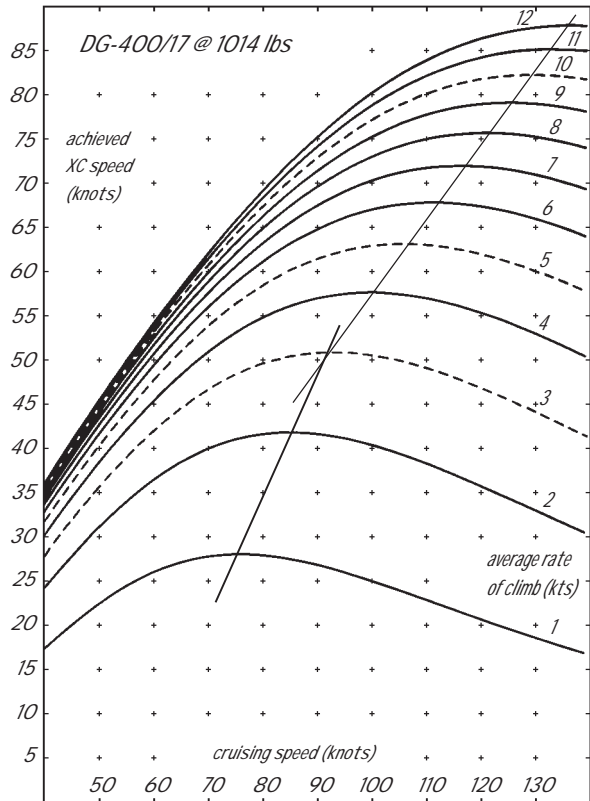
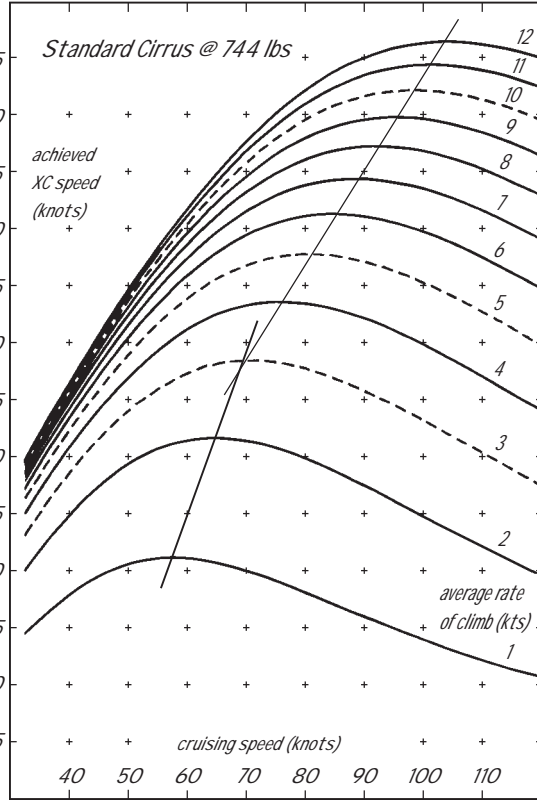
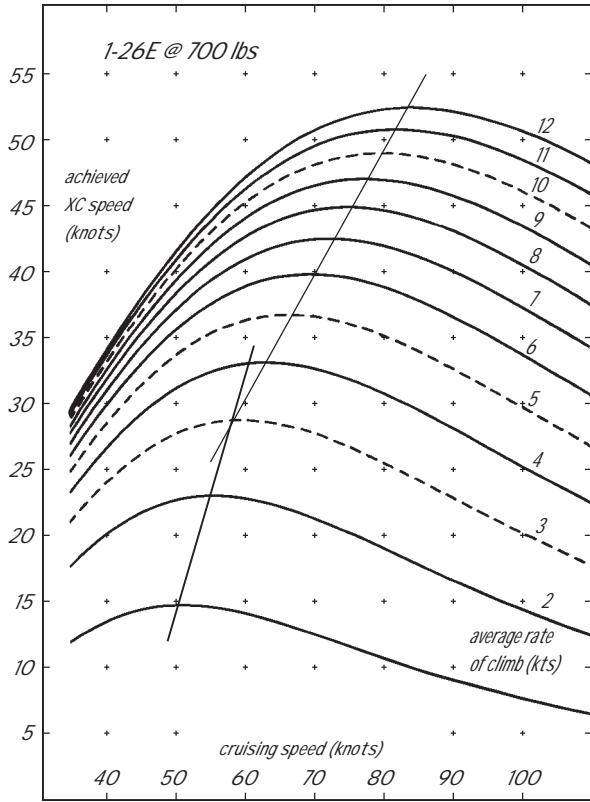
glider performance for soaring sites throughout the United States.

- Once I have presented the simplistic idealized model approach, I will show real contest performance data, and demonstrate that there is a wide gap between the two and they are quite contest site, contest rules, and weather dependent. From this I can show how I merge the results in choosing a handicap.
- With this result, I can then show how the changes in the rules over time make a difference and show the trend in pilot performance, sailplane design, and instrumentation on changing the handicaps over the last forty years.

⇒ p26

ish for all gliders in increasingly strong conditions. This does not imply it is best to fly in weak lift — quite the contrary is true for all gliders. You will also note that the table shows achieved cross-country speeds for an achieved 300 ft/min 100% efficient climb. Study these charts and reason how you would compare the performance of these gliders (develop a handicap).

The next series of chapters will show the impact of task distance, flight altitude, glider weight, start gates, start speeds, wind and final glides on achieved cross-country speeds. In addition, for a few more chapters, we will assume all thermals are perfect cylinders of lift giving all gliders the same rates of climb as they transit through the idealized thermal soaring day. ❖



First adventures in soaring

our rank amateur attacks a cross-country clinic

Doug Scott, SOSA

From August 17 to 21, Canadian Advanced Soaring hosted its annual cross-country clinic at SOSA, in Rockton, Ontario. There were three students enjoying our first clinic, one second-timer, and two past graduates who came along to show off their previously acquired skills and assist the instructors. We had the benefit of five instructors to give us tips on the ground and to shepherd us in the air, which is a terrific ratio. We all thought it was a great experience and are looking forward to next year. The atmosphere is one of gentle encouragement, with each student progressing at his own pace, and there is no pressure to extend yourself beyond your personal comfort level. Having said that, we all arrived with an incentive to raise our own skills and thus the bar a little further each time we flew.

We assembled on Monday morning and introduced ourselves and discussed our experience levels. I probably had the least with 180 flights and just under 77 hours and only 17 flights as P1 of an hour or more. The accompanying comments in my log are generally "good thermalling day", the implication being that anyone could have stayed up, and my skill had not been a factor. My objective here was to learn to stay aloft on less than perfect days. A secondary objective was to become comfortable straying ever further from the field. My only foray beyond gliding distance from SOSA was the recent Dust Bowl, my first contest, wherein I was beaten by a pregnant woman flying a 1-26! (My charitable comrades suggested it was

because she had her own water ballast.) A further come-uppance was delivered by Ian Spence in his 4/98 *free flight* report on the Nationals, where he noted "... 69.1 km/h. The losers in 1-26 contests go faster than that." I was the loser at a miserable 61.1, even after the handicap. Clearly I needed to learn how to get higher, and go further faster.

Last year's class valedictorian dealt with the pee bag issue. My memories are different in that I was never in the air long enough for a full bladder to be a problem, and I had enough reights that I could easily deal with such crises while on the ground. I'd like to think that I enjoyed the course more than he, because I was not pre-occupied with the, uh, internal pressures and could therefore concentrate better.

