

free flight • vol libre

3/2000
June/July



PRIORITIES



Now that winter and tax season are far behind us, we can look forward to what promises to be an excellent summer for our sport.

Another award! Ian Oldaker was chosen by Transport Canada as the recipient of their *Aviation Safety Award* for his demonstrated commitment to aviation safety in Canada. This was presented on 8 May at the Transport Canada 12th annual Canadian Aviation Safety Seminar (CASS 2000) in St. John's, Newfoundland by the Minister of Transport, the Honourable David Collenette. The minister stated, "... he has demonstrated exceptional dedication to aviation safety through his volunteer work and long-standing involvement with the Soaring Association of Canada." CASS 2000 is a three-day international event hosted by TC for all sectors of the aviation community.

Following on the heels of Tony Burton's recent receipt of the FAI's Paul Tissandier Diploma, these recognitions do much to heighten the profile of soaring in Canada. We are honoured to have two such capable and dedicated individuals in our sport.

In the past short while, the board has reviewed and given approval to the revised rules for the 2000 Nationals, and appreciates the work that Jörg Stieber and his committee have put into this complicated area, as well as clarifying qualification for international competitions and funding.

Many thanks to Jim McCollum for his hard work preparing accounts and papers for the AGM, and dealing with the membership renewals cards. Please be diligent in dealing with your membership renewals. The SAC office is still following up on individuals who were supposed to be members last year, but for which no notification or fees were received. As a reminder, all students who continue training beyond an introductory package of five or so flights should be SAC members. An accident claim involving an individual who is not a SAC member can cause the club officers and the whole organization to become liable.

By now the insurance renewals are out and should have been dealt with by the clubs. I recognize that the change of policy year has caused some concerns, but this is essential if the Insurance committee is to have sufficient time to deal with competitive quotes and bring you the most cost-effective coverage.

Insurers have asked further for details of our safety audit program. This is being addressed by the Flight Training & Safety committee, but many clubs have not yet set a schedule for completion. We have promised compliance by the end of this year, so I ask that you help yourselves by helping us (*see page 17*). Have a safe and successful season, and work on completing and filing the safety audit in the near future.

Richard Longhurst, president

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3/2000 June/July

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Le journal de l'Association Canadienne de Vol à Voile

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Cover
David McAsey waits for his
tow at Black Diamond
photo: Ross Mason

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International Gliding Commission

– annual meeting notes –

Hal Werneburg, SAC delegate

THIS YEAR'S MEETING OF THE IGC took place in Lausanne, Switzerland from 16-18 March. As the alternate Canadian delegate, SAC asked me to attend the meeting and as I happened to be in Europe at that time I was able to comply.

As always, the agenda was very full with motions brought forward by various national aeroclubs plus regular meeting items such as reports from sub-committees and specialists. The meeting was structured somewhat differently from past practice, resulting in less time spent discussing competition and contest rule details but instead addressing some of the more general issues facing quite a number of IGC member countries. This included items such as overall policy direction of the IGC, involvement with and support of the World Air Games, general promotion of our sport, flight safety, airspace concerns and the steps to be taken to reverse the worldwide decline of membership.

It was pointed out that most changes to airspace use affecting gliding generally originate at the International Civil Aviation Organization, headquartered in Montreal. Canada was asked if we could help establish a presence "on the ground" at ICAO where we at least would be informed at an early stage of developments which might have an impact on soaring activities. Perhaps the Aero Club of Canada could play an active role in this endeavour. The FAI web server has an *Air Space Information Channel* which is designed to be an information exchange device and needs contributions from airspace "specialists".

Flight safety was discussed at length and the magazine articles by our Jörg Stieber on sight and flight and by Herbert Pirker (Austria) on collision avoidance received favourable mention. It was also pointed out that a very useful "Flight Safety Channel" exists on the FAI web server, which should be supported.

A list of IGC policy objectives was promoted with the intended goal to make "soaring" a high profile international sport. To this end a list of action plans and supporting objectives was developed which would employ the latest technology tools and highly developed promotional methods to publicize the sport. Details of this will be available later. A name change to "International Soaring Commission" is also contemplated to help give our sport a more dynamic image.

Discussion on the international competition line-up ranged far and wide. A structure was proposed which extends the competition calendar out to the year 2006 and attempts to streamline the hosting of the multitude of world contests which have appeared lately. The long term goal of IGC is to allow only one pilot per class/country in any IGC sanctioned contest. This will take some years to implement but should be reached (in stages) not later than by 2004.

Details of discussions regarding rule changes in the Sporting Code are too numerous to be reported here; these items will appear in the official minutes of the meeting to be published on the FAI/IGC website in the near future. Any rule changes will not be effective until 1 Oct 2000 in any case.

The following items were culled from my notes; obviously this list is not comprehensive:

- FAI is developing an aviation-related TV program with financial help from the Discovery Channel.
- The incoming FAI president will be Wolfgang Weinreich, current president of the German Aero Club and an active glider pilot. This should be good for our sport.
- The family of the well known international gliding competitor Alvaro De Orleans-Borbon has provided a sizable fund which will issue prizes to honour technical advances in aviation.
- The first Club Class world contest in Gawler, Australia (Jan 2001) requires interested pilots to make glider rental arrangements ASAP. The following contest will be held in Musbach, Germany, in August of 2002.



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 Canadian team pilots for 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.

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

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

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Deadline for contributions:

5th January, March
May, July
September, November

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 vélioles aux normes de la FAI, telles les tentatives de record, la sanction des compétitions, la délivrance des insignes, et la sélection des membres de l'équipe nationale aux compétitions mondiales.

vol libre est le journal officiel de l'ACVV.

Les articles publiés dans *vol libre* proviennent d'individus ou de groupes de vélioles bienveillants. Leur contenu n'engage que leurs auteurs. Aucune rémunération n'est versée pour ces articles. Tous sont invités à participer à la réalisation du magazine, soit par des reportages, des échanges d'idées, des nouvelles des clubs, des photos pertinentes, etc. L'idéal est de soumettre ces articles par courrier électronique, bien que d'autres moyens soient acceptés. Ils seront publiés selon l'espace disponible, leur intérêt et leur respect des normes de qualité du magazine.

Des photos, des fichiers .jpg ou .tif haute définition et niveaux de gris peuvent servir d'illustrations. Les photos vous seront retournées sur demande.

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.

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

Pour signaler un changement d'adresse ou s'abonner, contacter le bureau national à l'adresse à la gauche. Les tarifs au Canada sont de 26\$, 47\$ ou 65\$ pour 1, 2 ou 3 ans, et de 26\$US, 47\$US ou 65\$US à l'extérieur.

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- The 3rd World Class Championships will be part of the 2nd World Air Games in Lillo, Spain in 2001.

John Roake of New Zealand has proposed the creation of a 5-10 minute long "give away" soaring video. This video, created from existing commercial quality film, would be given to introductory passengers as a souvenir of their glider ride. John thinks that if he gets orders for 10,000 videos he can deliver them for about US\$2.50 each. I believe there would be a demand for this in Canada and suggest SAC clubs should investigate this idea further. I am willing to coordinate any orders from clubs with John.

Further notes by Ross Macintyre of New Zealand

A report from an anti-collision committee set up last year was inconclusive. High visibility markings on the wings were not the answer, and strobe lights were too power hungry. Discussion centred on the need for lookout and training for good lookout. New developments such as ADS-B (*the new GPS-based collision avoidance and traffic monitoring system noted in ff 5/1999, page 21*) were a possible aid, but some doubted that it would be useful in a busy thermal. It seems nothing will replace the Mark 1 Eyeball as originally fitted!

The development of real time coverage of gliding races as they were happening was tried at the World Championships in Bayreuth in 1999. This was shown on TV screens as position on a map continuously upgraded from devices in cockpits of selected pilots. The technology worked! Plans for 3-D coverage of the World Air Games in Spain next year are well advanced and could lead to making the sport more interesting to the public.

The Russian delegate reported that in his country youngsters as young as 11 years fly gliders solo. This happens on winch tows in specially built, small gliders at altitudes not exceeding 10 metres. Apparently the flying is quite safe and no accidents have been reported.

In Germany a group of five enthusiasts (including some world famous glider pilots) have, at this point, invested over a million Deutschmarks (Cdn\$800,000) in the development and construction of a super-sailplane with a wing span of 31 metres. It is expected to fly later this year.

The Australians have developed an interesting competition concept which they call the "International Soaring Grand Prix" (*see page 18*). The scheme appears to be a viable alternative to our historic competition tasks and I have some preliminary details available for anyone interested.

The IGC website specialist, Peter Ryder, reported an average of 7000 requests and 1700 visitors each month. Half of this comes from USA. Use of the website is encouraged as is the use of e-mail info lists. Discussion boards may be set up but moderators will be needed to "keep out garbage".

The IGC Strategic Plan This is IGC's view of the way ahead. The presentation is available on the FAI website as a PowerPoint document: <http://www.fai.org/gliding/igc-strategy/igc-strategy.ppt> or an HTML version: <http://www.fai.org/gliding/igc-strategy/index.htm>

It is well worth having a look, as this summary cannot cover all the points made. However, briefly, to raise the profile of soaring as an international sport and promote participation at all levels was the overall theme. An action plan made the following points:

- use a professional to help with planning and organization of all FAI international competitions.
- a job specification to be produced for the IGC by 2001.
- share experiences, Ake Petterson to coordinate, Peter Ryder to put on website.
- to produce a ranking list (as the hang-gliding people do).
- produce more revenue from competitive events to fund the professional help.
- use electronic media, website and e-mail and tell about it.
- change the name to "Soaring" rather than "Gliding".
- schedule the IGC (should be ISC) meetings at the same time and place as hang-gliding commission meetings.

These are some of the wide ranging proposals that could change the face of soaring in the years to come and much discussion followed, mostly a positive reaction to the proposals. The plan will be more fully discussed next year. ❖

The perfect partner

David Howse from *Sailplane & Gliding*

Single sailplane, young and good-looking, great curves, cheeky winglets. Would like to meet well-off caring partners with cosy trailer. Love weekend outings, trips away and maybe more. Write soon with photo of trailer to Box 100, free flight.

Trawling for those ideal partners to share your gliding pride and joy can be hit and miss. For some reason, I have been selected to guide you through this potential minefield, although I must admit to feeling rather smug on the subject, since all of my gliding syndicate relationships to date have been deeply meaningful, enriching experiences ...

Getting to the point, selecting suitable syndicate partners by the Howse method requires close attention to a single, simple technique — detailed observation of your fellow human beings. This will be found to be most productive in three areas of the airfield: the launch point, the trailer park and the bar, not necessarily in that order. What we are looking for are individuals or groups with very specific traits or habits which may be of benefit (or otherwise) to your fledgling group. Pile your plate high from the following à la carte menu:

Body language Observe different groups carefully as they assemble their toys. Close-knit groups will generally rig their sailplanes at great speed with minimal comment or discussion. The slickest can even rig in complete silence: with only a few hand signals required to complete the task. (It's always possible that partners are not actually on speaking terms, but the nature of the hand signals ought to give you a few clues here.)

