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Mike Glattois

Neil Gegenbauer is rock polishing in ASW-20C "Y3" about a 150 kilometres into his 16 July 1997 Diamond distance flight in the Columbia valley of BC.

Liaison Pierre Pepin

Toronto Life magazine For those of you who can get access to the March issue of this publication, there is an interesting article by June Callwood of Beaver Valley Soaring. I liked the article for two reasons: First, it gives soaring great exposure. Second, it demonstrates that the sport is accessible to people well into their retirement age. Ms Callwood went solo at age 73! Need I say more.

Bluenose Soaring On March 12, while on a business trip in Halifax, I joined the members for their AGM. I was happy to see that the club is organizing the purchase of a high performance glass ship. That and a good recruiting campaign, supported by the solid corps of instructors, will put that club in a growth mode. I hope to be flying with them at Stanley this summer and report to you of their success.

Recruiting By the time you receive this issue, the SAC office will have sent you a promotional package, including a good "how to" manual written by John Broomhall. As I said many times in this column, recruiting is one of the essentials for prosperity. Well-managed clubs attract interesting individuals. It allows the sport to be accessible to many individuals. Baby boomers and power pilots should be our prime targets for new members.

The Toronto AGM I was surprised and disappointed by such a low attendance in the area where over 40% of our members reside. No more than 40 people took part in any of the events. I wonder why. I have been asking myself over the last few years if the current formula has completed its course and needs to be changed. I am looking forward to your suggestions.

• • • •

Le club de vol à voile de Québec s'est mérité le trophée Roden, décerné au club qui a fait la meilleure utilisation de ses équipements, compte tenu de sa taille. En 98, les critères d'éligibilité, qui seront publiés sous peu, mettront plus l'accent sur les performances en vol, soit l'obtention de brevets et de badges FAI. Compte tenu de l'effort colossal des gens de Québec en 97 en matière de recrutement et de formation, il n'est pas surprenant qu'ils ait gagné haut la main cette reconnaissance. Le cours d'instructeur semble en bonne voie de réalisation. Québec a quelque cinq aspirants. Plus de détails seront disponibles sous peu sur le site internet de l'ACVV.

Je serai au "ridge" en Pennsylvanie du 18 au 25 avril. J'espère que dame nature sera gentille et me permettra de taquiner un 500 km. Pour ceux que ça intéresse, le repaire de Tom Knauff attire à cette période un bon nombre des pilotes les plus expérimentés du nord est du continent. Les conversations sont toujours intéressantes et la convivialité est de rigueur.

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are low final glides driven by ... rules?

4 a safety issue ♦ *Tony Burton*

tame your camera!

6 a light look at camera maintenance ♦ *Martin Boycott-Brown*

1997 accident/incident analysis

8 a relatively good year ♦ *George Eckschmiedt*

thermal structure

12 an anatomy lecture ♦ *Ingo Renner*

SAC ANNUAL GENERAL MEETING

insert of AGM and 1997 reports

DEPARTMENTS

5 ***Letters & Opinions*** — a letter from southern Europe

13 ***Club News*** — Winnipeg, flashback – 35 years ago in Argentina

14 ***Training & Safety*** — change to 'cannot release' signal, teaching gliding – some views on instructing

16 ***Hangar Flying*** — optimum c of g position is not rearmost, hi-tech material used in old gliders, Walter Weir is 1998 USA Seniors champ, new amendments to "Badge and Record Flying", Toronto area ground school, 1998 SAC sailplane handicap list

18 ***SAC News*** — Corley scholarship call for candidates, new rules for Roden trophy, special certificate of airworthiness for owner maintained gliders, SAC documents available on new website, 1997 contest seeding list

20 ***FAI Records*** — new club category record instituted, current Canadian soaring records



Cover

The cover is a slightly reduced version of the poster which has been prepared by SAC for club use and distribution.

photo-montage: Roberto Centazzo

Are low final glides driven by contest rules?

This letter was sent to "Safety Corner" in SOARING magazine recently. In considering the accident report of a crash at a contest, the writer came to the conclusion that there is a systemic factor to this and many similar incidents/accidents at competitions, and that causation cannot be laid solely at the feet of "pilot error" or "lack of airmanship". It's instructive to reread the article "Safety in soaring – a wider look" by Ian Oldaker in the 2/92 issue of free flight in which pilot, equipment, and environmental factors are all considered in accident analysis (Hadden's matrix).

This letter got wide e-mail distribution and comment amongst our contest pilots prior to the SAC AGM. No consensus was reached on positive changes which might reduce the "environmental" factor discussed below. Nevertheless, it behooves all cross-country, badge, and contest pilots to beware (be aware) of this not-so-invisible risk that can affect their judgement on final glides. Tony

I've been mulling over your report on the Ventus 2 crash last summer (a power line strike, during an off field landing, a few miles from the runway, during a contest), and I think there is more to be said about it. I don't know anything about the accident beyond what I read in your column and the contest report. You put the crash variously into the categories "low decision to land", "wire strike", "stall on base/final", and "macho pilot". From the report, perhaps all were true, but I think they give a false sense of security to the rest of us, who are aware of these dangers and have thought out what to do to avoid them.

I think the "2-mile-out landing on contest final glide" is a separate category. This crash sounds like it is primarily in this category. It's a crash scenario I think we should pay more attention to. It is a scenario that has been bugging me for a long time, I see lots of it, and I can't confidently think of a way to protect myself from doing the same thing.