Day One saw good looking cumulus tempered by very high winds, so up we went to learn how to locate thermals in such conditions, and while aloft to set an appropriate task. Jörg launched and immediately zoomed to cloudbase, followed closely by the others. Then came my first lesson. Though I am a low-time glider pilot, I have reasonable experience cross-country in power planes, and hold an FAI speed record for flying a US Army Air Force L-4 coast-to-coast. I was periodically reminded that the two sports are distinct, and to forget all I knew about power. Well, I launched second, eleventh, and twelfth. You get the picture. I am considering applying for a second world record for the most number of reights in a Pilot Selected Task.

We split up into small groups and headed north, the more intrepid getting out about 60 kilometres, and then back to SOSA and out about 25 in the other direction. I wasn't one of them, having trouble getting much height, and really feeling the effects of the heat.

Lesson two: be prepared to head home if you can't concentrate. Our shepherds were adept in demonstrating how the thermals were far from vertical in the stiff wind, and also inspirational in encouraging us to go beyond gliding distance from home on such a poor day. I managed 1:45 hours, and got about 20 kilometres from the field.

Day Two was overcast and unsoarable, so we devoted our time to discussion and theory. Topics included always having a goal for each flight, task selection, map preparation, glider and pilot preparation, locating and using only the best thermals, thermalling techniques and etiquette, turnpoint photos, final glide calculation, and field selection in the event of a landout.

Day Three was blue, but we were optimistic and set a task of a 300 kilometre triangle. Half the fun was in learning all the things to be done before takeoff. This really reinforced the notion of a purpose for every flight. The task was soon scrapped, and the day became an exercise in finding thermals by locating ground sources. I was astounded to find myself at 1500 feet, 50 kilometres from the club, and not panicking. We were truly extending our limits, and gaining much confidence from the proximity of others.

We decided that one of the big benefits of the course was the ability of a group to encourage its members to venture further than any would have attempted on their own. Also instructive was a spectacular low save by one of the students, proving the benefits of patience and calm. I had a much better day than before, making 150 kilometres over 3:28 hours (note to Ian Spence: my average speed has dropped to 43). Though I was pleased with the day, I still was having difficulty keeping up to the others. Their variors always seemed to read twice what mine did while I wandered around in each thermal looking for the elusive core.

Day Four was blue again, and none of us got more than 10 kilometres away, but it was superb practice in centering weak thermals and learning proper etiquette and safety while circling. I had two low saves, and one reight, for a total of 2:31 h. I took pride that mine was neither the first nor the only reight, but still I was the worst at centering thermals.

Each evening we would have a debriefing and share our experiences. This often helped put something into perspective and more easily understood than while grinding around the

1999 SSA Soaring calendar photo
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Now in stock – the SSA wall calendar, \$18 +\$4 p&h. Order from the SAC office for significant savings over US price.

sky. Kathy Burany spoke to us about her experiences as ground crew, informing us of what is required of a crew and also what the pilot can do to maintain sanity and harmony among the team.

One of the great revelations for me came on the evening of Day Four when someone pointed out that the vario in SOSA's Astir CS-77 is calibrated in metres per second, and can appear to read about half that of one calibrated in knots. Oh, my. To paraphrase Strother Martin from the movie, *Cool Hand Luke*, "What we have here is a failure to calibrate!" This was perhaps my best lesson of the course. Is this how Pilot Error begins? Was I flying an airplane without being completely familiar with it? This was a rented club ship and my recollection is that the checkout involved being able to takeoff without the tail dolly, and to land having lowered the gear. I guess they assumed I was smart enough to figure the vario out. Never assume. I had never heard of a vario reading in metres per second. I'm embarrassed, and beginning to think I should be writing under a pseudonym.

Day Five was forecast to be poor, but in fact became the best day of the week, with consistent cumulus and not much wind. It started slowly, so I let a fellow student take my glider for a spin, so to speak. He came back after an hour and reported that the mechanical vario had a pronounced lag, in addition to the unexpected readout. I had felt the lag, but had decided to learn to trust the instrument. Armed with this information, I decided to try the *electric* vario, which had been there all along, but had also been skipped in my briefing. Again, I had neglected to ask for a lesson in using it. All week, I had been turning late due to the lag, and turning out of perfectly good lift because I was misreading my instrument. Someone in my thermal would declare, "Three knots on the averager", and I would promptly turn away because mine was reading about one and a half. I launched and began to practice all the lessons learned. It worked out well, as I was able to stay up three hours, without a shepherd, and cover about 150 kilometres, visit new territory, make some low saves, and practice final glides. For all of us, the course was a great success. For me, I have been gliding for seven summers, and now I am soaring. In one week, I increased my hours by 15% and my number of flights over an hour went from 17 to 22.

The proof is in my newfound enjoyment of raising my own limits. A few days later, I went up alongside another glider and we practised thermalling together in a two hour flight, staying about 20 kilometres from the club. Two weeks ago, I would have never thought of trying to keep up with this guy and would have instead circled over the club and considered myself highly skilled for doing so.

Thanks, Canadian Advanced Soaring. See you next year. ❖

Club news

Winnipeg Gliding Club presentation to Transport Canada pays PR dividends

On Friday, May 29, 1998 a number of staff from the Prairie & Northern Region of Transport Canada met in Winnipeg as part of a special event. Guests at this special meeting included two representatives of the Winnipeg Gliding Club.

It was an exciting day for Transport Canada, as the department was able to share in the 40th Anniversary of the Winnipeg Gliding Club. To mark this significant milestone, the club presented a framed print of a glider in flight as a gesture of appreciation for the assistance rendered to the WGC by Transport Canada over the years.

Wayne Walsh, Transport Canada - Civil Aviation Branch, System Safety, has worked closely with the Winnipeg Gliding Club to help members keep up-to-date on various topics. Recently, Wayne provided a customized "Pilot Decision Making" course for the members and has offered them safety seminars and briefing over the years. Mr. Walsh accepted the gift on behalf of Transport Canada. "I'm impressed with the Winnipeg Gliding Club's proactive approach to flight safety," said Walsh. "It's also been a pleasure to work with club members who take their sport seriously and are truly aviation professionals," he said. Roger Beebe, Regional Director - Civil Aviation, Transport Canada - Prairie & Northern Region, noted the

department was very pleased to receive the framed photo. "It's an honour and privilege to be acknowledged by the Winnipeg Gliding Club," Beebe said. There is something quite unique about gliding: soaring on thermal winds over the prairie landscape has a special flavour to it".

Attending on behalf of the Winnipeg Gliding Club were Mike Maskell, Chief Flying Instructor, and Norm Pound, a long-time member. The club, in addition to offering training and discovery flights and other club events, will be key players as they host the 1998 Canadian National Soaring Championships to be held in Brandon, MB. The Winnipeg Gliding Club's facility is located near Starbuck, MB, about 40 kilometres southwest of Winnipeg.

This presentation started out as a simple idea to have a glider photo hanging in the local TC office licensing department. After several phone calls to inquire how to go about doing this, the PR people got involved, hence the "formal" presentation/luncheon.

It then went a step further with TC doing a major press release to all the local and community papers at their expense! They will also use the photo and story for their own newsletter. Not bad for a few phone calls.

Mike Maskell

photo not available for pdf file

(l-r) Roger Beebe, Regional Director – Civil Aviation Branch, Transport Canada Prairie & Northern Region, Norm Pound, Winnipeg Gliding Club, Mike Maskell, Winnipeg Gliding Club, and Wayne Walsh, System Safety, Transport Canada at presentation of Photo of Appreciation marking the 40th Anniversary of the Winnipeg Gliding Club.

SOSA celebrates 50 years

The 50th anniversary at SOSA was a grand affair, superbly organized, a lot of the work done by the ladies; the males also helped.