Contrast this model of harmony with the dysfunctional partnership from Hell. Rigging for them is a contact sport, with copious pushing and pulling, shouting and gesticulation, usually culminating in muffled hammering and the sound of something, or someone, or both, getting broken.

Aspirations and expectations Think ahead and, assuming that you are not going to go partner-hopping every year, choose partners with similar or complementary aspirations, expectations and budget. A few examples (fictional of course) might not go amiss:

1. A partner mentions over a beer that he thinks an instrumentation upgrade will be required over the winter. You nod enthusiastically, volunteering to shampoo and starch the yaw-string and buff up the balls in the Cosim vario. Your partner, top lip curling with contempt, indicates that the minimum upgrade consistent with safe operation would be an Internet-enabled fully-integrated flight management system with three axis autopilot and graphic user interface.

2. You catch your syndicate partners in a conspiratorial huddle around a brochure detailing the groundbreaking features of the new Schempp-Schleicher *Phallus 2* sailplane. Your love affair with your beautiful little Ka6 is still fresh and passionate; feelings only deepened by a whispered telephone number, which turns out to be the price of the new glider.

3. Your idea of a gliding holiday is two weeks in Scotland, flying when you feel like it. Your partners favour driving to Spain for three weeks, thrashing around huge tasks at just subsonic speeds every day, and talking about it every night.

4. Your partners nominate you as member responsible for the flying roster. You feign reluctance. After a few months your partners notice that you get all the good days and are doing ten times as much flying as anyone else. Things become ugly, you are accused of wearing out the glider, and your partners signal their annoyance by taking the main wing pin home with them.

5. Your partner is a keen competition pilot. You are equal partners. She (note the gender balance) takes the aircraft away to all the competitions and has convinced you of her urgent need to practise in between, on any remotely promising day. You are permitted to retrieve her over vast distances when record attempts go pear-shaped, and have unrestricted use of the aircraft in April and September. You have full fettling rights during the winter whilst she is hard at work, making up all the time taken off during the summer.

Housekeeping If you're the fastidious, considerate type, make sure your partners are too. It is not unknown for a keen pilot to abandon their ship on the airfield after an epic flight and sprint straight to the bar. Here they will celebrate their success, and regale anyone who will listen with a thermal-by-thermal analysis of how it was done. This can last all evening, resulting in the glider being derigged in the dark, in a rush, in a state of reduced consciousness.

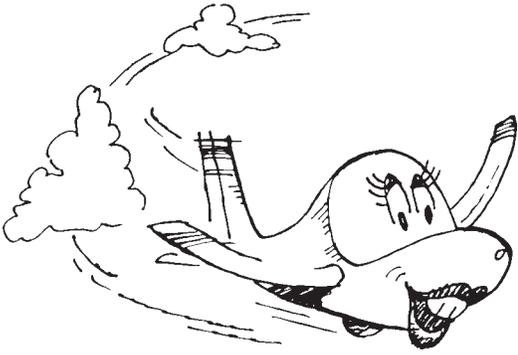
Hapless partners, rigging next day, will be confronted with a cockpit looking like a dumpster, flat batteries, a leading edge resembling an entomological graveyard, and vital rigging tools lying around in the grass. The tail dolly, nowhere to be seen, will be located on ⇒ p12



Robert Hellier

The 12 step recovery program

Mike Maskell, Winnipeg



SHE WAS A BEAUTY.
From across the crowded room where she sat alone, I

could tell she was in a class by herself. Proud, elegant, a classic in white cotton that draped her form, tightly and revealing. A hint of things to come filled the air and the chance of an opportunity to take each other to new heights existed. I had to meet her. As I made my way to her, I remembered that I had given my loyalties to another sleeker, younger partner. Someone whom I had complete faith in, a companion that had led me around the country in search of endless adventures. A partner not to abandon. Yet still, I had to meet this mysterious lady, now just feet away.

I introduced myself and she allowed only a hint of her identity. It became quite clear that my first impression of her was not one of truth. While she did have all the above qualities of form and elegance, it was obvious that she had been abandoned by her previous partner, left alone with others of her kind, but no longer loved or cared for. Her dress had been ripped, her frame older and losing some of its previous strengths, her outreaching arms, now hung useless by her sides. Her love of life no longer apparent. What a sad and terrible end to a life lived and cut all too short.

She was born in 1959, a creature of steel ambition, and of a softer gentler nature, a child of the gliding revolution. Created on paper by Schweizer Aircraft, she was named the 1-26. One for the number of seats, 26 for her position on the design teams credits. Others of her kind had been built, some in quantity, some as only a single trial. She would be number 59 in a lengthy list of 700, and registered as C-FKPP. But through the years, having had several owners and countless takeoffs and landings, the wear and tear on her frame was now clearly evident. Corrosion had taken its toll on the fuselage members, and the fabric on the flight controls were well past the point of serviceability. As well, her current owner passed away suddenly one spring day leaving the estate to dispose of her as best they could.

A member of our club, Paul Moffat, purchased her in 1993. Paul was busy with his own restoration project, a Ka6, which had a brief encounter with a windsock pole, to allow for any time on the 1-26. So, it sat on the trailer in the hangar for two more years, until Jim Cress and Mike Maskell bought the aircraft, and on November 1st, with a fresh blanket of snow on the ground, she came home to a workshop in the city to spend the next four years having every part of her exposed and, where needed, new parts to allow for her slow recovery process.

The first area of concern was for her fuselage tubing. It was determined that on the last annual inspection, the glider had been grounded for corrosion near the back end of the lower longeron. Just how far the corrosion extended would not be known until the frame was completely stripped of

the covering, the controls, cables, and every nut and bolt. The frame was then sandblasted and a specialist in aircraft welding was called in to assess the damaged areas. Thirty feet of new tubing later, the frame was signed off as fully repaired. LPS-3, a corrosion barrier was sprayed into all the tubes and the holes for access were welded over. This now done, the next step was to prime and paint the frame and start the slow re-assembly of all the major components. Photos taken prior to removing all the bits proved a valuable resource and Schweizer Aircraft were able to provide the construction manual, blueprints of some of the wing group, and, surprisingly enough, some correspondence from the original owner.

Many hurdles were met and crossed during the four year restoration. Learning the application method of applying the Poly-Fibre fabric and ensuing coats of filler and finishes was a very time consuming labour of love. Countless hours of ironing finishing tapes and sanding the final coat of silver UV protection were put in and, with each piece completed, a new level of satisfaction began to emerge. We were seeing the old girl come to life before our eyes and we knew the day would be soon upon us for the first flights.

Disaster strikes! The current configuration of our 1-26 had a fibreglass nose fairing, extending from the canopy to the nose cone. Several poorly applied coats of paint and a few, equally bad fibreglass repairs, left us wanting to strip, repair and paint to match the rest of the fuselage. The solution — copious amounts of methyl chloride, commonly known as paint stripper. The only problem we did not know at the time was that the interaction of paint stripper and fibreglass resins would not be a pretty sight. Within minutes of applying the stripper, we noticed that there seemed to be a lifting of the glass cloth, and within a few more minutes we were left with a very thin, almost transparent, first layer of glass that seemed to be basically intact, untouched by the stripper.

Several agonizing weeks of staring at this fairing, now rendered useless by our attempts, left no other option but to return to the original classic fabric nose, supported by aluminium tubes running longitudinally. It all turned out well in the end and I believe that the look is more in line with the vintage year of the glider.

Move ahead now to the present and after several more weeks of fabric work, painting, assembly and final rigging checks we are ready to make our move to the field. A weight and balance shows she has gained only a few pounds over the years and, lucky for all of us in the partnership (we are now three), we all fit within the maximum pilot weight. Time to put our work into the air and trust that we have not overlooked anything. But how could we have. We just spent the last four years → p12

Report on World Membership Decline

John Roake, New Zealand

ALL MEMBER COUNTRIES of the International Gliding Commission (IGC) have suspected for many years that the support for gliding on a world-wide basis has been falling, but until now no factual figures have been available. As a one man committee appointed by IGC in March 1999 to report this year on the situation, I first saw a need to establish accurately the true position.

The accompanying table, whilst notable for some omissions (Italy, Finland, Poland), is a big enough sampling to provide an accurate picture of the decline. It shows that our membership has fallen 12.2% in the past ten years, or 14.81% if we take into account the memberships of the former Iron Curtain countries, now operating under a private enterprise regime. The decline in membership numbers is accelerating, so IGC can no longer ignore the matter. Giving lip service to the subject achieves nothing. A number of member countries have tried on an individual basis (Netherlands, New Zealand, USA) to stop their decline, but to my knowledge no one country has recorded any major success in achieving a reversal. It is therefore necessary to take a look at why we are now collectively in the current position.

What has happened in the last ten years

Living and work standards have seen major changes over the past ten years in every country. We are forced to accept that potential new gliding members now have increased expectations of service quality, expect high standards, added value, and immediacy. These expectations are now well established, and we can expect people's required standards to increase even further.

Based on their service standards and relationships, companies succeed or fail. Old notions of service adequacy will not be sufficient. Why should a consumer used to high standards of service from businesses compromise standards to experience inadequate service from an amateurish organization? An example: regard the universal dissatisfaction with schools and hospitals, even though their levels of service are really no worse than ten years ago. Organizations offering sport and active leisure opportunities can no longer assume they have a captive market. They have to earn the commitment of interest, time and money of people, with service and attention to fulfilling their needs. And it has to be fast. People (rightly or wrongly) now expect professional level services, even from volunteers.

Meeting this "professional" standard requires a different mindset and skill set. This is lifestyle marketing. Our sport has a competency issue to solve if we are to meet this challenge. In New Zealand we have seen six out of our 31 clubs either fold or about to amalgamate. This is a club decline of 19% and runs parallel to membership loss. We haven't seen the end of this declining trend yet. These clubs were/are still living in the 1980s, and assumed they had a captive market. They did not change

and the world has left them behind. It is suspected that we are not unique in New Zealand and the same trend is applying world wide.

To survive, we need to get smarter, more proficient at what we provide, and more importantly get commercial. Clubs need to present a clear value proposition to potential members who want to know:

- how many hours are involved?
- will I pay for instruction?
- what is the all-up cost I am committing myself to?
- what other social or business opportunities are there?

Their bottom line is — is it value for my investment of time and money? Clubs need to present a clear value proposition that they can deliver on.

Time is the prime commodity

Since the early '80s sports and active leisure bodies are competing for discretionary time. We offer a set of rewarding experiences, but we do not have a monopoly on this. There are a host of leisure time activities which offer people not only a challenge, but a good time too. A key issue is the variability of experience, while we already know the disadvantages attached to gliding, ie. direct physical activity which requires more (too much) commitment. On the club scene, team effort is needed to launch a sailplane, there is considerable wasted time, and weather variations can be very frustrating. Further, television sport is starting to command many channels and websites, and we now risk being out-competed in the battle for people's affiliation and involvement.