As you reported, the crash was on a contest final glide, about two miles from the airport. I'm an avid reader of contest reports, and landings two to three miles from the home airport are amazingly common in contests. Soaring contest write-ups report about five or so of these per year. Most contests I have been to feature at least one such landing, and not many of these incidents get reported in SOARING magazine; so I extrapolate that there are a lot more than five such landings per year. Furthermore, both contest experience and the magazine reports feature lots and lots of low, slow, "just made it in" final glides; pilots who just did or didn't make it over the fence, and so on — all in sort of a "heh, heh, wasn't that fun" mood, by the way. However, the mood should probably be the same as when you've missed being hit by a jet by ten feet. This doesn't just happen to macho newcomers either. Soaring has reported 2-mile-out landings by most of our world and national champions.

Now at 2 miles out, 40:1 gives 300 feet. 350 is gobs of altitude and 250 is not enough. Every pilot who ever made one of these 2-mile-out landings made the decision to land, chose the field, did the checklist (ha!), etc. from 300 feet or less. It's just inescapable — if you did it at 800 feet you could cruise home instead at redline.

Furthermore, "normal" cross-country outlandings are preceded by a course deviation to good fields, a search for thermals as you sink from 2000 feet or so to decision height (say 600 feet) during which you also have time to look over the fields, pick out obstacles, etc. A 2-mile-out outlanding will be preceded by none of this. You probably thought you could make it at 10–15 miles out (or you would have stopped then), and found unexpected sink/headwind. Typically you'll be making a beeline for the airport, trying to save every inch of altitude, not deviating for fields. You're spending a lot of time with the GPS, "can I or can't I?" your heart rising or sinking with each twitch of the variometer. You're thinking about headwinds, little patches of lift, finding the home airport, not thinking about fields that are also far ahead and at a 35:1 angle to your view, anyway. The last thing you're going to do at 300 feet two miles from home is fly around looking for a thermal while checking out the fields. In sum, any 2-mile-out landing is inevitably going to be a horribly rushed, last minute affair.

Back to the Ventus crash. You didn't say much about the GPS track, but viewed as a case of "close final glide syndrome", I have a lot of questions. How far out did → p19



The SOARING ASSOCIATION of CANADA

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

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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. A 3.5" disk copy of text in any common word processing format is welcome (Macintosh preferred, DOS is ok in ASCII text). All material is subject to editing to the space requirements and the quality standards of the magazine.

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

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est une organisation à but non lucratif formée de personnes enthousiastes cherchant à développer et à promouvoir le vol à voile sous toutes ses formes sur une base nationale et internationale. L'association est membre de l'Aéro Club du Canada (ACC) représentant le Canada au sein de la Fédération Aéronautique Internationale (FAI), administration formée des aéro clubs nationaux responsables des sports aériens à l'échelle mondiale. Selon les normes de la FAI, l'ACC a délégué à l'Association Canadienne de Vol à Voile la supervision des activités de vol à voile telles que tentatives de records, sanctions des compétitions, délivrance des brevets de la FAI etc. ainsi que la sélection d'une équipe nationale pour les championnats mondiaux biennaux de vol à voile.

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Les épreuves de photo en noir et blanc ou couleur sont requises; pas de diapositives ni de négatifs s'il vous plaît.

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Veuillez vous adresser au bureau national à l'adresse indiquée à gauche du bas de la page pour tout changement d'adresse et abonnement à *vol libre*. Les prix des abonnements à cette revue sont les suivants: au Canada \$26, \$47 et \$65 pour 1, 2 ou 3 ans et aux Etats Unis et outre-mer les mêmes montants mais exprimés en \$ américains.

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Letters & Opinions

A LETTER FROM SOUTHERN EUROPE

Frank Pennauer

Even in the most southern part of Europe there is little or no soaring activity at this time of year. We have just been to Evora, located in the middle of Portugal, its flat region is called the Alentejo.

Evora airport is the base of Planar, a club/commercial operation, where they fly from March to the end of October each year. The club owns a Lak-12, a Twin Astir, an ASW-20 and an Astir Jeans which can be rented on an hourly/daily or weekly basis, and 180 hp Ralley and 180 hp Chipmunk towplanes. The rental costs start at 4350 Escudos an hour with the tow being charged at 300 Escudos per minute; a Canadian licence is valid to fly their gliders.

The airport is a five minute drive from the city of Evora which is one of the most ancient historical sites in Portugal; it is an hour and a half drive from Lisbon, and a three hour drive from the Algarve. The area is known for excellent thermals up to 9000 feet. On the airport there is a free camping area and there are reasonably priced hotels in Evora costing 7-10,000 Escudos for a double room. For further information you can contact: Planar, Aerodromo Municipal de Evora, Apartado 423, 7000 Evora, Portugal.

In the meantime I received the excellent news that the *European Soaring Club* (a Brian and Gil Spreckley operation) is starting to fly this year from Ontur in the southeastern part of Spain. Ontur is a small airfield, 22 kilometres from Hellin, 50 kilometres south of Albacete, and a 100 northwest of Alicante on the Mediterranean coast.

The airfield was developed over many years by a small group of soaring enthusiasts with the driving force being Eusebio Perez Pastor and his uncle, Thomas. From a dusty dirt strip surrounded by almond trees they created an airport with a 3000 foot paved runway, a modern 13,000 square foot hangar, washroom facilities with showers, a large camping area, and six small bungalows for the use of visiting pilots and their families. There are also small houses for rent in the nearby villages, a bed and breakfast, and several very reasonable hotels in towns between 5-20 kilometres from the field.

It is claimed that the area has 300 days of sunshine per year with average daytime temperatures of 15°C in winter and 32°C in summer. The nearest mountain is 1700 feet agl, two kilometres northeast of the field. Thirty-five kilometres to the south start the foothills of the Sistemas Beticos. These are several mountain ranges with heights up to 8000 feet and extend 300 kilometres to the south towards the Sierra Nevada which are in excess of 10,000 feet. This area has been explored with a Stemme S10 with a pure soaring flight of 1000 kilometres in June 1996 and regular soaring flights in summer and winter of 300-400 kilometres.