The important factor in the celebration was names, and what history was there of pilots who flew the best performing machines of the 1950s — Schweizer 1-23s and Skylark 3s.

The club history claimed names such as Ames, Brame, Deleurant, Duench, Mix, Oates, Pow, Yeates. Jack Ames was sick and unable to attend, Frank Brame had gone to Boeing in Seattle after the demise of the Avro *Arrow*, Bill Duench no longer glides.

Wolf Mix came fourth in the Standard class at the world contest in the USA in 1970, but sadly was killed in a landing accident at the 1972 world contest in Yugoslavia; a fine gentleman. Gord Oates, a quiet man, had a fatal heart attack a couple of years ago while enroute to Austria for skiing, his state of mind at least still healthy. Owner of a Skylark 3, he once flew to 17,000 feet at Brantford in a cu nim to gain his Diamond altitude.

Willi Deleurant attended the gathering, looking very fit, and must be in his mid-80s. Still a regular glider pilot, he has developed retractable engines for a couple of HP glider designs. He flew for Canada at the Worlds in Marfa, USA in 1970, landed out one day, walked all night to find a house with a telephone, and learned later of the danger of rattlesnakes and scorpions.

Bill Duench owned a unique and handsome sailplane called the Lawrence, but it met its demise with a heavy landing while piloted by Al Pow after clearing trees on the approach. The late Al Pow was a Canadian gliding champion of the late 1940s and early 50s; flying for Canada at world contests in 1952 in Spain and in 1954 in England. An excellent craftsman, he made outstanding restorations of powered aircraft.

SOSA was ensconced at Brantford airport in the early 1950s, and stayed there until the 1964 Canadian Nationals. Charles Yeates seems to have a penchant for adventure; flying from Brantford, he made a fine flight to the west, landing at the US Naval Base at Grosse Ile, Michigan. On another occasion, flying from either the Gatineau club or MSC, he landed at the Strategic Air Command bomber base at Plattsburgh NY, and was made to lie face down in the back of a truck, with a rifle pointed at him. Happily his wife arrived with the trailer and told the same story as Charlie, and the officer on duty knew about gliders, so this episode ended peacefully. He is off on another trip to Australia and no doubt will enjoy more adventures.

Attending in person was Bruce Cooper, another pilot of the Brantford era, who had the

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Glenn Lockhard, now a Gatineau member, chats with Ginny and Paul Schweizer under the large marquee tent that was erected to shelter the many visitors to SOSA.

misfortune to lose part of a wing in an LK and falling down on the airfield, but survived along with his passenger. World contest pilots from the 1960s, 70s and later were also on hand, such as Dave Webb and Jim Carpenter, Wilf Krueger, Hal and Ulli Werneburg, and Jörg Stieber. Dave had a Slingsby Skylark 4 delivered to Argentina in 1963 for his first world contest, where he came ninth in the Open class. Charles Yeates also flew in that contest, coming ninth in the Standard class, flying a Ka6. Jim Carpenter was sixth in the Standard class at the world contest in Châteauroux, France. Hal and Ulli flew in several world contests, Ulli reaching eleventh in the 15 metre class in 1981 in Germany.

Distinguished guests were Paul and Ginny Schweizer from Elmira, NY. Paul was a regular attendee at SAC annual meetings for many years, bringing news of events south of the border. An excellent pilot, Paul flew for the USA. He also acted as crew for Paul MacCready at the 1954 world contest in England where MacCready flew a late model 1-23.

Stories of the origin of the SOSA Gliding Club are varied, depending on the memory of who you asked. Pat O'Donnell, a solid anchor of the club, wanted the real gen, so he had Glenn Lockhard sit in Dixon More's mobile home (Dixon is another SOSA stalwart), and with a tape recorder, Pat heard Glenn's account of the early days of gliding in the Toronto area, where Glenn had flown in 1948. With two partners, Glenn started the Rideau Valley Soaring School at Kars. He is now back with Gatineau at Pendleton.

The problem in writing an account of this anniversary is there are so many names of people who were and many who still are the life and soul of the club, and one should really

try to list all of them but still feel unhappy about those left off the list, but here are a few that I know — Tom Coulson, one of the dependables, the Burany brothers, Andy Gough, Ian Spence, Chuck Keith, Colin Bantin, Aydin Salivar, another good worker, Ralph Dopheide. Visiting was Deryk Brown, who started a commercial gliding operation, flying from Markham (or was it Tottenham?), Ruth Thumm, who started Beaver Valley Soaring, and Dale Kramer, a co-designer of the *Lazair* ultralight.

I was pleased to see ex-MSA members John Chamberlin, Jackie Courval, Hermann Kurbis and Steve Liard. Hermann has the distinction of holding the position of CFI in Winnipeg, with MSC, and at SOSA. Steve Liard reminded me that he had received his early training with MSC with a Boy Scout troop which owned a Schweizer 2-22, PBJ. Returning visitors were ex-SAC president Bob Carlson, John Schanz, Ian Grant (now with Gatineau), and John Kelley. A SOSA oldtimer, John learned about gliding in England from his school teacher, one John Simpson, who owned a Rhönsperber glider before the war and who has conducted research on sea breeze fronts. It was a pleasure for me to see a Glasflügel H301 Libelle, still in very good condition. This one was originally imported by Willi Deleurant, sold to Jim Carpenter, and is now with a new owner at SOSA.

Party time was in the evening, with a buffet meal under a large tent, the evening warm and pleasant. This was followed by a slide show, and there were stories to tell. Such anniversaries are events to remember. There should also be mention of wives, essential partners of our heroes. Many were there, handsome ladies all.

Bob Gairns

Hangar flying

"Maggot race" demo

On practice day of the Region 8 soaring contest in Ephrata, Washington in late June, we had several volunteer amateur radio operators demonstrate this program for us.

Three seasoned contest pilots (Stephen Northcraft, Nelson Funston and Stu Larri-more) were the pilot volunteers. We placed in each of their gliders the following components connected together:

- a separate GPS unit (didn't use the units they use in their ships),
- the Terminal Node Controller (TNC),
- a handheld ham radio transceiver operating on 144.390 MHz.

The ground station (with a 21-inch display monitor) was running *Win95* and Brent Hildebrand's *APRS+* software. This software interfaces with Delorme's *Street Atlas 4 & 5* CD-ROM mapping software of the USA. The ground station had a radio receiver connected to another TNC packet radio controller. The controller fed the glider-transmitted data into the RS-232 port and displayed the positions of all three gliders about every 20 seconds on the Street Atlas map.

It was lots of fun to watch. The TNC can be programmed to transmit various GPS NMEA data sentences to display the data on the Street Atlas screen. For example, we could see the updated course and speed information being reported by the GPS and also the GPS altitude. The gliders were displayed with various coloured icons in the *APRS+* software so the glider icons can have their contest numbers displayed on the map.

The Hildebrand software also allows you to set alarms so that the computer can invoke a WAV file when a glider gets within a certain distance of the airport ground station, which is nice to alert folks that the glider is on its final leg before the pilot announces on the radio. If you have a programming background, I'm sure you can think of other aspects that a program like this could accomplish.

One thing we learned is that the system should be driven by a separate battery so you don't run out of power. One contest pilot was about 50 miles away when the AA batteries in the Garmin GPS powered down. It was somewhat amusing to see the software think he was 150 miles away and had attained a speed of Mach 1.2 to arrive at that false position! In another glider, the GPS signal got haywired by carbon fibre in the fuselage area and we didn't get reliable GPS signals from that glider. It just kept reporting his position several miles south of the airport.