Young adults are moving to see sport as a disengaged activity to be viewed on TV and the web. If we are not successful in promoting sport and active leisure as an attractive and compelling use of free time then "e-mail potatoes" will increase in number and sprout clones of themselves. Unless we get more commercial and smarter, our very survival is in jeopardy. The IGC has to appreciate that they have to get into the business of promoting our sport and active leisure services, be better at it than the competition, and act accordingly. There is no alternative, we simply have to beat the competition. We have to sell potential members over and over again that our sport provides pleasure, satisfaction and benefits. Perhaps it is time to re-brand gliding as a most exciting lifestyle option, one that presents a value proposition with enjoyable active leisure.

We are more wired and more tired! The pace of life has increased dramatically in recent years. "Quality family time" has shrunk, and overall leisure time is fractured and has come under real stress. "Time sickness" is the leading cause of stress, which is the new social epidemic. Participants don't have the time they once had, and nor do volunteers. People in the new millennium are working harder, and value time and quality of life is at the top of

their list. They now put more value on quality of life than on tangible goods. Time is the new precious commodity, and new potential glider pilots are saying, "Don't waste mine by asking me to be on a working bee, or spend a day on the airfield as a duty pilot." The popularity of activities which consume large amounts of fixed time, or require large numbers of support people are declining, and the decline isn't unique to gliding. We already know this! This is not the modern way, and does not reflect changing, accelerating lifestyles.

The time burden expected of volunteers is already reducing people's ability to play a role in helping others fly. Gliding becomes a second choice on the list of likely sports as more and more potential members seek opportunities that suit them when they have the time, and this could be anytime. (The increasing acceptance of nine-hole golf is dramatically on the increase, and illustrates gliding's inherent weakness.) It is acknowledged that we need (must have) volunteers, but let's not put them under pressure by demanding huge chunks of unavailable time.

The best people are the busiest! People will volunteer if they can see the value of it and can afford the time. Clubs should use this goodwill to tackle short-term pro-

jects, rather than long term commitments (attract people for a purpose, rather than a reason). Internet and software technologies offer the opportunity to reduce volunteer administrator workload by making the organizing of sport a simple, on-line matter. Conversely, the unemployed and retirees are a large potential resource that should be appealed to. A gliding club can be a source of new skills to unemployed people. The "volunteer crunch" may further be best addressed by paying people.

As more clubs struggle with this issue in isolation, it makes sense for them to join forces and pool their resources to buy the time that they will not easily get in the future for nothing. Television and the web are fast becoming the clubs we all belong to. Clubs offering just one sport will increasingly risk losing members who have diverse interests. As the world gets more complex we look for simpler forms of recreation. Clubs which diversify or amalgamate can achieve critical mass and attract more people. Clubs which offer family services will strike a chord with busy families. Also, clubs need to consider how to attract members from outside their area.

The internet offers a real opportunity for clubs to create their own communities of interest. Lifestyle marketing is

about relationships. In the USA, 20% of the people control 80% of the wealth and I suspect this percentage is not restricted to this one country. The discretionary income of many households is under real stress so we must increase utilization of club assets and thereby stabilize or lower flying costs. But for those that can afford the opportunities, gliding in the future will not be as price sensitive as many might think. Once again, if the value of gliding is compelling, people will pay reasonable costs for the opportunity to be involved (so long as the time cost is judged to be worthwhile).

Remember the idiom, "Families that play together, stay together." Smart clubs in the future will be family-friendly places, offering interest and activities for adults and children at one time, in one place.

There is evidence that there is a new generation on the scene which is self-centred and acquisitional, even hedonistic. They accept competition and thrive on the values of survival of the fittest. They have relatively high disposable income which they seek to spend on exciting leisure opportunities. The driving question for them is, "What's in it for me?" It is unclear whether the notion of

World Membership Survey

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	% diff.
Argentina	423	423	381	351	286	251	268	253	242	252	-40.42
Australia	3796	3758	3661	3519	3532	3349	3240	3139	3089	2976	-21.60
Austria	4047	4086	4130	4096	4038	3986	4028	3990	3965	3599	-11.06
Belgium	1454	1495	1488	1561	1577	1580	1571	1557	1570	1591	-9.42
Canada	1381	1405	1322	1288	1257	1292	1257	1319	1321	1313	-4.92
Denmark	2100	2061	2138	2052	2046	2036	2005	1984	1927	1950	-7.14
France	14012	13715	13789	13248	14165	13809	13256	12554	11813	11100	-20.78
Germany	*39900	*39400	*38900	38465	38444	37592	37624	36724	36768	36687	-8.05
Greece	76	67	56	45	44	38	31	31	26	26	-65.78
Iceland	97	100	97	91	94	100	97	96	96	101	+4.12
Israel	222	220	220	225	225	204	193	189	190	190	-14.41
Ireland	65	67	69	71	74	75	78	79	81	85	+30.77
Netherlands	4432	4572	4358	4259	4200	4024	4090	4046	4125	4079	-7.96
New Zealand	1091	1001	1036	1007	1069	1109	1047	1017	987	889	-18.51
Norway	1969	1825	1574	1696	1701	1707	1618	1701	1599	*1574	-20.06
South Africa	629	676	696	577	612	655	651	641	688	*728	+15.74
Spain	450	466	462	452	459	467	478	490	493	498	+10.67
Sweden	4563	3903	3515	3534	3595	3322	3088	3249	3013	*3025	-33.7
Switzerland	*4378	*4259	4159	3786	3779	3574	3654	3647	3666	3680	-15.94
UK	10586	10135	9623	9409	9522	9757	9409	9225	9225	9164	-13.43
USA	14120	13592	13535	13794	13853	13570	12804	12676	12860	12881	-8.77
totals	109791	105209	104572	100487	97744	107226	103526	102497	98607	96388	-12.2

Former Iron Curtain countries – their figures inflate the world membership drop

Hungary	*5062	*5062	*4700	*3110	*2097	*1881	*1881	*1881	*1664	*1664	-67.12
Russia	350	350	325	215	145	130	130	130	115	115	-67.14
grand totals	115203	110234	106814	102498	99523	112638	106851	104508	100618	98167	

Including Russia and Hungary: down 14.81%. All figures with asterisk (*) are based on the "best" estimate.

community/volunteer service is important to this Generation X. If not, then the traditional volunteer system (if it is a system) for running sport may be under greater stress as this group matures into leadership roles. As participants, they expect high levels of service and value for money. We should reflect emerging values by presenting volunteerism as a self-interest, not an altruistic activity. The competitive instincts of Gen X offer a real opportunity to position sport as an outlet. Think commercial models, not community models. Excitement and risk are drivers for this group — witness the emergence of extreme sports.

So the future is hazardous if we don't focus resources at lively and intelligent lifestyle marketing which capitalizes on emerging circumstances and moods. We are fooling ourselves if we recklessly hang on to our parents' notions of community service and joint effort. (How many Rotary/Lions clubs in your district have gone into recess?) Some developed societies are no longer behaving in this mode. There is a decline in many countries and it is probably an irreversible reality. That doesn't change our values or goals however. It just means we have to rewrite our approaches to deal with it, bearing in mind that at all times we are asking for something that people have less and less of, ie. time.

What does the IGC need to do? Despite the declaration that there are far too many international and continental championships, there is a need to revise the role of at least one class — a class that can be maximized to provide the greatest TV exposure, one that will not impact on the limited resources each country has toward funding world championship participation.

Publicity and membership require each other. We have to sell ourselves and it has to be totally commercial, it has to be on a world-wide basis, it has to show that regardless of age, creed and gender, gliding can be "your" sport. I am proposing that the Open class be removed from current world championships as we now know it. I am proposing that a World Cup concept be adopted which would broadly be as follows:

1. As France currently holds the World Soaring Cup they would be the defenders of the trophy until they were defeated in a championship run-off.
2. Any syndicate from any member nation can mount a challenge which the holder would accept biannually.
3. There can be any number of syndicates challenging from any country.
4. Challengers may bring and choose to fly one of two Open class sailplanes. The syndicate can have up to five pilots, any one of which can fly on any day during an elimination challenger series.
5. An entry fee possibly as high as US\$25,000 per syndicate would be paid by any challenging syndicate. Half of those funds would be returned to IGC for sport promotion. The Defender is obliged to spend "x%" of their half on promotion in the TV medium.
6. A challenger elimination series would produce the challenging winner who would then race against the French defender, the elimination series being on a points per race over one-on-one tasks. Each challenger would race against another challenger at least twice. This concept is not unlike yachting's America's

Cup. We well know the publicity and sponsorship funds this event attracts. It is commercial!

If we can successfully enlarge on the TV animation concept, we can expect major exposure world wide for the sport. It is lack of exposure that our sport is suffering from, and a World Soaring Cup should be the catalyst in overcoming this handicap. I envisage a special committee being set up to create a set of rules and get the first contest under way by 2002.

In the meantime I believe that we in no way utilize the potential of all those hundreds of thousands of people who take a passenger flight with our clubs each year. They should be a first line of defence — they are a captive audience. They have already been motivated to enjoy the wonders of the sport, so why not encourage them to come back and learn more. The producers of the 1995 New Zealand videos (*Windborn and Champions of the Wave*) have had phenomenal sales. The producers are prepared, with our help, to produce a 15 minute market orientated give-away video with the emphasis on first-time passengers, encouraging them to return to the scene of their first flight. I have negotiated with the company to produce a video which will sell to National Aero Clubs for US\$2.00 each, including freight, provided we can get initial sales of 10,000 copies. The clips from 80 hours of filming in New Zealand offer a wonderful opportunity to produce a universally acceptable promotional give-away. Commentaries in German, French and other languages will be available.

I seek not only expressions of interest and support for this project, but sufficient orders that will encourage us to proceed one step further.

In the meantime, it is a fact of life that New Zealand is a leader in sport animation; the America's Cup animated sailing/reporting programs all originated in my home country. Efforts were made before the Omarama World Championships in 1995 to produce what Bayreuth did in 1999. We ran out of time and money, but the initial design work still exists. The America's Cup production team are still available and we are to have a resumption of meaningful discussions with them once the America's Cup concludes in March. IGC delegates will hear much more on this, especially as we plan to overlay animated sailplanes on previously scanned relief maps. The TV coverage would be interspersed with pre-recorded gliding scenes and action.