In 1998 the "European Soaring Club" will fly in Ontur the first two weeks in May and the whole of June, and from the beginning of September to the middle of October. They will bring their single seaters like LS8, LS4, ASW-20, ASW-19, and their ASH-25 and ASK-21 two-seaters and their own towplanes. Gliders can be hired by the hour, day or week, starting at L20/h, L60/day, L365/week. Not only has this area a great potential to become one of the foremost soaring areas in Europe, it is also a great place for a holiday, to explore many of the historical sites of Spain, its outstanding flora and wildlife and, of course, the great beaches of the Mediterranean.

Further information on Ontur or the ESC operations in the Pyrenees, France and Mmabatho in South Africa can be obtained from:

Elaine Townsend,
82 Bedford Road, East Finchley,
London N2 9DA, fax 44 181 883 8096

Tame your camera!

Martin Boycott-Brown, from *Sailplane & Gliding*
illustrations by Gil Parcell

Occasionally, when in a deeply philosophical mood — a state of mind easily induced by spending hours in the dark developing contest films — I found myself contemplating one of life's eternal verities. The pilot who is flying this year's model of the Flatus 3 with 47 metre winglets and three Oxford ZNAVs, puts it in a Viper trailer, and uses a Rolls-Royce *Carte Blanche* as a towing vehicle, is also likely to be using a 1911 Thornton-Pickard bellows camera and glass-plate negatives. He is easily identified in a gaggle because he has to put a black cloth over his head to photograph every TP.

Sometimes these people use more modern equipment that has been judiciously selected from the wide range available at last year's Salvation Army sale, but such extravagance is tempered with thrift. If there is still an old film in the camera when he buys it, our pilot will probably use the remaining bit for his 300 kilometre attempt. This explains the presence of the horse-drawn bus and gentlemen with walrus moustaches at the beginning of a film which then goes on to show highway interchanges.

However, you don't have to be rich to put your faith in some fairly rickety photographic equipment. Those who turn up for a contest with a Wright Mark 1 are also unlikely to be using two Hasselblads for their

snaps. But why spend money now? No doubt most people have already seen the star in the east that announces the "Age of the GPS", and those of impecunious means (broke) will feel little temptation to buy a decent camera instead of saving for the small black box that makes it fruitless to deny that you have been in the TCA.

I fully understand. However, until you have enough money, you might like to consider the following advice, which is aimed at helping you to get the best out of the equipment you have. (Note: I have tried to imagine the actions of the "Organized Pilot", but it should be noted that this is a completely hypothetical being.)

1 Go and buy two films and, if your camera is less than thirty years old, two sets of batteries. (For older devices, oil the clockwork or get some new rubber bands.) "Expensive!" you say. I say, "How much will you pay for your aerotow? How much for a delight? How much is your time worth? Will you have another opportunity to do your 300, 500 or Silver distance?" If your camera has a data-back, it is well worth replacing the battery for that as well.

On the subject of film, I would advise you to avoid buying anything unusual. At a contest it can make life difficult for the photo-processor, who will probably leave the damned thing 'til last if it requires radically different processing times. It is also worth remembering that a lot of modern cameras set film speeds automatically, but may only be designed to recognize a limited range of speeds. If the camera does not detect that you have used an ISO 50 film, for example, it will not be exposed correctly. While modern emulsions are remarkably resilient and will usually tolerate fairly inaccurate exposure and processing, it is as well to give yourself the best chance of success. Films such as Ilford FP4 and Kodak ISO 100 are two of the most popular and reliable choices.

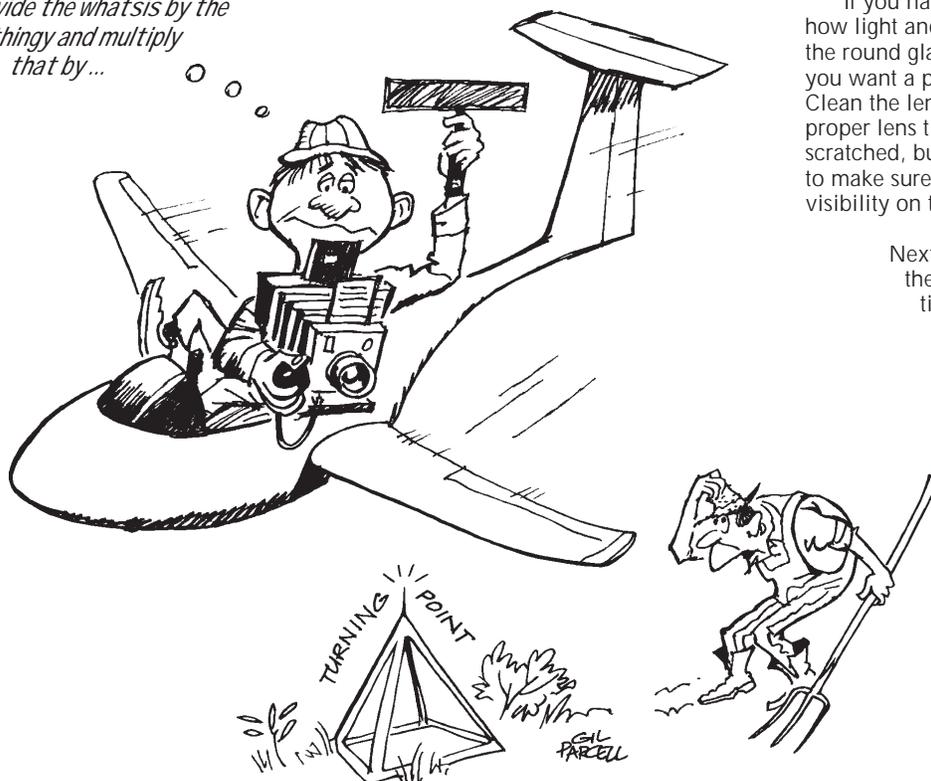
2 Take your camera in your clammy hands.