Another obvious issue of using this gear in a contest is the implications of each glider's crew now knowing how the other gliders are doing, and that has to be addressed. Overall, however, the ability to see where the gliders are is fairly attractive to folks on the ground.

The data rate was 1200 bps, and we think we experienced some data contention. It would thus probably be prudent to choose a higher data rate like 9600 bps and use a higher frequency. The first reported use of this approach was by Mike Parker of Arizona, and he made a nice presentation at the SSA national convention in Dallas that attracted a lot of interest.

Hope that this info helps. If you can accept it, I could send you a screen shot via e-mail of what the Street Atlas screen looked like. It probably would be a BMP file. E-mail me at deckert7@gte.net if you are interested.

Dennis Eckert

Std Cirrus pilot and ham KB7ST
from rec.aviation.soaring

The FAI 1000 km Diploma

Ron Ferguson

from the Seattle Glider Council *Towline*

For decades, the 1000 km Diploma has been the ultimate achievement for many long distance cross-country soaring pilots. By way of background, the very first 1000 kilometre flight was made in 1964 by a USA pilot, Alvin Parker, flying a Sisu north from Odessa, Texas. It wasn't until 1970 that the second 1000 was made, this time by the famed Hans Werner Grosse, flying his ASW-12 from Lübeck, Germany to Biarritz, France. Lübeck is in the far north of Germany, right on the Baltic Sea coast. Biarritz is in the southwestmost corner of France, nestled at the foot of the Pyrennees on the Spanish border. I distinctly remember this flight by Grosse as I was living in Belgium at the time and it was my very first year in soaring. Grosse's flight was headline news throughout Europe, and when we heard that his flight path was almost directly overhead of our club south of Brussels, we were in absolute awe of this feat. At the time, we were venturing about one thermal away from our airfield, and the thought of a thirteen hour flight that diagonally traversed almost the whole of Europe was just astonishing!

Then, in the mid- to late 1970s came the famous Karl Striedieck out-and-return flights down the Allegheny ridges that smashed the distance records. With his unbelievable redline flights down low on the ridge, Karl was also setting both speed and distance records that

would last for years to come. By the early 1980s, it was Hans Werner Grosse who was again making soaring headlines, not in Germany, but in the wide open spaces of Australia, out of Alice Springs. Within a few years though, New Zealand became the most talked-about soaring spot for incredible distance flights, with their unbelievably fast 1000 kilometre flights that could start as late as noon and be completed by end of daylight (to this day, New Zealand still has the only 2000 kilometre flights ever flown, first by Ray Lynskey, then by Terry DeLore).

So, while browsing through the soaring badge page on the FAI website, I decided to take a closer look (statistically speaking) at where the best soaring vacation spot in the world might be if one had a hankering to get the *1000 Kilometre Diploma*. I came up with the following tidbits (not totally accurate and verified, and not completely up-to-date). Here's a compilation by country of flight origin: USA 97, Spain 45, Australia 38, South Africa 27, Austria 26, Germany 19, New Zealand 13, Namibia 11, Switzerland 5, France 5, Canada 3 (*by Apps, Marsden, and Kleinhempel*), then a smattering of others that each have one or two.

Obviously, the USA is the clear winner, based on the sheer numbers. Well over a third of these are on the Allegheny ridges, starting from the usual soaring locations at Karl Striedieck's or Tom Knauff's airfields in Pennsylvania or at New Castle, VA. For 1000 kilometre flights in thermal, either California or Nevada is the place to be. Internationally, Spain was the real surprise to me. I knew that Ingo Renner spends his northern hemisphere summers in Spain, teaching a cross-country camp for European soaring pilots, then moving back to Australia for the southern hemisphere summer. But unless I'm not reading very carefully, I can't say that I hear very much about long distance soaring in Spain. For 1000 km thermal flights outside the USA, it seems that Spain, Australia, or South Africa are the places to go. The flying in New Zealand is awesome, but virtually all of their 1000 km flights have been in the wave, and until you get the hang of finding it and learning how to fly cross-country in it, it can be a darn tough place to try a 1000 km.

Europe's longest cross-country flight

On 26 April, a flight of 1527 kilometres using three turnpoints was accomplished by pilots Wolfgang Janowitsch and Hermann Trimmel. The flight in a Nimbus 4DM took 14.5 hours.

In almost pure ridge soaring flight, they completed a shuttle between Wiener Neustadt and Arlberg, spending only 4.5% of the time thermalling. For the flight, the pilots used the Austrian Alps from their eastern end through to their western boundary.

from *Gliding Kiwi*

SAC "Membership Meter"

(as of 14 Sept)

Club	Membership		
	90-97 avg	1998 total	% avg
ASTRA	5	11	220
Air Sailing	28	21	75
Alberni	13	13	100
Base Borden	15	10	67
Beaver Valley	12	15	125
Bluenose	37	27	73
Bonnechere	10	7	70
Bulkley Valley	11	1	9
Central Alberta	10	12	120
ChAMPLAIN	56	59	105
Cold Lake	25	20	80
COSA	42	25	60
Cu Nim	62	53	85
East Kootenay	10	22	220
Edmonton	65	51	78
Erin	32	31	91
Gatineau	88	89	101
Grande Prairie	9	11	122
Guelph	29	21	72
London	42	35	83
Mont Valin	4	3	75
Montréal	102	91	89
Outardes	28	21	75
Pemberton	10	12	120
Prince Albert	10	13	130
Québec	39	54	138
Regina	32	32	100
Rideau Gliding	15	11	73
Rideau Valley	36	30	83
Saskatoon	14	17	121
Silverstar	8	11	138
SOSA	128	157	123
Swan Valley	6	7	117
Toronto	19	19	100
Vancouver	96	75	78
Westman	4	2	50
Wheatbelt	6	1	17
Windsor	10	1	10
Winnipeg	68	58	85
York	87	89	102
Non-club	13	20	154
totals	1336	1258	94

Diamant meets Diamant

Friday, 17 April, 5:30 pm, Toronto. After a tough two days at head office (I work for Kodak), I left the company parking lot with my Diamant in tow, which I had trailered from Montréal three days earlier. The Montréal-Toronto drive was boring but easy — the Q.E.W. on Friday night is a lot busier than when I lived in Toronto in the early 70s. In any case, getting to Niagara was half the battle.

I arrived at Keystone Soaring in Pennsylvania around 1 am. The field was soggy from rain. So I parked in the driveway, crawled in the back of the Suburban and collapsed there for the night. Saturday morning, 9 am, I crawled from my sleeping bag only to stare at some huge boxy type of a trailer. Written on the side of this huge thing is DIAMANT. My first thought is, go back to sleep, you're hallucin-

ating. Later that day, I met the owner, Art Babiarz who, I found out, is an expert on the subject of the Diamant. Art proved to be a mine of information and might be a world authority on the topic. I learned a great deal from him. Art saw a picture of the Diamant on a magazine cover in the 70s and fell in love with the machine. Almost 20 years later he was able to fulfil his dream and own a Diamant. As luck would have it, he ended up buying that very same glider.

The fascinating thing about our two Diamants is that they (the gliders) met in the 70s and competed against each other. Art's machine was then owned by George Moffat while mine was owned by John Seymour. My glider is almost stock while Art's has been substantially modified with wings extended to 18 metres. One thing is missing however; neither Art nor I fly as well as the two original owners, unfortunately.

Incidentally, there is a Diamant collecting dust at SOSA. In my book, that glider offers the best price/performance ratio around. The machine at SOSA is a later generation glider with the balanced flaps. With an L/D of 42, it performs as well as a PIK-20 according to Bernie Palfreeman, who owns a PIK and used to own a Diamant. He flew a Diamant again a few years ago and was pleasantly surprised to feel how pleasant a machine it is to fly.