Finally — there is much written word on a multitude of schemes designed to sustain and encourage gliding membership, but it is very fragmented, and considerable time is required to put it into a coherent collective form, one that is readily available to all clubs. It is my intention during the next 12 months to review all the written word (from many countries) on sustaining and building membership, and edit it into what I would consider to be a reference book on gliding membership. It should be available within 12 months. The work I am doing should be getting the most support of any facet of our sport, but sadly negativity prevails and this is not restricted to any one country. Essentially, I am a one man band in this project, but would welcome the support of anyone who has something to offer. ❖

No particular place to go

“the Bald Eagle”

THIS ISSUE OF USING a *nom de plume* seems to have caused some controversy on the SAC Roundtable. I thank those who supported the concept, especially Anne N. Emuss, Douglas Fir, and my pal, “Fearless Fred”, who gave a URL for my picture on the CAS website. I am not trying to hide, but rather to inform and entertain, and to try and follow in those web-shaped footsteps of the longtime contributor to *Sailplane & Gliding*, “Platypus”:

Here is how the nom evolved. While writing my second article for *free flight*, I realized that I looked forward to making a somewhat regular contribution to the magazine, and I began two separate changes in style. At the time, I didn't realize that the two changes were related, but they were, and I have Platypus to thank. The first change involved content. The story was about the provincial contest at Champlain, and it dealt more with the ambiance than the actual flying. A lot more. The second change was a *nom de plume*, “Hotel Tango”, after my contest letters. As I began to hear about Platypus, I decided to investigate his popularity, and I was jealous that he had a better nom. I was inspired by a picture I saw in Terry McElligott's house of Rod Crocker being attacked by Karl Striedieck's pet eagle. I figure looking at the photo is about as close as I am ever going to get to flying on the Bald Eagle Ridge, but I did see a striking similarity between me and the bird.

I now had an appropriate nom, but I had never read Platypus, so, in the off-season, I set about researching some of his articles. I was delighted to find that, in addition to sharing an avian name, he is very entertaining, and rarely mentions flying — I instantly felt a bond.

The first Platypus piece I saw dealt with such diverse topics as the French translation for breaking wind, a situation apparently made worse by the Continental predilection for adding garlic to beans, and the excessive scenery in a local production of *Les Miserables*. His digression on the dangers of getting your chest hairs or nipples caught in the springs of a chest expander exerciser caused the magazine's new editor to comment, “What the heck has this to do with gliding?” Fully one page of his next article involved joining the French Foreign Legion.

I realized then that I had found a goal worth striving for — more difficult for me than any possible badge flight or even trying to get more FAI records than Dale Kramer (we are currently tied at one). I am aiming to write an article for *free flight* that contains absolutely no reference to glider flying. As I train for this, I ask myself some questions. Can I do it, and is Tony Burton more of a stickler for the rules than Walter Weir? Is there a Rules Committee for articles? If they can have a Pilot Selected Task, why not an Author Selected Story? Will the editor require any mandatory talkpoints?

With respect to the non-flying digressions, I feel that, except for Dale, we usually spend more time on the ground talking

about flying than we do in the air, and these articles reflect that. Also, our collective club experience is made up of and enriched by the various other activities, socializing, sights, sounds and, as Platypus notes, smells that surround us. To use New Age terminology, I take a holistic approach to club life. I am gratified to hear that my experiences and interests are read and appreciated because others can relate to them.

There are people who enjoy flying and want to read about club life, yet are sometimes intimidated by the polysyllabic technical articles about the intricacies of weather or glider performance. My closest friend at our club once began to read an article in *free flight* about performance that used his glider type as an example, so he was keenly interested. He is an AME, but he had difficulty with the charts and graphs, so he went looking for some lighter reading. Sure, knowing about dry adiabatic lapse rate and L/D is important, but so is all the other fun stuff. He's moving out of the country, and has sold the glider, but wants to continue his subscription to *free flight* to keep up with our adventures at SOSA.

In my last article, I noted that some of us are on a first name basis with quite a few farmers and their cows, and the editor added an appropriate Gil Parcell cartoon which explained that *aux vaches* is French for “landing out”. Both Eric Gillespie and I have alluded to our own landouts, to each other's, and to those of fellow members in *free flight*. Some of these stories have the potential for being entertaining, instructive, or both. I am interested in receiving any landout stories that you care to forward as a basis for a future story.

I have already collected notes about several pilots who, having successfully completed their 50 km, got an aerotow in the general direction of home and landed out on the return trip. This is right up there with the contest pilot who returned to the airport, finished, won the day, did a beat-up, and landed out. Or the Nationals pilot, now a SAC executive I believe, who once had more landouts than there were contest days. Confess to something interesting from your own log, or snitch on someone else. You can reach me at <thebaldeagle99@hotmail.com> Feel free to use a *nom de landout*.

One of the subjects that comes up now and again is the issue of, well, pee bags and various other methods and systems of allowing elimination without eliminating your chances of a longer flight. At least one of my contest landouts was to deal with this situation, and it became more problematic as my hurried leap from the cockpit coincided with the arrival of the vigilant farmer and wife. There was no place to go:

“Hi there, did you have an accident?”
“No, but I'm about to”

I have been discretely asking others for input on their output, and have gotten a range of suggestions. Most are unsuited for installation in club aircraft, and in addition, I find difficulty in working around parachute straps and seat belts. I was therefore looking for a solution that would handle the solution, well, internally.

I got advice from the notorious "Pregnant Woman," whom you may recall had beaten me in my first contest. Her pregnancy has produced a little future pilot who also has difficulty in controlling when and where he goes. She suggested that since he and I share a similar problem, that we could also share similar underwear, and she gave me some samples of what he uses. This is just great. I now picture myself landing *aux vaches*, colliding with a cow and being rushed to hospital. Mothers everywhere would be pleased to find me wearing clean underwear, but presumably quite surprised to find that it is decorated with The Three Bears. I might apply to change my contest letters to 3B.

Speaking of the three bears, one very senior pilot, whose name I won't mention, once complained that I had towed him too fast, so the next time I went slower. He wasn't very happy as this was apparently too slow. I blamed faulty instruments — he said any self-respecting towpilot should be able to get it "just right by attitude alone." This spring, I had the usual glider checkflight, and he happened to be towing me in the towplane with questionable instruments. He radioed back asking me to report my airspeed. I re-

ported that it was about the same as his. Evidently he is still not pleased with my attitude.

We've had the usual spring at SOSA with a few flyable days interspersed with rain or more snow, but regular flying began end-April. It was nice to see a great turnout for our annual spring cleanup, and I hope the volunteer momentum continues. One of the things that slows our startup is a water runoff problem. Just like me, the field has no particular place to drain itself. Our cure involved having a contractor excavate the verges, and one of our members, who is a professional landscaper, couldn't resist having the operator remove a copse of scrub trees and grade the area for planting seed. Our guy feels that the world would be a better place if it were flat and covered with grass. I can't figure if this is because of his profession or because he lands out so often (see "You Can't Get There From Here" in *ff 2/2000*). Within seconds of this act, several members pointed out that the hill and the bushes had, for 50 years, served as cover for those wishing to relieve themselves without trekking back to the clubhouse. Once again, no particular place to go.

Actually, I think I may have hit upon the perfect topic for my goal of an article, suitable for *free flight*, that contains no reference to flying gliders. I'll collaborate with my landscaper pal who, by coincidence, also wants to write ... we'll do a piece entirely devoted to ornamental gardens for emergency landing purposes. ❖

The 12 step recovery program

from page 7

on this project, know every nut and bolt intimately, have spent a full week with the final assembly and just prior to first flight, each partner has gone over every connection, every flight control, all the important stuff and she has been signed off as ready to fly.

Feeling a bit like Chuck Yeager must have prior to his historic breaking of the sound barrier flight, I did my usual walk-around, strapped in, reviewed with the towpilot what I wanted (slow and gentle, with 4000 feet for tow height), and admittedly somewhat nervous, gave the signal for the wing runner. Within 500 feet she lifts off, settles in, and we are flying. A quick, full control check as we pass the end of the runway proves everything is working well. Note to self

on this one ... inform those on ground that the glider will rock left and right and is no cause for alarm!

The flight is uneventful — except for a stuck vario needle, the glider behaves as it should. The landing is met by the other partners and club members, a bottle of champagne to toast our newest member of the gliding world and many posed camera shots to record the moment.

Later that evening, while looking through my glider log book, I came across an entry dated 20 years and three days previous. It simply recorded the flight as: C-FKPP, type 1-26, time 23 minutes, comments: first flight in 1-26, fantastic glider to fly. I don't think I'll change a thing for this current flight entry, except for the date. And yes, she is still a fantastic glider to fly. ❖

The perfect partner

from page 6

the airfield during the day by someone driving over it. This all gets sorted out just as soaring conditions collapse, and has the cumulative potential to produce the modern equivalent of pistols at dawn.

Bold pilots ... Choose partners who are most likely to keep your lovely glider in one piece. If you possess an instructor's rating, then you may already have a valuable insight into the airborne skills of your potential suitors. If not, then spend some quality time at the launchpoint on a nice day and observe the CFI or Duty Instructor closely as pilots lug their gliders into line. A rolling of eyes to the sky may not necessarily indicate a check on conditions. Nervous pacing and nail-biting may also betray anxiety about certain pilots' plans for aviation. Take careful note. Happily, nature often appears to contrive to concentrate these 'differently gifted'

pilots into their own ghetto syndicates. This is excellent news for everyone else since generally only one per partnership will be airborne at a time.

And finally Having selected your future partners, you might feel the need to come to some sort of written agreement, bearing in mind that you will most likely be juggling breathtaking amounts of cash in the course of this exercise. This needs to cover such sordid details as, for example, division of shares, allocation of costs, and what happens if someone leaves. Write down your thoughts collectively on a single sheet of letter paper. As a rule of thumb, if you need to go to a second sheet, tear it up, and get different partners. If the agreement needs to come out of the drawer regularly, get different partners. If a partner persists in quoting from the agreement on the airfield, get a gun. Happy hunting! ❖

The maneuvering flight envelope

John Ashford, from *Sailplane Builder*

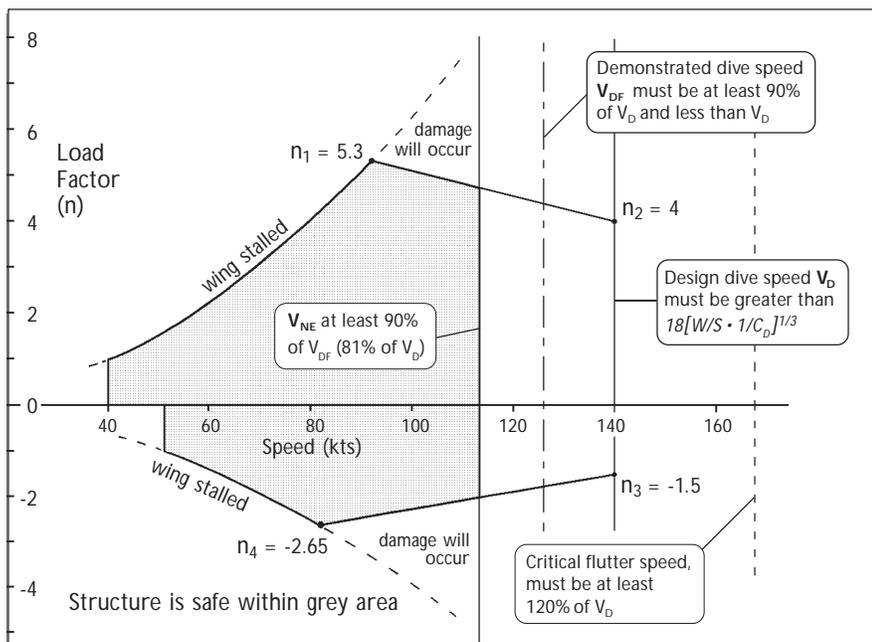
THE MANEUVERING FLIGHT ENVELOPE, also known as a V-n diagram, is the basis for establishing the loads which might be applied to the aircraft structure *by the actions of the pilot when flying in still air.*

'G' force We all have some idea of what 'g' force means. A 'g' of 1 is what is experienced in static equilibrium and, for the purposes of this discussion, it is the weight of the glider flying straight and level at a steady airspeed. In a steep turn or a loop, the 'g' force increases and we all are accustomed to hearing expressions like "pulling 3g" in a loop or steep turn. This simply means the structure and the pilot experience a load equal to three times their weight. The factor 'n' (which in the case just mentioned is 3) is called the *load factor*, so a V-n diagram is a portrayal of what loads might be applied at what speeds. A well-conducted loop will produce 3-3.5 g. A pilot unused to aerobatics will experience discomfort above these levels and may "black out" in a positive maneuver at much above this value.