If you haven't done this for a while, note how light and fragile it seems. If you re-call, the round glass bit faces towards the thing you want a picture of. Now clean the camera. Clean the lens carefully, preferably with some proper lens tissue. I know your canopy is scratched, but this is actually a good reason to make sure there are no greater obstacles to visibility on the lens of the camera.

Next, open the back and remove all the sand, confetti, Christmas decorations, and spiders left over from the last few times you used the device. A small soft paintbrush such as those used for water-colours is ideal for this job. This rigmarole is not just for the sake of godliness: holding the camera and examining it for once means you may actually spot something wrong with it.

3 Open the battery compartment and throw away the old batteries, even if you have only had them for ten years. (I actually heard these words at a competition: "I can't believe the battery in

*Let's see.. 1/100 sec @ f8,
half a stop for the filter, allow for
parallax, divide the whatsis by the
focal thingy and multiply
that by...*





... open the back and remove all the sand, confetti, Christmas decorations, and spiders left over ...

my GPS gave out. I only put it in yesterday. Mind you, it had been in my briefcase for a year..."

It is senseless to keep batteries until they show signs of failing. They may decide to give out right in the middle of a task. Even unused spares ought to be thrown away after a year. Make sure the battery contacts are not corroded. If they are, the electronic circuits inside the camera may be in similar condition, which is not good news, and ought to encourage a trip to the shop. If they are merely dirty they can be cleaned with a typist's eraser (the sort that looks like a pencil) which is useful for reaching into tight corners.

4 Insert the batteries and film, following the maker's instructions, which are in that little book you didn't bother to read when you bought the camera, and is now in the attic with the box. If you have an older camera with a manual rewind, make sure the film is reasonably tight by gently turning back the rewind knob after you have closed the back.

5 Check that the film is winding correctly, if possible. This can't be done with most modern cameras, which swallow a film whole, and smugly refuse to give you any reliable information about what is happening inside until it is too late. With older cameras you see the rewind knob turning as you wind on the next frame.

6 Now use a piece of duct tape to secure the back so that it cannot be opened unintentionally. Write the words, "Rewind the film, idiot!" on the tape. (Note: some modern cameras use a cunning system of spooling the entire film out of the cassette, then winding each newly exposed frame back inside, which protects the already exposed film. This obviates the need for taping the back shut.)

7 Take a couple of test shots at the beginning of the film. This will give you some idea of whether the camera is actually working. If it makes the right noises, you are probably in business. Moreover, it protects the first important frame in case of light leaking into the film cassette, or too much being cut off the leader in processing, etc.

8 Fit the camera to the mount in the cockpit. Make sure it is close enough to the canopy to eliminate reflections from the perspex and prevent anything from getting between the lens and the outside world. I have seen some cases of fingers obscuring turnpoints.

9 You are now ready to fly. Carry out the normal photographic procedures for your task. Take two shots of everything. You never know. (The reason why the pros get such good photos is that where you take one frame, they take anything from three to several hundred.)

10 After the flight take another couple of shots at the end of the film as a "buffer" between the end and the important frames.

11 Read the words you wrote on the tape. Reflect on them. Now rewind the film.

12 Take off the tape, open the back and extract the film cassette.

13 Put some wing tape around the cassette and write the flight details on the tape. This is particularly important if your camera leaves the tongue of the leader protruding from the cassette. The tape will prevent the film from being pulled out, and will also stop you from using the same film twice. It has been done — by me, actually. As an alternative, write the details of the flight on the tongue of the leader, or cut it off.

14 Celebrate your 300, 500, etc? No, no, no! That was merely a virtual flight! When the film has been developed, and you have hard evidence that everything has worked, *then* you can go and celebrate your badge flight.

After reading this, you may think I am an insecure pessimist (I suppose that makes me the type of person who always carries both an umbrella and sun block), but just ask around and see if anyone you know has ever "had problems with their photos" on a badge flight.

PS. I am not expecting anybody to do any of this. I merely wrote this so that parents would have something to read to their children at night. ❖

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1997 Accident/Incident report

George Eckschmiedt

Learn from the mistakes of others; you will not live long enough to make them all yourself!

The slogan to the left has been borrowed from Transport Canada's *Safety Newsletter*. By now anyone with a student pilot permit should be very familiar with it.

We were very fortunate in 1997 that we did not lose a life to soaring; we could have. The midair collision at the Nationals was one of the most serious accidents of the year, and it was only by the grace of God that both pilots survived. If I were them, I would designate the anniversary of that date as my second birthday.

We also had a couple of other serious injuries that could have resulted in loss of life, but the pilots were lucky. One of them ended up in a wheel chair, but there is a chance that he may walk again.

From this depressing introduction, a novice reader could easily ask: "Is soaring safe?" It is as safe as we make it — you and I. Soaring *is* safe, but are you, and am I? The sparse data below illustrate just how safe we are.

The data for this report was obtained from SAC office, CFIs and Safety Officers notes, and personal notes given

or mailed to me. Again, this year I have taken the liberty to include any information sent directly to me as "reported to SAC". I have not received any direct copies of the insurance correspondence, which relieves me in a way, as my independence is even more emphasized.