My partners and I love the Diamant because it allows us performance at a low cost. Our motto has become, "We fly like kings but pay like bums."



Il est 5:30 pm, vendredi soir à Toronto. Je remercie mon patron pour ces inoubliables trois jours à Toronto. Un petit saut à la sécurité pour les remercier d'avoir gardé mon planeur dans le périmètre de sécurité, et enfin je suis en route pour le "ridge" à peine six heures de Toronto, m'avait on dit. Le charmant individu qui m'a dit ça voyage sans doute de nuit car le trajet Toronto Niagara a pris trois heures plutôt que 90 minutes. Pas grave, je suis en vacances! Bref, c'est à 1:30 le matin que j'arrive à Julian totalement crevé. Le terrain des Knauff est détrempé, inutile d'essayer de parquer correctement à coté des 30 quelques planeurs qui sont là. Je saute par dessus le siège du Suburban et hop dodo.

9:00 samedi matin, je suis réveillé par les oiseaux du matin, variété bipède vélivole doté de voix puissante. Je m'extirpe donc de mon cocon douillet pour tomber nez à nez avec une immense remorque carrée marquée DIAMANT. Je me suis aussitôt dit: "Pedro, pas assez dodo". Mais non, j'ai beau me frotter les yeux, la vision ne disparaît pas.

C'est plus tard que j'ai rencontré le proprio, Art Babiarz. Art est un fanatique des Diamants. Il a eu le coup de foudre dans les années 70 quand il a vu la photo du Diamant sur la couverture d'un magazine. Ce n'est que 20 ans

plus tard qu'il a pu vivre son rêve et le hasard a voulu qu'il achète ce planeur.

Art est une mine de renseignements sur le Diamant et probablement l'expert toute catégorie. J'en ai appris plus en quelques jours que dans les dix années précédentes. Ainsi nous avons découvert que nos planeurs se sont rencontrés dans les années 70, ont été engagés dans les mêmes compétitions. Mon planeur était la propriété de John Seymour tandis que l'autre appartenait à George Moffat, deux ex champion américains. Malheureusement ni Art ni moi n'avons le talent des anciens propriétaires. Tandis que l'autre planeur a eu des modifications importantes, dont un allongement des ailes à 18 pieds, le mien est d'origine ou presque.

Le Diamant est sûrement l'appareil qui présente le meilleur rapport qualité/prix avec un L/D de 42. Incidemment il y en a un qui dort à SOSA depuis de nombreuses années et c'est une machine fin de série, ce qui est bien. Selon Bernard Palfreeman, ex proprio de Diamant, l'appareil se compare au PIK-20 quant aux performances. Le Diamant est selon lui un peu plus agréable à voler que le PIK.

Le Diamant apporte à mes partenaires et à moi des performances supérieures à un prix dérisoire. Notre devise est devenue: "Volons comme des rois, payons comme des gueux."

Pierre Pepin

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Alberta Provincials at Cowley

For the first time, the Alberta provincial contest was run in conjunction with the Cowley Summer Camp, and it proved to be a big success. Three days midweek were set aside for the contest, which was designed to be simple, safe and fun. A total of 12 gliders and 17 pilots flew in the competition, which was the largest participation in the last four years. The registration fee was kept to a nominal 20 bucks, which was enough to cover expenses (by \$0.79!) and a vast array of prizes.

Rules were kept to a minimum, all tasks were PST and a new scoring system was tried. Instead of portioning out a maximum 1000 points per day, this simple scoring method awards one point per km for distance, and one point per km/h for speed. Two classes – Sports and Novice – were scored together on a handicapped basis. Novice class was created especially for the two-seater gliders and any pilots new to contest flying. It was permitted the use of three close-in turnpoints to reduce the chance of landing out, and a shortened task time to reduce the perils of “Blanik butt”.

The weather cooperated with cu to help mark the lift, although this year's humidity kept cloudbase at only 4000 feet agl or so (very low for Cowley). Day One started off with very weak lift that improved to 2-3 knots when the inversion broke, but ended early as cirrus cut short the allotted task time for Sports. The next day was cancelled, of course improving the conditions immediately! Day Two was the best of the three days, with some pilots reporting occasional lift of 6 knots or more. Overall, the championship went to Mike Glatiotis, which was very well deserved, as Mike notched both the greatest distance and highest speed in the contest. The Blaniks, however, were snapping at his heels, and Keith Hay showed tremendous improvement to take third place.

The relaxed atmosphere was evident by the sportsmanship shown during the contest. Before the start of Day One, Mike Glatiotis pointed out to me that some lined-up turnpoints would permit continuous ridge running on the Livingstone Range, which he rightly saw as an unfair advantage to those who were able to do so. Mike said in advance that he would not take advantage of this “loophole” and he didn't. Similarly, it was Al Hoar who reported having seen Walter Mueller in a position to claim another turnpoint that was enough to give Walter the win on Day Two.

Having the Blaniks in the competition seemed to confirm that the contest was mainly about having fun. Cowley was certainly a convenient location, and I think we found that the contest could be safely interwoven with the rest of the camp flying as well. So everyone went away with the desire to hold the contest at Cowley again next year.

Terry Southwood

Alberta Provincial Contest

	Pilot(s)	Glider	Hnd cap	Day 1 pts	Day 1 pos	Day 2 pts	Day 2 pos	Total pts
1	Mike Glatiotis	Std Cirrus	1.00	269	2	221	3	490
2	Team TEG	Blanik	1.58	280	1	183	6	463
3	Keith Hay	Mini-Nimbus	0.98	117	4	201	4	318
4	Team EVA	Blanik	1.58	96	7	199	5	295
5	Tony Burton	RS-15	1.00	63	9	222	2	285
6	Jeff Anderson	ASW-15	1.00	105	6	175	7	280
7	Walter Mueller	Tern	1.38	0	12	225	1	225
8	Al Hoar	Std Cirrus	1.00	119	3	92	11	211
9	Lee Coates	Ventus	0.90	117	4	91	12	208
10	Jack Despres	Jantar Std	0.97	52	10	150	9	202
11	Todd Benko	Duster	1.43	27	11	163	8	190
12	Rick Dawe	Jantar Std	0.97	69	8	94	10	163

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SOSA Mud(Dust) Bowl results

Canadian Advanced Soaring and the SOSA Gliding Club hosted the annual SOSA Mud(Dust) Bowl on the August long weekend. The weather was fantastic, with average speeds over 100 km/h recorded every day for the winners. The results presented below show the handicapped speeds and distances for the days. On Day 1, Vtek Pruchnicki flew his Diamond goal flight, and I flew the Thamesville/Flesherton 500 kilometre diamond distance triangle. On behalf of Canadian Advanced Soaring, I would like to thank SOSA, all the competitors, and Colin Bantin for doing the scoring. Congratulations to Wilf Krueger on winning the 1998 Mud(Dust) Bowl. **Dave Springford**