Maximum dive speed We all ought to know that there is a speed above which we should not fly our gliders. This is called the "Never Exceed Speed". One of the questions we might ask is what happens if we accidentally (or deliberately) go faster than this and also what sort of consequences there will be if we attempt to maneuver the glider at or near this speed. The designer of the glider usually starts off with a parameter called the "Design Dive Speed". JAR-22 and OSTIV both provide that the design dive speed must not be less than:

$$V_D = 18 [W/S \cdot 1/C_D]^{1/3} \quad \text{where:}$$

V_D = Design Diving Speed (km/h)
 W/S = Wing Loading (daN/m²), nearly enough is kg/m²
 C_D = Minimum drag coefficient of the glider



Wing loadings might vary from 10 kg/m² for a feather-light homebuilt to 55 kg/m², which some of our sleek aerial water tanker sailplanes are being loaded to today.

A good pre-war glider might have a drag coefficient of about 0.016 and today's super ships are approaching 0.005. We can tabulate the minimum design dive speed according to the formula for various wing loadings and drag coefficients. Table 1 shows these converted to knots and using kg/m² for wing loadings.

Table 1– Minimum Design Dive Speed (kts)

Wing Loading (kg/m ²)	Min. Drag Coefficients		
	0.015	0.010	0.005
10	84.3	96.5	121.6
20	106.2	121.6	153.2
30	121.6	139.2	175.3
40	133.8	153.2	193.0
50	144.1	165.0	207.9

The designer may select a design dive speed higher than the tabulated figures. We can now mark one limiting feature of the V-n diagram, a vertical line at V_D . In practice the glider is never, ever flown at the design dive speed.

JAR-22 and OSTIV provide for a demonstrated dive speed, V_{DF} . This is not to be less than 90% of the design dive speed. Glider designers will not expose pilots (usually themselves!) to risk by going much above 90% of V_D to establish V_{DF} . The never exceed speed, V_{NE} , is set at 90% of the demonstrated dive speed to allow for small accidental excursions above the placarded value without nasty consequences. V_{NE} will therefore not be less than 81% of the design dive speed (0.9×0.9).

Any pilot who disregards the V_{NE} placard of their glider and deliberately exceeds this speed on a regular basis is really asking for trouble, as they will be approaching the designers design limit and possibly exceed the demonstrated dive speed, thereby blundering into an area where no one has been.

A further consideration when discussing high speeds is flutter. JAR-22 and OSTIV provide that a ground resonance test be performed on a prototype, and from this test it must be shown that a glider shall have no critical flutter at less than 1.2 times the design dive speed up to 10,000 feet of altitude. In addition, it must be demonstrated that up to the demonstrated dive speed, there is no evidence of any reduction in damping of the structure, which would indicate the onset of flutter. I have mentioned this in case you might think that the never exceed speed is set to avoid flutter.

Before considering what load factors might be allowed to occur at design dive speed we will examine the slow speed end of the diagram.

Stall speed The designer will be able to estimate the stall speed of his design. We can mark this point on the diagram at $n = 1$. We all ought to be aware that in a steep turn, the stall speed goes up in proportion to the square root of the 'g' load. We can tabulate the stall speed increase for various load factors and some actual stall speeds for an average glider with a straight and level stall speed of, say, 40 knots.

n	1	2	3	4	5.33	6	7	8
$n^{1/2}$	1	1.41	1.73	2.0	2.30	2.45	2.65	2.83
V_{stall} (kts)	40	56.6	69.3	80.0	92.4	98.0	105.8	113.1

These stall speeds for the various 'n' can be plotted on our diagram. JAR-22 and OSTIV and most other aircraft design codes prescribe that there will be a safety factor of 1.5 above proof loading before something critical breaks. Two important values of 'n' arise. The proof load at +g is set at 5.33 and by applying a 1.5 factor, the ultimate load will be 8. At this value something is going to let go in a big way. Above 5.33 g we can expect damage to occur and it is not envisaged that a pilot will maneuver the glider in such a way that 5.33 g will be exceeded.

Above and to the left of the curved line we just drew, flight is not possible, as the wing will stall. At $n = 5.33$ where the stall speed is 2.3 times straight and level, we placard the glider's speed as maximum maneuver speed V_A . At any speed up to this speed the pilot can apply full control deflection without damage.

Now we need to connect up V_A to V_D to complete the picture. We could draw a horizontal line on the basis that $n = 5.33$ should apply at all speeds above maximum maneuver speed. This is not easy to design for, and the assumption is made that pilots will not apply full control deflection at high speeds. It is possible to design control circuits where the stick force per 'g' increases such that the pilot cannot get full deflection in any way without deliberate use of very large forces. In most modern gliders this is not the case and, what is more, the required load factor n_2 is reduced at design dive speed from what it was at maximum maneuver speed.

JAR-22 and OSTIV provide that at V_D the design need only satisfy +4 g. The top part of the flight envelope is now completed by drawing a straight line from $V_A, n_1 = 5.33$ to $V_D, n_2 = 4.0$.

Pilots of gliders who like to get around at V_{NE} need to be mindful that excessive control inputs will result in major breakage even in still air. Mishandled aerobatics would be a good candidate for a catastrophe at high speed.

Negative loads We need to look out for negative 'g', too. If you push over hard from a pull up, the glider experiences negative 'g' and the pilot comes off the seat. We can construct the bottom half of the diagram in much the same way as the top. Design dive speed stays the same, stall speed will be higher and it is only necessary to comply with a load factor $n_4 = -2.65$ on the inverted stall line and $n_3 = -1.5$ at V_D . Using the 1.5 safety factor, we can see that the ultimate negative load can be as low as 4, half what we saw for the positive case. Gliders designed in the utility category are just not designed for high negative loads. This should show you that at high speed, negative 'g' maneuvers are potentially very dangerous if allowed to get out of hand, as the designer is not required to provide a large margin of strength for this case.

JAR-22 and OSTIV also prescribe values of 'n' for fully aerobatic gliders:

Category	Utility	Aerobatic
n_1	+5.3	+7.0
n_2	+4.0	+7.0
n_3	-1.5	-5.0
n_4	-2.65	-5.0

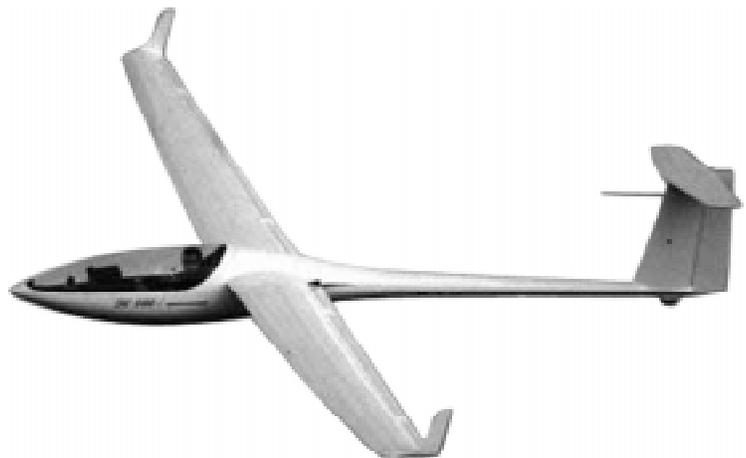
A fully aerobatic glider design is a real test of any designer. It has to be nearly twice as strong as those certified "Utility" right out to design dive speed. The negative load case is now required to be 71% of the positive load case. Most gliders certified Utility are allowed simple aerobatic maneuvers like loops and stall turns. This is not always the case. The popular LS-4, for example, is not certified for aerobatics and most of the big superships, particularly if they have pop-up motors and/or propellers, aren't either.

When the designer has the basis of a complying design for the maneuvering envelope, the next thing looked at is the gust envelope. In this case, the designer has to provide adequate strength to cope with what the atmosphere might attempt to do to the glider rather than the pilot. This is another discussion. ❖

DG-800S 15/18		1:45/51.5
DG-800B 15/18	SOLO 53hp	1:45/51.5
DG-505 ORION 17/18/20		1:acro/40/44
DG-505 MB 20/22	SOLO 64hp	1:44/47
DG-1000 18/20		1:acro,43/46.5



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SAC contest letter register

Below is the contents of the current register. **It is outdated and certain to contain many errors and omissions.** If you have letters not on the list you could lose them. Check the list and send corrections to **Al Schreiter** at [<alschre@ican.net>](mailto:alschre@ican.net) who has taken the job of maintaining the register. The final corrected list will be placed on the SAC website where it will be easier to keep up to date.