As far as the number of accidents go, last year seems to have been a good one. We had "only 12" reported accidents and 17 incidents of various severity. We may have had a few more accidents that were not insurance claims, but I am convinced that the reported incidents are only about 25% of the total. Actually, incident reports have greater value than the accidents, if only this could be made to be understood by pilots.

A few of the reporters of the incidents were very concerned why should they "air their dirty laundry"? Well, my dear friends, the dirty laundry gets cleaned — while those unwashed hidden ones ..? I think you know what I mean. Incident reporters are the conscience of the club, for they see the events and because of that, recognize that they were indeed events, which others could and should learn to avoid. So here are the events, the reasons the way I see them, and some smart-alecky comments.

Accident/Incident coding sheets

The object of the coding sheet is to identify the factors in the event. Items that could have caused the event, the reason, the result, the damaged component, or anything that was directly involved — simply, only the FACTORS. As can be seen in the table opposite, ten years of data from these coding sheets is available. I would hope that the readers themselves will make some comparisons, as the numbers are self evident. Any apparent inconsistencies between the number of entries and the number of events may be that some events may have had more than one factor and that I have had reasons to include that extra entry.

The coding sheets are processed by first examining the reported codes. If they make sense, an entry is placed at the corresponding place in this analysis. Then each and every report is mentally recreated and examined for possible factors. A painful process — visualizing all the mistakes and damages of our friends and their equipment.

Some reports were excellently described and I hope the clubs make good use of them. Some would make excellent reading in *free flight*, leaving little for assumptions, but I have to leave that to the authors to submit them to the editor. On others, some assumptions had to be made, or simply were lending themselves for assumptions.

I am in a very difficult position about a few reports. On one hand, I am very glad and thankful that they were written at all. On the other hand, I wonder why would people try to make excuses for a mistake? The only thing that is more fragile than a glider's canopy is a glider pilot's ego.

I keep searching the Internet for comparable data but nothing usable shows up. This is something that the

FAI and the IGC should seriously consider, to obtain information from the nations for comparative analysis. Maybe we could learn from each other?

Factors in the events: 97 96 95 94 93 92 91 90 89 88

TYPE OF EVENT

1.1 Heavy landing	4	0	8	12	10	4	6	5	5	6
1.2 Undershoot	3	6	9	10	8	6	2	6	18	5
1.3 Overshoot	0	1	2	6	3	1	0	1	1	1
1.4 Groundloop	0	1	12	9	8	6	5	4	4	3
1.5 Collision (ground)	3	1	3	10	7	0	0	0	4	2
1.6 Collision (air)	1	0	0	1	0	0	0	0	0	0
1.7 Stall	1	0	1	2	2	0	0	2	0	0
1.8 Spin	1	2	2	2	4	3	1	2	0	0
1.9 Structural failure	2	3	2	3	1	1	3	2	1	1
1.10 Blown/flip over	0	1	2	0	0	0	0	3	2	0
1.11 Gear up landing	2	3	2	2	3	0	2	0	2	0
1.12 Gear collapse	2	0	2	3	1	1	0	1	1	1
1.13 Takeoff	3	3	5	21	4	6	5	4	2	0
1.14 Other	7	5	9	19	11	13	16	15	14	8
Near collision	3	1	5	8						

AIRCRAFT DAMAGE

2.1 None	16	10	45	50	11	15	14	13	17	14
2.2 Minor	9	6	9	15	13	6	17	10	13	2
2.3 Substantial	2	5	11	19	16	13	3	9	11	9
2.4 Destroyed	3	7	4	3	5	3	2	5	4	2

PERSONNEL INJURY

3.1 None	26	22	66	83	40	33	29	24	43	22
3.2 Minor	3	2	3	3	4	1	0	4	1	2
3.3 Serious	3	2	0	1	1	1	0	0	3	2
3.4 Fatality	0	2	0	0	0	2	1	4	0	1

AIRFRAME FAILURE OR DAMAGE

a. In flight failure	2	2	1	5	1	5	5	5	0	0
b. Damage at accident	11	10	20	32	27	14	14	0	0	0
c. Handling damage	2	5	4	5	6	7	7	0	0	0

	97	96	95	94	93	92	91	90	89	88
FAILED/DAMAGED										
4.1 Flight controls	1	3	1	1	4	2	2	3	2	1
4.2 Elevator	0	4	1	3	8	4	4	5	3	3
4.3 Rudder	3	0	2	6	5	5	3	6	2	2
4.4 Ailerons	1	3	2	3	5	3	2	5	1	0
4.5 Flaps	1	3	3	1	3	1	3	2	1	0
4.6 Wings	3	11	9	14	17	8	5	10	6	4
4.7 Spoilers/dive brakes	3	3	4	1	4	0	1	1	2	0
4.8 Undercarriage	10	5	6	9	12	4	5	6	1	4
4.9 Canopy/doors	2	5	8	5	10	5	6	6	7	5
4.10 Fuselage	4	9	12	13	23	9	7	5	13	8
4.11 Release	1	0	1	1	0	1	2	0	0	0
4.12 Instruments/engine	2	2	2	3	0	3	0	1	0	0

	97	96	95	94	93	92	91	90	89	88
TOWING										
5.1 Premature release	0	2	5	4	2	2	3	0	0	0
5.2 Rope/cable break	0	1	0	1	0	0	0	0	0	1
5.3 Winch/tug failed	2	0	1	5	2	1	0	0	2	0
5.4 Rope/cable snag	1	0	1	2	0	1	1	0	2	1
5.5 Divebrake opened	3	0	3	5	0	1	0	1	4	2
5.6 Towplane upset (on ground)	0	2	0	1	0	0	1	0	0	1
5.7 Run out of fuel	0	0	0	1	1	0	1	2	0	0
5.8 Taxiing mishap	2	0	2	3	1	3	0	2	0	0