		Day 1 4h PST			Day 2 3h PST			Day 3 2.5h PST			Total Pts	
		Dist	Speed	Pts	Dist	Speed	Pts	Dist	Speed	Pts		
K2	Krueger, Wilf	ASW-27	429	107.2	1000	301	100.4	1000	247	101.7	974	2974
44	Gough, Andy	SZD-55	395	98.7	847	274	91.4	852	245	97.9	923	2622
3B	Bantin, Colin	SZD-55	331	88.3	696	288	97.3	945	227	95.3	866	2507
S1	Springford, Dave	ASW-20	330	82.6	629	273	96.6	919	214	87.5	747	2295
55	Zieba, Adam	SZD-55	267	67.6	350	205	96.2	835	252	103.1	1000	2186
19	Burany, Steve	Kestrel 19	350	87.5	678	233	89.3	776	207	82.8	678	2132
T2	Thompson, Paul	LS-4	339	84.8	662	229	77.4	618	219	90.3	790	2070
J3	Jurgensen, Hans	ASW-20	274	88.9	650	243	85.7	741	199	83.3	673	2064
GH	Parker/Wood	Twin Astir	305	83.5	592	240	80.2	667	204	92.5	798	2057
HB	Berg, Hans	Cirrus Std	339	88.1	700	247	84.5	731	160	74.1	503	1934
JS	Stieber, Jörg	LS-4	0	0.0	0	285	95.1	914	245	98.1	926	1840
XT	Newfield/Bremner	SZD-55w	295	73.8	472	243	83.1	708	145	83.9	610	1790
14	Fryett, Jim	Libelle 301	308	91.6	712	169	84.8	646	158	67.1	409	1767
HK	Rywak, Tony	Jantar Std	284	71.0	456	221	78.0	616	183	80.3	613	1685
HG	Stuart, Dugald	Cirrus Std	306	81.6	597	208	80.8	637	149	69.7	431	1665
AC	Corrigan, Andrew	K6CR	306	76.5	538	239	80.9	675	150	67.6	405	1617
1M	Hunkeler/Bush	Jantar Std	234	65.7	350	263	87.5	788	167	66.8	418	1556
HT	Pruchnicki, Vtek	Astir	270	67.5	377	197	0.0	225	187	75.0	550	1152
LD	Gower/Scott	1-26	139	61.3	213	167	68.1	425	145	60.5	308	946



Coming Events

SAC Annual General Meeting

27 Feb 99 Edmonton. Info as it develops will be presented on the ESC webpage: <http://www.edmc.net/soar/page6.html>

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Club treasurers — thank you

Any club treasurer will tell you they keep track of club money much more carefully than they keep track of their own. While rummaging through some old SOSA paperwork I found some entries that illustrate the point rather neatly. Among the "working papers" clipped to the financial statements for the year ending December 31, 1952 there is a page headed "Itemized Revenue" — some of the listed items are:

sale of logbooks	\$1.00
donations	.36
sale of pop bottles	.20
found	.10
loose change	.02

How's that for being careful!

About the time you get to read this, your club's treasurer will be starting to get the year-end financial statements ready. How about picking up the phone and telling him or her how much you appreciate all the work they do.

Dixon More, SOSA

Ontario/Quebec Provincial Contest

Pilot(s)	Glider	Hnd cap	Day 1 pts	Day 1 pos	Day 2 pts	Day 2 pos	Total pts
1 Ulli Werneburg	ASW-20B	0.90	430	2	1000	1	1430
2 Dave Springford	ASW-20	0.90	433	1	900	3	1333
3 Nick Bonnière	ASW-20	0.90	320	3	906	2	1226
4 Robert DiPietro	ASW-20B	0.90	28	11	841	4	869
5 Pierre-André Langlois	Std Cirrus	1.00	69	7	728	5	797
6 André Pepin	DG 600	0.90	269	4	511	7	780
7 Carole King	Libelle 201	1.01	31	9	665	6	696
8 Team MSC	LS1	1.02	77	6	390	8	467
9 Gilles-André Seguin	DG 200	0.96	123	5	237	10	360
10 Jean-Marc Surprenant jr	Jantar	0.97	0	12	258	9	258
11 Kemp Ward	Libelle 201	1.01	0	12	200	11	200
12 Team GGC	Jantar	0.97	30	10	72	12	102
13 Team SOSA	Astir CS	1.06	33	8	50	13	83
14 Dan Cook	1-36	1.31	0	12	19	14	19
15 Stéphane Surprenant	SZD 31	1.09	0	12	0	15	0

Provinciales Ontario/Québec Provincials

The Ontario/Québec Provincials took place on the Labour Day weekend in Saint Dominique, home of AVV Champlain. André Pepin and Sylvie Arcand organized the event almost single-handedly. We had participants from SOSA, Gatineau, and Champlain. Participating in various capacities in such an event was a real morale booster for our members. Eighteen gliders in two columns on the departure grid is indeed a nice sight.

The winners' names are familiar: Ulli Werneburg, Dave Springford, Nick Bonnière. However, everyone who participated won something: experience, relaxation, new friends. Gliders ranged from the 1-36 Sprite and Ka6 to ASWs and DGs. Participants' ages ranged from 17 to 70. We were so happy to see so many people coming from far to spend the weekend with us. We felt honoured and grateful to have had you with us. Please come back any time you wish, even if there is no competition or a referendum.



Je voudrais m'étendre un peu plus sur la question des compétitions provinciales. Il serait intéressant que d'autres clubs prennent la relève. Le bilan pour Champlain a été des plus positif. Je ne parlerai pas des bénéfices

intangibles comme la motivation des membres. Je vous dirai seulement que nous avons fait plus de 200 vols en quatre jours, que nous avons appris de pilotes chevronnés, que nous avons connus de nouveaux visages, que nous avons donné une autre dimension à notre club, à nos projets de vol.

Pierre Pepin

'99 Contest Seeding List (scores >50%)

15 m	1996/7	1998	Total
Ulli Werneburg	86.91	85.83	86.12
Nick Bonnière	100.00	59.32	71.52
Jim Oke	-	100.00	70.00
Wilf Krueger	96.29	51.85	65.18
Walter Weir	100.00	37.15	56.01
Dave Springford	94.42	39.08	55.68

Standard

Ed Hollestelle	94.67	100.00	98.40
Ian Spence	100.00	71.41	79.99
Jörg Stieber	100.00	68.66	78.06

Sports

Hans Berg	56.88	100.00	87.06
Charles Yeates	85.21	75.73	78.58
Russ Flint	-	91.35	63.95
Tony Burton	78.52	49.58	58.26

Ontario Soaring Ladder

Results as of 31 August

Pilot	Club	Glider	Call	Flts	Tot km	Pts	Pos
George Wilson	LSS	Libelle	JK	4	1451.1	1847	1
Nick Bonnière	GGC	ASW20	ST	10	3214.5	1636	2
Ulli Werneburg	GGC	ASW20B	MZ	4	1657	1491	3
Tracy Wark	SOSA	ASW20	LN	4	1550	1395	4
Jörg Stieber	SOSA	LS4	JS	3	1299.1	1234	5
Doug Bremner	SOSA	SZD55	XT	2	719	683	6
Ian Grant	GGC	LS4	ZT	4	435	413	7

up by myself and carry it across the set-up area to the launch ramp without any help, and then launch it without help. I waited for a solid straight-in 5 mph cycle to provide the best chance of a safe launch — which it was. I didn't want to provide a bad example for the many pilots and spectators!

Cognisant of my last mountain flight on my Swift, my eyes frequently scanned my air-speed indicator before, during and after my transition to feet up and body reclined in the seat. Unfortunately, my good launch was into bad air and I spent the better part of an hour below launch trying to stay aloft, rock-polishing the lower slopes of the mountain in a moderate valley wind and small drifting thermals in an unfamiliar glider, flying at 40 to 60 km/h, that is, 5-25 km/h too fast.

Feeling very uneasy and unfamiliar with the glider, every time I turned toward the mountainside in a thermal and the glider didn't appear to respond instantly to my unskilled hand, I had a flashback to my stall/spin accident; my eyes would immediately go to the airspeed indicator and I'd push the stick forward unnecessarily. Then I'd force myself to slow down again to 40-50 km/h and I would be fine for a few minutes.

I was so uncomfortable mentally that at one point I thought of flying straight down to land, selling the Millennium, and going back to flying only paragliders. Fortunately, I didn't yield to that temptation and continued to struggle. Finally I was able to get up over launch and take my start photo an hour and a quarter into the flight (I had declared a 105 kilometre O&R task).