02	reserved	Bob Katz	Montreal	DB	FDGD	DG-600	André Pepin	Champlain	
1M	FLZS	Jantar	J Adamczyk, F Hunkeler	SOSA	DC	FBDC	Libelle 201 B	Carole King	Champlain
2L	GORT	Open Cirrus	Dave Fowlow, J Bennett	Cu Nim	DM	GBKK	Genesis	Dave Mercer	GGC
2W	GGWW	ASW 20B	Walter Weir	COSA	DW	GQMB	Hornet	SOSA	
3B	FTVS	SZD55	Colin Bantini	SOSA	EE	GPIUB	RS-15	Tony Burton	Cu Nim
3Y	FRXG	Austria SH1	Bill Black	GGC	EH	GYRE	Std. Libelle	Mark Saar	COSA
4E	GEOD	Std. Cirrus	Geo. Dunbar, Alan Hoar	Cu Nim	EI	FETQ	HP-18 mod	Mike Glatiotis	Cu Nim
4Q	FVQQ	SZD 55-1	Richard Longhurst	Great Lakes	ET	GTRV	HP-18	Udo Rumpf	COSA
6E	FXSX	Ka6E	Kurt Meyer	Air Sailing	EZ	FFEZ	Tinbus DBW2	Dave Webb	SOSA
6S	FRSO	Austria SH1	Matt Keast, Bob Morse	London	FJ	GFBG	Jantar Std. 2	Cu Nim	
7G	GPRS	Libelle 201B	Karl Raufeisen	SOSA	GA	FENR	Std Libelle	Kemp Ward	Champlain
7Z	GVTZ	Jantar Std.	Vancouver		GB		Jantar Std. 2	Gilles Boily	Quebec
A1	GENQ	SZD 55	Ed Hollestelle	SOSA	GC		reserved	Gatineau	
A2	FIJY	HP-18 mod	Ed Hollestelle Jr.	SOSA	GJ	GCGJ	Nimbus 4	Brian Milner	COSA
A7	FEQH	DG-300	Ray Richards	VSA	GS	GVLB	DG-200	Gilles-André Séguin	MSC
C1	GUJG	Jantar	Champlain		HB	GJRW	Std. Cirrus	Hans Berg	
D9	GUIL	Open Cirrus	Dick Vine (et al)	Bluenose	HG	GLHG	Std. Cirrus B	Dugald Stewart	SOSA
F1	FXWN	LS6B	Dave Springford	SOSA	HH	FDHH	DG-400	Norman MacSween	Vancouver
F9	FUBL	DG-400	Struan Vaughan	Cu Nim	HJ	GVHJ	Astir 77	Montreal	
J3	GGTI	ASW 20B	Hans Juergensen	SOSA	HK		Jantar Std	SOSA	
K1	GFPO	LS8	Dale Kramer	SOSA	HP	FHPI	HP-14	High Performance Inc.	Winnipeg
K2	GRXX	ASW 27	Wilfried Krueger	SOSA	HZ	GPHZ	RS-15	Roy Eichendorf	Saskatoon
K6		K6	Great Lakes		IR	FSIR	Std. Cirrus	Alex Krieger, M Krieger	Quebec
K9		reserved	Alan Wood	SOSA	JD	GHJD	Std. Cirrus	Russ Flint	Winnipeg
S1	GVDO	ASW 20	Larry Springford	SOSA	JF	FAJS	RHJ8	John Firth	RVSS
T2	GIZC	LS4	Paul Thompson	SOSA	JS	GTGO	LS4	Jörg Stieber	SOSA
T7	GOPN	PIK 20D	Bob Carlson	SOSA	KC	FDIT	LS6	Heri Pölzl	SOSA
V1	FAMG	DG-400	Wolfgang Thiele	RVSS	KV	GJOH	ASW 19	Kevin Clifton	VSA
W1	GFQD	Discus	Charles Peterson	York	LE	GDLE	PW-5	Montreal	
W2	GRKW	Mosquito C	Chris Wilson	SOSA	LM	FPLM	SHK-1	Herbert Lach	MSC
Y3	GYYY	ASW 20	D Baker, J Gegenbauer	VSA	LS	FLSA	LS1c	Montreal	
Z3	GZZZ	RS15	Pat O'Donnell	SOSA	LV	FAAR	ASW20	Tony Rywak	SOSA
22	GNBE	Std. Libelle	Phil Morton	SOSA	MB	FFKJ	Kestrel 19	Dave Belchamber	Gatineau
23	FXGU	Open Cirrus	Group 79 Ltd	Bluenose	ML	FKJO	KA6CR	David McAsey	Cu Nim
24	GXAS	ASW 24	Peter Foster	York	MM	FZBH	Grunau Baby	David Fowlow	Cu Nim
26	GVRs	Ventus B	Ian Sutcliffe	SOSA	MO	GMOE	DG 100	G Cousineau, J Provencher	Québec
41	GVES	VES-1	Art Chalifour	E. Kooteney	MZ	GIKC	ASW 20B	Ulli Werneburg	Gatineau
44		LS8	Andy Gough	SOSA	OB	FZUZ	ASW 15	Oscar Boesch	Air Sailing
54	GLYD	Mini-Nimbus	Gerald Ince	Cu Nim	OC	FBMX	Open Cirrus	Brian Florence	Cu Nim
55	FSHO	SZD 55	Chuck Keith	SOSA	OR	GFOR	ASW 20	Frank Vaughan	Gatineau
57	GBVN	Diamant 16.5	Pierre Pepin	Champlain	OX	reserved	DG-800S	Willem Langelaan	SOSA
59	FKPP	1-26	Jim Cress, Mike Maskell	Winnipeg	PM	GGGE	ASW 20	Terry Southwood	Cu Nim
69	GGBW	Jantar	Kerry Kirby	Great Lakes	PN	FZTO	SZD55	Paul Nelson	Guelph
77	GPON	ASW 20	Jim Oke	Winnipeg	PY	GHPY	Jantar Std. 2	Paul Yardy	
94	GNZY	Mini-Nimbus	Mike Kappl	London	RB		reserved	Randy Blackwell	Cold Lake
AL		reserved	Al Schreiter	SOSA	RW	GBYK	ASW 19B	Richard Willems	Air Sailing
AI	GJDZ	Discus	Kurt Meyer	Air Sailing	SA	GVSA	Grob 103 Acro	Vancouver	
AP		reserved	Andrew Parker	SOSA	SR	GJDJ	ASW 20	Dave Frank	RVSS
AR	GYSO	1-35	Al Wood, R Crocker	SOSA	ST	GEST	ASW 20	Dominique Bonnière	Gatineau
AS	GAUL	PIK 20	George Couser	Ariadne	SU	FAOS	LS4	Sue Eaves	London
AU	GDPJ	Jantar	Regina		TC	GXWD	PIK 20	Lee Coates, Al Poldas	Cu Nim
BB	FABB	Genesis 2	Alain Berinstain	Gatineau	TD	FITD	DG300	Montreal	
BF	GPLS	DG400	Bruce Finley	COSA	TJ	GOED	SZD 55	Tim O'Hanlon	SOSA
BJ	GGHV	Cirrus	Roy Eichendorf	Saskatoon	TW		ASW 20	Tracy Wark	SOSA
BP	GUDM	Pik 20	Jean-Pierre Mathieu	MSC	TZ	GBTZ	ASW 20	Svein Hubinette	MSC
BQ	GUJF	Jantar	Réjean Girard	Champlain	UD	GDMR	LS4	Malcolm Rhodes	Silver Star
BW	GDBW	Jantar Std.	Gatineau		UV	GLUV	Pioneer 2	Don Lapschies	York
BZ	GGEA	Jantar Std. 2	Réjean Dallaire	Champlain	WR		Glasflugel 304	Ron Walker	GGC
CB	FTUB	LS1	Peter Kom	MSC	WW	FPMV	ASW 24	Ian Spence	SOSA
CL		reserved	Cold Lake		XC	GOXX	Jantar Std. 2	Neil Bell et al	ESC
CZ		reserved	Ron Walker	Gatineau	XH	FAXH	HP-14	Mike Thompson	VSA
					XL	GFAI	Skylark 4	Gatineau	
					XR	GPXR	Club Libelle	Terry McElligott	SOSA
					XT	GSZD	SZD 55	Douglas Bremner	SOSA
					XU	GRKX	ASW 20	Chris Eaves	London
					YC	GBVS	PW-5	Charles Yeates	Bluenose
					XZ	GTXZ	DG 202	Harry Peters	ASTRA
					YW	GBYW	DG 202	John Bisscheroux	MSC
					ZQ	GVQW	ASW 17	Stan Doda	MSC
					ZT	GIZT	LS4	Ian Grant	Gatineau
					ZZ	GKZZ	Discus	Jim Carpenter	COSA

SAC safety conferences report

Ian Oldaker, chairman, FT&S committee

Five Safety Conferences were held over the past three months from Hawkesbury to Vancouver to address the past poor safety record and to come up with plans for how to tackle the record to the ground. To say that we came up with plans is to put it mildly! We generated a lot of excitement and good ideas for how to think safety all the time, and how to implement new approaches to safety at all levels.

About 180 pilots attended overall, representing approximately 12% of our active pilots. Not as many as had been hoped, but most clubs were represented by their CFIs and SOs (Safety Officers), and for the first time running such safety conferences, it was very exciting to see so many "leaders" present.

A big thank you to the local organizers and to those who came and so enthusiastically took part in what turned out to be fairly long days. Many thanks also to Dan Cook (National Safety Officer), Ian Grant (Chairman, Airspace committee) and Tom Coulson (FT&S committee) who assisted at some conferences.

First we had to tackle the notion that our record is poor and to get the pilots who attended to buy into the idea that we can improve. I will not dwell on the past record (see the SAC annual reports for details. See also the accompanying box for the new SAC safety slogan "Safety Times Four"). However, I would prefer to discuss the many positive and challenging ideas from the conferences for what we should be doing now and in the future. Over the next few issues of *free flight* I will explore these in more detail, but here I want to briefly show that the large range of topics were considered very carefully. I will also give some details of plans already underway as a result of the conference work.

Before the conferences all pilots were invited to send in their comments on four questions: "What are the *strengths of, weaknesses of, threats to, and opportunities for* the soaring movement, with safety being uppermost in your mind when answering?" The answers were put into master lists and discussed after other presentations on the Canadian accidents from last year, on safety topics such as safety barriers to hazards and how we can control/modify these barriers to avoid accidents, to how people make errors, and a discussion of active failures that lead to accidents and latent conditions that can influence a pilot's decision. We also discussed different (safety) cultures that can exist in clubs. At later conferences we included more detailed presentations on airspace issues.

Topics for the small groups to examine in detail were chosen by the attendees, even though the Flight Training & Safety committee members may have thought ahead of time that we needed this-or-that on the agenda! The small groups consisted of four to six people which discussed:

- Training to Licence Standard (3 groups)
- Safety Culture in Clubs (4 groups)
- Advanced and Post-Licence Training (6)
- Communications (3)
- Currency and Pilot Progression (3)
- Decision-Making and Judgement (2)
- Standard Operating Procedures (2)
- Airspace (1)
- Human Psychology (1)
- National Safety System (1)

Each group was asked to brainstorm their topic, to assess the situation today, then to look ahead and to predict where it would be two to three years in the future if their "vision" for that topic were to be fulfilled. They were asked to propose how this would be achieved and to list obstacles that would need to be overcome. All their group answers were put on flip charts and shared with all at the conference later. In doing this it was hoped that ideas for clubs as well as individuals and the national organization would be produced. I think it is fair to say we received many ideas that can be implemented at every level! "Use your mind to save your hind" came out of one group! Congratulations to all who took part.

As you can see, not all topics were discussed at all conferences. Excellent ideas for implementation were produced. What do we mean by this? Taking the first topic above means that many ideas need to be implemented by CFIs and their instructors together to achieve better training consistency! Entrenched attitudes were seen as obstacles to improvement.