	97	96	95	94	93	92	91	90	89	88
PILOT FACTOR										
6.1 Misused controls	2	5	7	20	6	8	4	3	9	2
6.2 Misused spoilers	2	1	4	17	5	3	1	2	1	1
6.3 Misused flaps	1	1	3	4	1	0	1	1	2	0
6.4 Misjudged distance	2	2	5	6	6	3	6	4	8	2
6.5 Misjudged speed	2	2	4	5	3	3	2	2	1	2
6.6 Misjudged altitude	7	3	14	8	11	4	4	10	13	4
6.7 Misjudged conditions	2	3	20	10	11	9	7	8	10	4
6.8 No wind compensatn	1	3	2	6	4	4	5	3	8	3
6.9 Did not see object	7	5	12	6	2	3	3	2	4	5
6.10 Did not keep speed	0	1	1	2	1	4	1	2	1	0
6.11 Overstressed A/C	1	2	1	2	1	2	1	1	0	0
6.12 Exceed experience	2	4	4	4	2	5	4	3	4	1
6.13 Reckless flying	1	0	2	2	2	2	2	4	1	0
6.14 Insufficient training	2	3	8	7	3	4	1	2	5	2
6.15 Physical impairment	0	1	1	0	0	0	1	0	0	1
6.16 Wrong decision	7	10	23	12	6	5	11	16	11	
6.17 Instructor failed	5	1	5	8	3	3	3	0	0	3
6.18 Other/complacency	5	7	16	18	19	4	7	9	4	2

	97	96	95	94	93	92	91	90	89	88
WEATHER										
7.1 Low ceiling	0	0	0	0	0	0	0	0	0	1
7.2 Rain	0	0	2	0	1	0	0	0	0	1
7.3 Hail	0	0	0	0	0	0	1	3	0	0
7.4 Crosswind	1	2	9	10	5	2	2	3	1	1
7.5 Severe turbulence	5	1	3	2	3	0	1	0	0	3
7.6 Wind gradient	0	0	7	4	3	1	1	0	1	1
7.7 Wind shift	0	0	1	4	0	1	1	0	0	0
7.8 Thunderstorm	0	0	0	1	1	0	0	1	0	0
7.9 Severe sink	2	0	8	4	3	0	1	1	0	2
7.10 Line squall	0	1	2	1	0	1	1	3	0	0
7.11 Lightning	0	0	0	0	0	0	0	0	0	0
7.12 Poor visibility	1	0	2	2	2	2	0	1	0	1
7.13 Clear (if factor)	0	0	0	0	0	0	0	0	0	0
7.14 Weather not factor	20	24	46	66	27	30	29	-	-	-

Data Analysis

Eric Newsome may not be flying any more (he still writes well), but his words will remain true for as long as we are human pilots:

PEOPLE ARE SUBSTITUTING CONVENIENCE FOR SAFETY

It is difficult if not impossible to reach any conclusion from the small amount of annual data, but now you are looking at ten years of history and data.

The available space and time precludes the analysis of the decade, but it could be done by anyone if the data is inserted into a spreadsheet and displayed in charts. Space precludes all the pretty charts.

As in previous years, the events were grouped to highlight certain major common characteristics such as reported, not reported, accidents, incidents, etc. The Table of Events on the next page summarizes them all. Many people were concerned about the de-identification of the events. Frankly, the clubs that reported are the heroes as opposed to the low lying, "let's not talk about it then it did not happen types". Denying that something happened is akin to cheating; would you want to have anything to do with cheaters? My tip of the hat, respect, and admiration to those who described their misadventure in detail for inclusion here.

Non-flying events are just improper handling. No point in harping over them, we all know it is usually just carelessness, either before or at the time of damage.

Of the 27 flying events in 1997, 10 were landing related. No groundloops this year, but the landing gear related events are noticeable. Other than that, the characteristics of the accidents and incidents remain the same. There are totally excusable events, such as the planned cross-country off-field landing when the unseen, small obstacle creates large (or not so large) damage. Then there are the ones that are totally preventable, and happen only because we are not doing things that we know we should. It's not that people don't know what to do. Inexperienced pilots and those of advanced age have an excuse. When I read that an 84 year young pilot landed short of the runway, I thought to myself, God bless you sir, if I am at that field, I would go to retrieve you without bitching. But for a highly experienced pilot hitting the edge of the runway, the same location that was hit by another glider last year, makes me wonder about our sanity. For one thing, why not fix that apron, and for next, after another glider having hit the same runway edge should serve as a reminder about runway edges.

This year a Libelle had rudder flutter. Last year the VSA's Grob had elevator flutter, and in 1994 another Libelle lost its rudder cable. My dear friends, these gliders are old — no amount of casual inspection will reveal all the defects in them. That doesn't mean that I would not sit in WWII Kranich, but I would not do any abrupt maneuvers, never mind flying it at V_{max} . Please use knowledge-based common sense and intuition.

There was an event where a heavy two seater had an interrupted launch with the damaging consequences. No, the cable did not break but the engine quit, it was claimed, for unknown reasons. Engines do stall if extra heavy load is placed on them. There is no need for further comment, as we all know or should know that one does not pull up before 300 feet of altitude. The cable can break, the engine can stall, and you are up in the air without airspeed. I know; in my younger and more foolish years I have broken the cable and stalled the winch with a K8 — you can certainly do it with a behemoth two seater.