Once on course, the superior glide of the Millennium was apparent over flex wings, as from 3200 m asl I was able to glide across Mt. Seven and Horse Creek canyon, over all of Mt. Kapristo, and onto the main range south of that. The going was easy along the range until close to my turnpoint in behind Spillimacheen, where I found myself low on some front fingers of the range in what appeared to be south wind, lee side conditions, with rough air that took me weightless once and had me using full roll control deflections a number of times as I struggled to get up in strong but broken drifting lift. In fact, it was so rough that another pilot tumbled his hang glider a couple of kilometres from my location, though I didn't see him go down under his reserve onto the mountain tops. (He was uninjured but had a long walk out; he retrieved his slightly damaged glider by helicopter the following day and immediately headed to the Canadian Nationals at Sun Peaks.)

Last year, and the year before, during identical task attempts on the Swift, I found severe turbulence in this same location near Harrogate (sometimes called Horrorgate!), and both times, like this time on the Millennium, at

one point I experienced some inadvertent phugoid motion (rapid pitch oscillations), like being at the tail end of a whip cracked by the wind god. In fact, I gave passing thought to giving up and heading out to the valley to land beside the cold beer store at Harrogate, but I recalled that this was my fourth attempt, in my third year, at completing this course and I couldn't bear the thought of coming back a fourth year for a fifth attempt! So I hung in.

During this time I noticed a number of things. First, as another pilot has pointed out recently, it seems easier to move the sidestick to the left than to the right (basic biomechanics of the human wrist). Also, while roll control is good, to me it still seems easier to centre thermals sailplane style by successive approximation of the circle than hang glider style by roll reversal. Still, the beneficial effects of the rudder surfaces in eliminating or reducing adverse yaw are quite noticeable compared to the Swift. Another difference from the Swift, perhaps due to the Swift's more rigid airframe, push-rod control system, or different arrangement of controls; I recall it feeling a little more direct, or more connected than does the Millennium. However, my inexperience on what is definitely a different glider may also have been a factor, as later in the flight I grew much more relaxed.

At my turnpoint, a cumulus cloud had conveniently located itself for me to top up under, with cloudbase now reaching 11,200 feet. As I neared the bottom of the cloud, I was reminded of the fact that though deploying both rudder surfaces will degrade the glide somewhat, I was not sure whether they would be as effective as the 55-degree flaps of the Swift in creating sink rate when needed. Though I carried a compass, I declined the offer of a trip to "the white room":

My voyage home was uneventful as the thermals gradually smoothed out and I took advantage of a 10-15 km/h tailwind. In fact, whereas my outbound leg had taken 2:25 hours, my inbound leg took only 1:25 hours. Approaching the finish line (the hang glider takeoff ramp) below final glide, I lucked into a strong but tiny thermal drifting rapidly along the hillside a few kilometres out, and finished with a time of about 3:30 hours for the 105 kilometres.

Facing my demons

With lots of height above the valley floor, I headed out over the Columbia River to face down the demons still lurking from my last flight in my Swift. First checking for my parachute handle, then for sufficient height (3200 feet agl), then slowing the Millennium, I put it into a 20° bank and slowly pulled back on the stick as far as possible. The glider slowed, stalled, then yawed/rolled rapidly to the left, pitched nose down, and commenced spinning. After a turn or two, I'd had enough and I pushed forward solidly on the stick, looking at it to ensure that it was actually moving

forward and that I wasn't just countering strong back pressure, and the glider immediately stopped spinning and dove to regain airspeed. The rapid recovery was reassuring.

A couple of comments about this spinning — on the one hand, having the glider enter a spin so readily may seem scary to some hang glider pilots, but many gliders and powered aircraft have similar behaviour. In fact, knowing that the glider will spin predictably is a good thing, since there are no surprises — and you'll avoid flying too slowly close to the mountainside knowing that a stall/spin could be the result. I had been unable to spin my Swift after several flatland attempts and so concluded (wrongly) it was fairly resistant to them, so when it did spin in the mountains it took me by surprise. Secondly, the Millennium's spin is relatively benign, similar to some sailplanes I've flown — I will likely get around to doing them for fun in smooth evening air. In contrast, a spin in a Citabria is definitely a white-knuckle experience, particularly the entry, in which it rolls past vertical!

After almost five hours in the air, I landed at the usual field at Nicholson. I hadn't ever chosen to land there with the Swift, but on this occasion felt confident enough to try it with the Millennium. The rudder surfaces did their job for glide path control; in fact, I came up a hundred metres short, landing on the wheels since the wind was almost calm. In short order I was handed a cold beer. As I derigged the glider and lifted it onto my vehicle, surveying Mt. Seven basking in evening alpenglow, a few decaying cu floating above, I realized that my initial fears of flying this glider were gone. Instead, the satisfaction of a five-hour first flight had taken hold, with a concurrent 105 kilometre O&R flight completed and two Canadian Class O-2 record claims in hand (speed over 100 km O&R course and O&R distance). As a bonus, neither my launch nor my landing had involved the artistic deformation of fibreglass or aluminum!

Thanks again to Bright Star for building this great glider, similar to the already successful Swift but clearly designed for a different, hopefully wider, market niche. Not a flexwing, not a sailplane, but something unique, combining the poor performance of a hang glider with the inconvenience of a sailplane; er, I meant to say the performance of a sailplane (at least, with the future fairing) with the convenience (almost) of a hang glider. ❖

For more information and pictures of the Swift, Millennium, and other past and present rigid-wing hang glider designs, visit the Rigid Wings website at:
www.globalserve.net/~midtoad/RigidWings/

About the author: Stewart has (so far) the only FAI Silver Badges in all four classes of soaring aircraft: paragliders, flexwing and rigid-wing hang gliders, and sailplanes. He lives in Calgary and was graciously taught what little he knows about sailplane flying by the gang at Cu Nim.

3 Sumac Court Burketon, RR2, Blackstock, ON L0B 1B0
(905) 263-4374 email waltweir@inforamp.net

The following badge legs were recorded in the Canadian Soaring Register during the period 26 June to 2 September.

SILVER BADGE

894	Dariusz Andrzejewski	SOSA
895	Dan Bush	SOSA
896	Martin Vanstone	Vancouver
897	Peter Peerboom	SOSA

DIAMOND DISTANCE (500 km flight)

George Wilson	London	501.3 km	Libelle 201B	Embro, ON
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DIAMOND GOAL (300 km goal flight)

Kevin Clifton	Regina	327.8 km	ASW-19	Strawberry Lakes, SK
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GOLD DISTANCE (300 km flight)

Kevin Clifton	Regina	327.8 km	ASW-19	Strawberry Lakes, SK
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GOLD ALTITUDE (3000 m gain)

Roger Taylor	Vancouver	3260 m	L33 Solo	Hope, BC
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SILVER DISTANCE (50 km flight)

Kevin Clifton	Regina	163.9 km	ASW-19	Strawberry Lakes, SK
Dariusz Andrzejewski	SOSA	62.2 km	Astir CS-77	Arthur East, ON
Leili Pede Foster	York	62.2 km	1-26	Arthur East, ON
Dan Bush	SOSA	65.4 km	1-26	Rockton, ON
Martin Vanstone	Vancouver	53.2 km	Grob 102	Invermere, BC
Peter Peerboom	SOSA	62.2 km	Std Cirrus	Rockton, ON

SILVER DURATION (5 hour flight)