Advanced training was a popular topic, and this says to many of us that we aren't doing enough to nurture the up-and-coming pilots to improve their skills. We

tend to leave them to their own devices after licensing! Many ideas were produced here. How about another look at the Bronze badge right now as a way of improving pilot skills, and ultimately improving safety.

Safety culture! Well, it seems that not all clubs have one, and those that do, have problems defining what it is! Some great ideas here to share in later articles, but how about opening up the dialogue right now, to discuss safety issues more openly and in a nonconfrontational manner? This is important at the individual and club levels, by which is meant the leaders of the club have to set the example.

It seems communications are haphazard in some clubs! Reporting of incidents and accidents is informal whereas one group that discussed this felt it should be more formal and we should use well-defined communication routes. Inertia is again one obstacle to overcome, as is the need to develop and encourage a club culture. Use of radio and radio procedures were criticized as being poor and in need of proper training and correct use. We will increasingly see radio as a safety aid, not as a chat device. CFIs note well.

Psychology. This group felt that we are not doing enough to recognize human emotions and physical needs, especially at instructor courses. Some suggestions were offered also for a National Safety Program. Pilot progres-



sion and currency were hot topics. Again, the groups were critical of how we operate now, saying club requirements are not well defined, are inconsistent, etc. Clear expectations and how to reward people were some of the solutions to improve this topic and ultimately to have an impact on flying safety.

It interests me that decision-making made the roster as we have been pushing the SOAR technique for over ten years now. However, pilots see this as not well taught, eg. instructors are making the decisions! It was seen as a "critical life saver" by one group, a good life skill that needs to be upgraded.

Standard Operating Procedures and airspace rounded out the discussion topics. The club rules were often seen as not relevant or not updated, and not part of the general flying operation. Airspace issues included the need to introduce the topic during early training of all pilots.

Overall there was seen to be a need to provide better leadership within clubs from the CFIs, SOs, and by club directors. In future articles I hope to bring you many of the ideas that came from the group work at these conferences. At the end of each day we made the points that it is the pilots not there who need to be brought up to speed by those who were! *Did you know that 40% of all accidents in Canada occur in mid-week flying.*

We have already started to address training issues by re-issuing the Association standards for sending pilots solo, for licensing and for instructor classifications. Improvements in the instructor courses will be made to take care of the shortcomings that were identified, such as human psychology and decision-making. Airspace issues have spawned an effort to provide all clubs with guidelines for training and for radio use. This will be issued to clubs shortly in the form of a "Recommended Practice". By the time you read this, each of the participants should have received a copy of their groups' work sheets.

Safer pilots make for fewer accidents equals lower insurance rates! ❖

"Safety Times Four"

Safety is a continuing war. The accident rate to gliders in Canada is too high by a wide margin. Transport Canada has a strategic plan called "Flight 2005". It describes their safety target for recreational aviation, among other things, as 0.7 fatal accidents per 1000 aircraft annually.

The FT&S committee think soaring should at least match but better yet, do better than this. After all we have clubs with careful supervision during flying, and we do not carry fuel that so often makes an aviation accident non-survivable.

Over the period 1972 to 1995 there were 23 fatal gliding accidents in SAC clubs. The average number of gliders was about 340 during this period, making the accident rate 0.92 per 340 gliders annually. This equals 2.8 per 1000 aircraft annually.

This accident rate is far too high, and we can only urge that everyone take this to heart and resolve to make 2000 a year that each one of us makes a renewed commitment to safety. The Flight Training & Safety committee believe we can reduce this to less than 0.7 per 1000 aircraft per year or to reduce the rate by a factor of at least 4.

So we have adopted a slogan, "Safety Times Four". This means we must all aim to improve safety overall by a factor of four. Hopefully we can thus reduce insurance claims also by a factor of four; wouldn't that be great?

Ian Oldaker, FT&S chairman
Dan Cook, National Safety Officer

Considering procrastination?
Make your decision late and it may be the end of your decision-making.

"I wonder what the glider accident rate is this year"

In the accidents that have happened that I know about, most were *not* the result of an "unforseeable, uncontrollable, unpreventable" freak event. Most factors appear to be judgement, fatigue, etc. In my limited experience, poor judgement complicated by either stress, fatigue or lack of experience seems to have been the chief factors.

I believe I can assure my wife and children that I am relatively risk free if I:

1. keep up my flight time and recency,
2. fly within the limits of my known abilities,
3. keep my eyes open in flight,
4. on takeoff and landing have more than one option available,
5. fly when I am rested and healthy,
6. ensure my equipment is in good working order,
7. make sound judgements, and
8. stay away from others who do not follow rules 1 to 7 above.

Like any other accident chain of events, most people who have accidents have generally violated the above rules and end up eventually losing. When we say we are pushing the limits we are generally breaking some rule and showing bad judgement.

I feel that the real question is not, "is soaring safe"; it is, "am I safe?". Statistically my chance

of an accident is either 0% or 100%. As an individual, it either will or will not happen. If I continually break safety rules I am pushing the 100%. If I always follow 1 to 8 above I'm helping to assure my 0% accident rate.

I have no consolation in statistics when I fly. If I break some of my rules and I am in the process of scaring myself to death, my ability to start following my safety rules is my ticket to safety.

I do not think to myself, "I wonder what the glider accident rate is this year?"

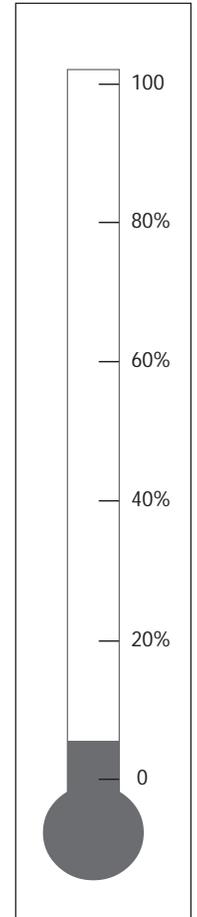
The safety of a sport is the combined safety record of all of the individuals. My record and most of my club members is no wrecks and no injuries. I am not *hoping* to keep it that way; by following my safety list I *plan* to keep it that way. Metal fatigue or a freak meteorological event may still occur, but that's not my biggest danger — my biggest danger is me.

William Snow

Safety Audit thermometer

Safety audit completions are now a requirement for all clubs in SAC by the end of the calendar year. Updated audit forms were distributed to all Safety Officers and club representatives at the recent Safety Conferences. If you did not receive yours, go to the SAC webpage and download the latest version. Help is available from the FT&S committee to answer any questions about the audit; you only have to ask.

So far, two clubs have completed a new audit this season: one being the SAC president's club, Great Lakes Soaring, and the other Guelph. Congratulations. Other clubs are working with the FT&S to complete theirs. Is your club involved? To keep tabs on progress we are publishing this thermometer in each issue of *free flight*. Let's see if we can get it up to 100% by the end of the year, better yet — how about by the end of September, during the period when members are active and can more easily be asked to become involved in the audit at the club?



1st International Soaring Grand Prix

Discussions over recent years and at the 1999 IGC meeting have focused on finding a new way to "play" our sport — a way which will be interesting for the public, attract attention from sports-minded people and hence be a way to attract media and sponsorship, and one which should really motivate the pilots involved.

- It must be easy to understand by people with no gliding technical knowledge
- It must be interesting/exciting so that a short media section will hold the interest of the public.
- It must be easy to score and administer.
- It must demonstrate the technical excellence of our sport.
- It must be interesting to the competitors, test their skills, and
- It must be fun.

The basic rules are simple to follow:

- Pre-set tasks, with a nominal time of 2.5 to 4.0 hours duration,
- Gliders compete in groups of 8-12 aircraft, with pilots rotated through groups each day. This reduces the size of gaggles and increases interest for spectators, and there are more winners each day.
- Racehorse start similar to a yacht race. Rapid launch and start.
- Simple scoring using a place system similar to Grand Prix racing cars to make scoring easy to understand — it is easy to calculate what each pilot needs to do to win the competition, and the one with the most points on the last day wins.
- Simple to understand — the first one home wins.
- Exciting — there should be close finishes. Use of GNSS display and pilot radio contact to bring the flying into the "lounge room".
- Competitive — A place scoring system greatly rewards the first one home, which is an incentive to get a lead by taking some tactical risks. Points for the bottom half of the field are very similar, so there is no major penalty if a gamble doesn't work. Having a bad day? — come home slowly or early with minimum penalty.
- Limited spread of glider performance (with no handicaps applied) eg. Discus, LS8, ASW-20, Ventus, LS6. Sailplanes will fly with a wing loading limit of 43 kg/m² (15m) or 45 kg/m² (Std).

A case study — "Barossaglide"

We conducted the 1st Australian Grand Prix in conjunction with the Barossaglide international event in Gawler in January 2000. This was an opportunity to test the basic concept

and to gauge the pilot's opinion of the benefits of this form of racing.

The event was a great success. Firstly, the concept worked as planned, secondly the pilots had a great time with some very demanding competition and lots of fun. All have fully endorsed the concept, all claimed it as the best racing competition that they have flown in. There was a mixture of one-on-one racing, independent racing, close finishes, wins by 20 minutes, wins by 10 seconds. The competition was safe. Despite predictions to the contrary there was little gagging, all pilots were keen to try their own tactics to "get an edge".

The first international event

The *1st International Soaring Grand Prix* will be run in conjunction with the 1st World Gliding Championship – Club Class, in January 2001. By holding this trial competition in conjunction with another significant event we can utilize the competition organization, look closely at its success and gain input from some of our current world level competitors.

An invitation

Pilots worldwide are invited to join in this stimulating and exciting event. Three pilots per country are initially invited to participate. If fewer than 24 entries are received, additional entries will be accepted from pilots of any nationality.

Entry forms, rules and other information are available on the World Club Class webpage <www.worldclubclass.on.net>.

Terry Cubley

Sporting Code changes, notes from IGC meeting

A proposal from South Africa was passed to limit flight verification for world records to flight recorder evidence alone. This was to include height records, although the accuracy of electronic barographs was not in dispute. Past cheating with camera evidence was the main reason for the change — FR evidence is much more secure.

A USA proposal that the method of measuring wing span be changed to allow the wings to be supported in their "unloaded" shape was passed. The proposal had the support of a number of German manufacturers.

Austria proposed to allow all distance flights for badges to be "free", ie. not declared. Most of the discussion was strongly against the proposal, with some just as strongly in favour. However the vote was 13 in favour, 12 against with 2 abstentions. As the proposal

did not gain an absolute majority, it lost. An alternate proposal to not allow the use of GPS at all on badge flights lost.

The Sporting Code committee proposals consisted mainly of corrections and rectification of omissions in the 1999 edition of the SC3. All passed without dissent, and permission was given to include any other editorial changes required that appear before publication, provide IGC policy is not affected.