In almost all events, we know what we should have done, but we do not do it. Why? Because we are in a hurry, we get distracted, or we think the rules don't apply to us. As was said many times before, the rules of the air were defined many years before most of us were born, and have proven to be correct. One can only smile at the tempest in the teapot when newer pilots argue about how to do a slideslip. Pick up a book written in the 30s or the 40s when there were no

Table of Events — 1997

Age hours Factors in event and comment

Non Flying Accidents

N/A	N/A	While unpacking the hangar at the beginning of the season the rudder was severely bent at the horn. Improperly put away at the end of the season. Careless handling.
N/A	N/A	Strong winds caused rudder to twist out of shape within the gust lock. Very minor, re-bent and cleared. Gust lock inadequate. Get better locks.

Aviation Accidents not Reported to SAC

N/R	N/R	Midair in contest. No details available. Contest pressure and low visibility! Look outside.
26-59	N/A	On smooth landing towplane lost the tailwheel. Wheel axle failed after 30 years of service. No kidding. Maintenance and inspection?
50-59	101-300	Off-field landing in a pasture, main gear hit a rock, light damage. No other detail available. Presumably on a planned XC flight. Cost of cross country flying.
60+	101-300	On landing pilot got into PIO, head knocked a hole in the canopy. Second landing on type, retracted dive brakes, bounced severely. Nosewheel gliders need slightly different consideration, both on takeoff and landing. How was the belt?
50-59	301-800	On roll-out, gear hit hidden rut, bounced, pilot's head hit and cracked the canopy. Unseen obstruction and loose belts! Check for ruts in runway. Just take a little walk.
50-59	800+	On landing hit the raised edge on the tarmac. Wanting low energy landing, shaved margin of error too fine. Shouldn't have stretched the limits and should fix that runway. Not the first accident there.
60+	800+	Winch failed, pilots reacted incorrectly, spun in, partial recovery, hard impact. Inadequate action for tow failure. Heavy glider on winch, old instructor, student -G sensitivity?, late in the day. Very sad.
N/A	N/A	Off-field landing in contest, gear hit a rock or hole, causing small damage. Unforeseeable occasion. Excusable event. This is what we have insurance for.

Aviation Accidents Reported to SAC

26-49	<100	Pilot's hand slipped off the flap handle, glider slammed to ground from about 20 feet. Left hand was tired and sweaty, turbulent conditions. Low time pilot on a challenging glider.
26-49	800+	Training flight, winch slowed, nose dropped, dragging release through small rocks. Should have released when not enough speed. Lucky that winch driver did not resume launch with damaged release mechanism.

Aviation Incidents

<25	<100	Unplanned off-field landing. On second flight at this new field the Air Cadet instructor got lost. Flying skills are not enough; need thinking skills too.
26-49	<100	Potential collision course with trainer while joining it in a thermal. Misjudged timing of entry into the thermal and ended up on a collision course with glider already there. Insufficient thermal entry instruction for 7 hour total time pilot.
26-49	800+	Severe tail flutter at 3-400 feet, heard on ground. Landed normal. After a 100 knot low-pass & pull up, aircraft hit strong thermal. Loose fitting rudder hinge bolts. Aging glider pushed beyond its limits. Texas thermals in Canada?
26-49	800+	On tow, brakes open. Claims front seat passenger jarred it open with knees. Passenger not briefed adequately. Hard to accept that dive brakes were properly locked. Opening takes pulling. Knee?
26-49	800+	Take off with spoilers deployed. Towpilot signalled, was observed and spoilers closed. Instructor distracted from training. Took four people to allow this to happen.
26-49	800+	Partial engine failure on tow. Had to wave glider off twice in a row. Temperature up, pressure down, fixed coupling. Tightened coupling fractured, lost oil. Poor repair.
26-49	800+	Unauthorized low-level aerobatics with passenger. Opportunity and overconfidence. Experienced pilot showing off.
26-49	N/A	Towplane taxied over tires marking runway edge. Listed to remind limited visibility in taildragger towplane. Strange that it could do it. What do they use for wheel chocks?
26-49	N/A	Towrope touched the powerline about 50 yards back from the threshold. Approach not normally used. Wanting to avoid turbulence off the hangar, cut approach too fine. Briefing, reminders?
26-59	101-300	Landed gear up. Second flight on type. Field Manager called on radio to check gear down; it was already down so it went up. Field Manager interference, not verifying action executed by checklist.
50-59	101-300	Dive brakes sucked open on tow. Distracted, rushed to takeoff, neglected pre-takeoff check or pre-takeoff checks may have been done but not verified if it was effective.
50-59	101-300	Gear collapsed on landing. Gear down verification is not positive on this glider. Pilot insists it was checked. If gear verification is difficult, more attention should be paid to it.
50-59	301-800	Gear up landing. Flies own glider exclusively, just forgot the gear. Sloppy checks, complacency.
50-59	800+	Aerobatics without a parachute in a glider not designated for it by the club. "These rules don't apply to me". Experienced, but conceited pilot showing off.
60+	301-800	Unplanned off-field landing. Drifted too far downwind and had to off-field land on local flight. Pilot blames club for not supplying better variors in club gliders.
60+	800+	Towplane and glider conflict on final. Glider used runway other than active. Confusion on who is landing where and when. See and be seen technique needs to be applied more.
84!	<100	Heavy sink on final, landed short of the runway. Delayed entering base, extended downwind to accommodate extra height. Pilot flies infrequently; at 84 it is a wonder that he flies at all.

NR: Not reported N/A: Not applicable

divebrakes on the gliders. The new books also explain the principles, but they have to be read. There is no funnel to fill the head with knowledge and no silver bullet to kill the enemy. The enemy is us.