Alan Hoar	Cu Nim	5:06 h	Std Cirrus	Golden, BC
Dan Bush	SOSA	6:17 h	Hornet	Rockton, ON
Roger Taylor	Vancouver	5:10 h	L-33 Solo	Hope, BC
Peter Peerboom	SOSA	6:01 h	Std Cirrus	Rockton, ON
Robert Morse	London	5:08 h	Std Austria	Embro, ON

SILVER ALTITUDE (1000 m gain)

Kevin Clifton	Regina	1250 m	ASW-19	Strawberry Lakes, SK
Donald Macaulay	SAC	1160 m	Astir CS	Clermont, FL
David Ridding	York	1220 m	1-23	Arthur East, ON
Pierre Beaulieu	Quebec	1700 m	Grob 102	St Raymond, QC
Louis Cloutier	Quebec	1450 m	Pilatus B4	St Raymond, QC
Pierre Brousseau	Quebec	1600 m	Pilatus B4	St Raymond, QC
Dan Bush	SOSA	1200 m	1-26	Rockton, ON
Alfred Waymann	York	1340 m	1-23	Arthur East, ON
Roger Taylor	Vancouver	3260 m	Std Cirrus	Hope, BC
Peter Peerboom	SOSA	1300 m	Std Cirrus	Rockton, ON

C BADGE (1 hour flight)

2585	Kevin Clifton	Regina	3:48 h	ASW-19	Strawberry Lakes, SK
2586	Edward Brook	Borden	1:08 h	2-33	Borden, ON
2587	Pierre Beaulieu	Quebec	2:56 h	Grob 102	St Raymond, QC
2588	Ralph Ratssep	Borden	1:02 h	2-33	Borden, ON
2589	Dan Bush	SOSA	6:17 h	Hornet	Rockton, ON
2590	Peter Peerboom	SOSA	6:01 h	Std Cirrus	Rockton, ON
2591	Robert Morse	London	5:08 h	Std Austria	Embro, ON

Chris Eaves, Kurt Meyer and Pierre Pepin have all flown 500 km distances this summer. At this time (Sept 3) Chris has abandoned his claim and Kurt and Pierre's are in jeopardy — all due to problems with the evidence. Kurt and Chris both have flight recorder problems. It's a real shame when splendid efforts are foiled by technical problems.

If you have a flight recorder and intend to try for a badge leg or record you will be well advised to practice the complete procedure on short "dress rehearsal" tasks — just as you must practice with a camera.

Congratulations to Dan Bush and Peter Peerboom who both completed their "C" and Silver C in two flights this year.

NOTICE: if you want your claim processed before April 99, I have to have it before December 1st.

404 Moray St, Winnipeg, MB R3J 3A5 (204) 837-1585 H
dhengr@mb.sympatico.ca

NOTICE OF RECORD FLIGHT

Date of flight: 31 July 1998
Record type: 3 TP distance (joint), territorial, FAI category 3.2.5.6
Pilot(s): Ulrich Werneburg & Dominique Bonnière
Sailplane(s): ASW-20B C-GIKC (Ulli), ASW-20 C-GYMZ (Nick)
Distance: 559.7 kilometres
Task: Pendleton, Brockville a/p, Bonnechere a/p, Vankleek Hill, and return
Previous record: 543 kilometres set in 1997 by Tony Burton

A series overview ...

from page 16

I am not developing or defending my approach to handicapping, I am actually explaining and defining the handicapping problem from a much different vantage point. Eventually my notes will show the limitations in handicapping by just using the MacCready model. Contest results show that the best racing pilots on their better days consistently outfly the MacCready model, and the reasons are quite revealing.

I am trying to methodically provide for the reader some insight into the complexity of the subject and show the differences between the simplistic models and what our best and lowest skilled pilots are doing with their gliders on a comparative basis for the wide range of soaring conditions, gliders, and sites, and (informal and formal) racing rules. One then can better understand that handicapping is a living process, as the handicaps for the past years are constantly changing due to soaring's changing gliders, pilots, instrumentation, rules, soaring techniques, and pilot skill levels. All of these are evolving in about ten year epochs. I should also say that over the years the data shows that the pilots who compete with the most consistency place high in handicapped racing. They might not win, but inconsistency exacts a bigger price in handicapped events than in non-handicapped ones for the scoring rules used.

The real message is the insight the idealized models provide versus the actual performance the pilots/gliders/instrumentation produce and how favoured soaring sites and politics can play a role in what are judged the fairest handicaps. This comes down to what is the objective of handicapping and what is the objective of handicapped contests, and can selected handicaps be insensitive to contest rules and objectives?

Sports class in the USA has for years been able to provide a venue for the owners of noncompetitive gliders to race in a more fair tasking environment. Later these contests became sanctioned, and higher performance gliders moved into the class which increased the performance spread in the contests. Handicapped national Sports class pilots in the USA represent about 50% of all seeded pilots in the USA. Regional competition has been a great incentive to provide a ladder system to develop racing pilots and cross-country pilots in a structured environment.

I am committing myself to a long series of chapters. After a long time I decided to write a book on what I have learned on the subject of handicapping over the last 40 plus years, and decided this series was the best way for me to start documenting what I have learned. In the future I will assemble and edit this material and publish a book on the subject.

Carl Herold

Trading Post

Personal ads are a free service to SAC members (please give me the name of your club). \$10 per insertion for nonmembers. **Send ad to editor**, not the national office, Box 1916, Claresholm, AB T0L 0T0
tel/fax (403) 625-4563, free-flt@agt.net

Ad will run 3 times unless you renew. Please tell me if your item has been sold sooner. Maximum ad length is 6 lines and subject to some editing as necessary.

single seat

L-Spatz, CF-UJZ, 1966, recent fabric and overhaul, basic instruments, radio, Varicalc, open trailer. \$6000. Winnipeg Gliding Club (204) 837-8128 or info@wgc.mb.ca

1-23H-15, C-FZDN, #48, 1050h, 16m span, all metal, fully aerobatic, L/D 31/1. Chute, O₂, encl trailer. May '98 c of a. \$13,000 obo. Mark Saar, (705) 749-2533.

1-23, #16, 1951, 2400h, beautifully refinished, all instruments, trailer. Asking \$11,000. Matt (250) 342-3006 or kaz@rockies.net

1-26A, #23, 1050h, beautiful condition, new fabric on wings, tail and fuselage recently recovered, total refinish in 1996. Excellent enclosed trailer. Asking \$9500. Would consider delivering for expenses. Harold Eley, email: eeley@cableregina.com (306) 584-5712, or Wilbur Eley, (306) 255-2859.

Ka6CR, CG-CJB, #6608, 1967, 1200+h, annualled. In good to very good condition, new instruments, factory trailer. Slimpack chute. Michael Steckner, (440) 473-9365, mks@gwis.com

Pic-3, Finnish glider (Ka6 equivalent), plywood construction, trailer, radio, O₂, chute, all logbooks. \$3500. Klaus Brixia (519) 948-2384 eves.

Skylark 4, fully equipped with trailer, hangared at GGC. Andrew Robinson (613) 226-7616 (H), (613) 723-2299 (W), (613) 237-4152 (F), andrewr@hookup.net

Dart 17R, C-FOAK, easy to rig/derig, basic instruments, trailer (needs repairs), chute, O₂. \$9000 minus AD. Call Sylvain "Bingo" Larue at (902) 765-6865 or bingo@cancom.net

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RS-15, a fun aircraft with impressive performance, 2-5 hrs common. Nice condition with Imron finish. Cambridge vario, Mk 4 director, O₂, radio, Schreder trailer. \$14,500. Bryce Stout (905) 822-1814 ph/fax.

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compass, O₂, water. \$50,000. Based in Ephrata, WA. Harry Peters (604) 856-5456, petersh@uniserve.com

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two seat

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