The Sporting Code has three annexes:

- **Annex A (competitions)** A rewritten annex was published last year. It will be in use for many northern hemisphere competitions this summer, but so far there has been little comment.

- **Annex B (flight recorders)** This annex gives technical requirements for the approval of new GNSS flight recorders and includes their proper use for flight evidence. It will be the last of the annexes to be rewritten, as much of its content on use has been transferred to the new Annex C.

- **Annex C (pilot and OO guide)** Copies of an early draft were shown around which attracted considerable attention. Consensus shows that it is heading in the right direction. *The annex should be available by now. Tony*

Ross Macintyre, IGC Sporting Code specialist

CAS news

Canadian Advanced Soaring was active over the winter months again this year preparing for the upcoming soaring season. Nick Bonnière has written an excellent Windows-based program for the CAS flight recorders. This program replaces the DOS programs used to edit, upload and convert files from the recorder and should relieve all of the problems people had with the old programs.

CAS has also developed a new set of turnpoints for cross-country flying in southwestern Ontario. The list uses most of the old turnpoints, but has changed several of them to nearby airports, and added lots of new points as well. A complete list can be found in the resources section of the CAS website. There is a link to John Leibacher's page where you will find files formatted for all types of GPS units. Turnpoint books will be produced and sold by CAS. You also have the option of purchasing a CD and printing the colour booklet yourself.

I attended the SAC AGM in Montreal in March and was pleased to see a good turnout for the workshops. I gave a quick briefing at the AGM about CAS and then talked about an hour on cross-country soaring. It was great to see all the people in the audience who were genuinely interested in learning the "secrets" of cross-country soaring.



R2D2 at VSA's Pemberton Soaring Camp. They'll be launching soon to join Hans (Baeggli) in his Solo.

CAS also held a well-attended cross-country seminar in Toronto this winter. Topics ranging from beginning cross-country flying to ridge soaring in Pennsylvania were covered. The group was divided in two, pre-Silver badge and post-Silver badge pilots. This allowed the speakers to effectively target their audience. As with last year's seminar in Hawkesbury, I have had nothing but positive feedback from the event. We will plan to hold another seminar in the Ottawa area next winter.

Finally, as I mentioned in my end of year note, what are your goals this summer? Personally, I want to fly an FAI 28% 500 km triangle in southwest Ontario. Don't forget — to help you meet your goals this summer, CAS will be holding two cross-country clinics this summer (at MSC and SOSA) as well as a few fun contests. Check the calendar of events in this issue for details.

Dave Springfield

Club cross-country training at MSC

At Montreal Soaring Council, we have had a cross-country training program running for a number of years now. Each weekend and holiday we make available:

- sailplanes – 1-26, Single Astir, DG300 or LS-1 and Twin Astir (for dual X-C).
- a tephigram flight each (early) morning and analysis of this data.
- a pilot briefing at 0900 at which time pilots will be selected for these aircraft and assignments will be made one week

hence, to give pilots a good opportunity to make some real cross-country preparations. A debriefing also takes place at this time to go over what has been achieved on the previous day.

The group is placed on a priority list and they then administer it themselves. They are also obliged to provide retrieve and backup for the members. Three pilots change places to provide the leadership.

At MSC we have about half the aircraft utilization as in SOSA (2400 versus 4600 tows) thus there is less pressure to keep aircraft on the field for those not taking part in the cross-country scheme.

I have always found our club accommodating for pilots wishing to seriously pursue this facet of our sport, even when we were doing 4700 flights per year with less equipment of lower performance standards.

Having been looked upon as the soaring instructor to start the scheme, I found it did not satisfy my ideal since I did not find, for many years, a return of the enthusiasm I felt for it, although I had no stake in it (having my own glider) other than to find response and reciprocal contribution of effort. I hasten to point out that changed in 1999 as we had a handful of pilots who aimed at the Silver C and succeeded. This after many years of drought in MSC badge achievements. I felt real good about that!

I feel that there had come to be an opinion among MSC pilots that the FAI badge system was a bunch of hogwash and not at all worth going after. Hopefully this is now changing as it must be remembered that we are, by and large, a competitive animal and the FAI badge system provides a progress ladder which allows pilots to compete with themselves for that 5 hour flight or the 50 km and then the 300 and 500, not to mention 1000 km diploma! These goals are just as valid now as they were years ago.

The three pilots who made the achievements last year are now looked upon to provide leadership among their peers to "carry the torch", so to speak. In short, there has to be a bloody-minded individual who keeps the ball rolling and be patient enough (one of my shortcomings!) to see the seed grow.

John Bisscheroux



Coming Events

9-15 July **Western SAC Instructor Course**
Black Diamond, AB. Blaniks and aerotow. If you are interested, contact Terry Southwood asap at (403) 255-4667.

18-22 July **CAS Summer XC Clinic, MSC**
Contact: Greg Bennett <kimja@hawk.igs.net>

29 Jul - 7 Aug **Cowley Summer Camp**
Come to the biggest, best annual soaring event in a wonderful soaring setting. Provincial contest held midweek. Tony <free-flt@agt.net>

5-7 Aug **SOSA Mudbowl** Fun X-C weekend.
Dave Springfield <springford-d@rmc.ca>

14-18 Aug **CAS/SOSA cross-country clinic**
Dave Springfield <springford-d@rmc.ca>

19-20 August **SOSA Fun Contest**
Dave Springfield <springford-d@rmc.ca>

2-4 September **Ontario Provincials** COSA.

Come and soar with the bald eagles! PEMBERTON SOARING CENTRE

Operating daily April to October in Pemberton, BC

- excellent mountain scenery with thermals to 12,500 ft
- camp at the airport, B&B, or stay in Whistler
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The following badge legs were recorded in the Canadian Soaring Register during the period 8 December 1999 to 23 April 2000.

1000 km DIPLOME					
Dale Kramer	SOSA	1001.4 km	LS-4	Julian, PA	7 Nov 99
GOLD BADGE					
289 William McArthur	Alberni				
290 Alain Berinstain	Gatineau				
SILVER BADGE					
928 Nigel Holmes	SOSA				
DIAMOND DISTANCE (500 km flight)					
William McArthur	Alberni	516.4 km	Astir CS77	Ephrata, WA	26 Jun 99
DIAMOND GOAL (300 km goal flight)					
Nigel Holmes	SOSA	302.6 km	SZD-55	Rockton, ON	11 Jul 99
DIAMOND ALTITUDE (5000 m gain)					
Alain Berinstain	Gatineau	5970 m	DG300	Minden, NV	13 Jan 00
Attila Kardos	Vancouver	6450 m	Grob 103	Minden, NV	10 Jan 00
GOLD DISTANCE (300 km flight)					
Peter Foster	York	304.7 km	ASW-24	Arthur E, ON	22 Aug 99
Stephen Liard	SOSA	318.4 km	Grob G102	Rockton, ON	11 Jul 99
Nigel Holmes	SOSA	302.6 km	SZD-55	Rockton, ON	11 Jul 99
GOLD ALTITUDE (3000 m gain)					
Alain Berinstain	Gatineau	5970 m	DG300	Minden, NV	13 Jan 00
SILVER DURATION (5 hour flight)					
Nigel Holmes	SOSA	5:16 h	SZD-55	Rockton, ON	11 Jul 99

GPS position errors reduce

GPS "Selective Availability" (SA) was turned off on 1 May. I have carried out GPS signal accuracy tests in the southeast of the UK from a moving vehicle over accurately surveyed ground points. The overall average is now 13.0m from 321 samples, with a maximum reading of 39m.

People are asking about the use of GPS altitude. It was raised last year in the IGC and now that SA is off (for now, anyway), it is a live issue. Previous tests have indicated that altitude errors are about 1.8 times those for lat/long, due to the geometry of the position lines which form a 3-D fix. For your info, I include tables of lat/long and assumed altitude errors without the SA effect.

Lat/Long probability of being within specified dist:

100% within 39m, average 13.0m
 99% within 29m, average within 99% sample 12.7m
 95% within 22m, average within 95% sample 12.2m
 90% within 20m, average within 90% sample 11.8m
 80% within 18m, average within 80% sample 11.0m
 75% within 17m, average within 75% sample 10.5m
 70% within 17m, average within 70% sample 10.0m
 60% within 16m, average within 60% sample 9.0m
 50% within 14m, average within 50% sample 7.8m

Altitude: Making the assumption based on previous evidence that, on average, altitude error is 1.8 times lat/long error, the figures become:

100% prob of GPS alt being within 70.2m
 99% prob of GPS alt being within 52.2m
 95% prob of GPS alt being within 39.6m
 90% prob of GPS alt being within 36m
 80% prob of GPS alt being within 32.4m
 75% prob of GPS alt being within 30.6m
 70% prob of GPS alt being within 30.6m
 60% prob of GPS alt being within 28.8m
 50% prob of GPS alt being within 27.0m

Ian Strachan, chairman IGC GPS committee

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4	FAI 'C' badge, cloth, 3" dia.	\$ 6.00
5	FAI SILVER badge, cloth 3" dia.	\$12.00
6	FAI GOLD badge, cloth 3" dia.	\$12.00
7	FAI 'C' badge, silver plate pin	\$ 5.00
8	FAI SILVER badge, pin	\$45.00
9	FAI GOLD badge, gold plate pin	\$45.00
	<i>Items 7-12 ordered through FAI awards chairman - see Committees list</i>	
	<i>Items 10, 11 not stocked - external purchase approval given</i>	
10	FAI GOLD badge 10k or 14k pin	
11	FAI DIAMOND badge, 10k or 14k pin and diamonds	
12	FAI Gliding Certificate (personal record of badge achievements)	\$10.00
	Processing fee for each FAI application form submitted	\$15.00
13	FAI badge application (download from SAC website forms page)	n/c
14	Official Observer application (download from SAC website forms page)	n/c
15	SAC Flight Trophies application (download from SAC website forms page)	n/c
16	FAI Records application (download from SAC website forms page)	n/c
17	Flight Declaration (download from SAC website forms page)	n/c

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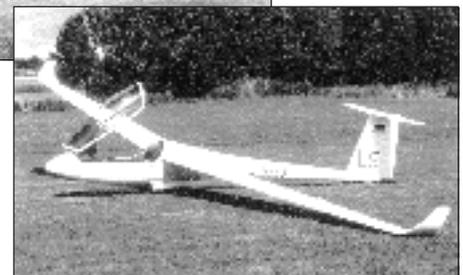
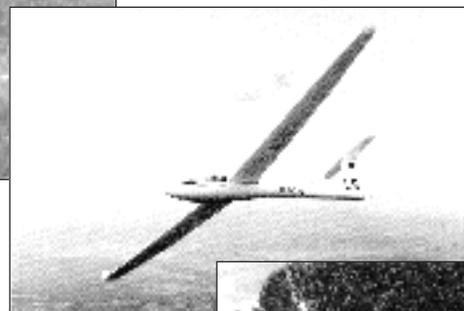
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