Summary and Conclusion

	97	96	95	94	93	92	91	90	89
Reported flying hours distribution									
0-100 hours	4	5	18	25	9	8	7	7	10
101-300 hours	5	5	19	25	5	4	7	5	11
301-800 hours	3	1	6	8	9	3	6	5	7
801-above	10	6	16	11	2	1	4	3	2
Not reported or N/A	7	11	10	18	-	-	-	-	-
# times flight hrs rptd	22	17	59	69	25	16	24	20	-
# flying events	27	23	69	81	41	30	30	31	-
%	81	74	86	85	61	53	80	64	-
Reported pilot age distribution									
16-25	1	0	4	7	2	3	4	3	7
26-49	12	12	28	32	14	9	9	9	7
50-59	7	4	13	10	4	2	6	1	6
60-up	5	3	8	8	9	2	3	3	9
# times age reported	25	19	53	57	29	16	22	16	-
# flying events	27	23	69	81	41	30	30	31	-
%	93	83	78	70	71	53	73	52	-
Number of events	29	28	69	87	45	37	37	40	47
Flying events	27	23	66	81	41	32	30	30	44
Aviation accidents – not reported to SAC	1	3	4	9	11	10	4	7	4
reported to SAC	9	10	16	22	19	6	11	12	17
Non flying accidents – not reported to SAC	0	1	0	2	0	5	5	7	3
reported to SAC	2	4	3	0	4	2	2	3	5
incident report to SAC	17	10	46	50	11	14	15	11	18
Total reports	29	28	69	87	45	37	37	40	47
Aviation accidents	10	13	20	31	30	16	15	19	21
%	34	46	29	36	66	43	41	48	45

SAC membs 1302 1238 1292 1257 1291 1319 1416 1390 1433
 # Gliders insured -400 400 413 417 384 384 370 361 348

Accidents/100 gliders
 in Canada 2.5 3.4 4.8 7.4 7.2 4.2 4.1 5.3 6.0
 in Germany 2.0

Accident/100 pilots 0.7 1.0 1.5 2.5 2.3 1.2 1.1 1.4 1.5

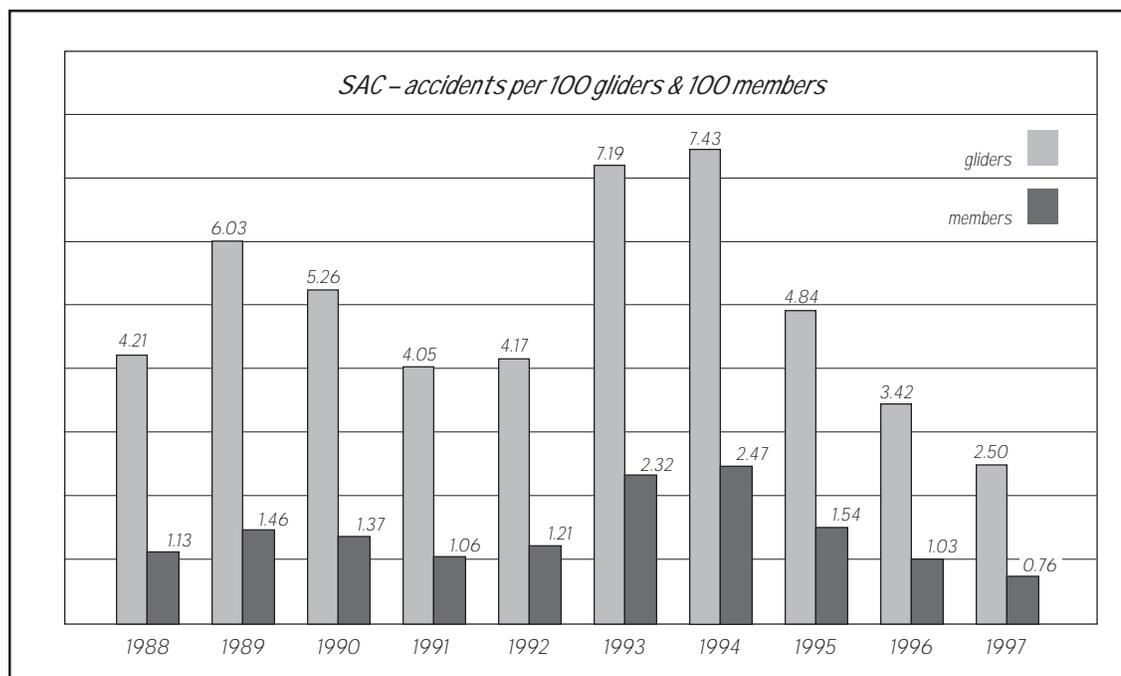
Note: the value from Germany was a one time observation from the Internet, thus its credibility may be questioned.

Overall, an improving trend can be seen. I would be cautious to accredit this improvement to any specific thing. Yes, we did produce a SAC training syllabus, and we do try to remind people to work on their shortcomings, but any novice statistician could claim that our processes are within the normal variations. Let the pundits argue it.

As before, landing is still the most critical element of the flight. We run into things, bounce around, lose our bearings, etc. I ask if we place enough emphasis on teaching landings. But when I see that the low time pilot events are decreasing and the high-timers are increasing, I say that we as instructors do reasonably well, but the high-timers and the oldtimers have something to be concerned about. There are definite improvements about towplane upsets and spin-ins, but we better have that, or we delete ourselves from the sky.

Last year I hypothesized about the culture of gliding. Nothing changed about that. We maintain the road warrior culture and bring it into aviation. The road culture tries to tell us that speed kills. Bunk! Speed is the item that keeps us in the air. However, we never have enough time to do things right, but always have enough time to correct the mistakes. Just think about it: if you allow yourself time to do the things right, you will not have to take an exponential increase of time to make things right. Take time to do the checks, and verify the effect of the check. Take time to get into the circuit at the right place at the right altitude. A vast majority of our events would be eliminated.

Have a safe 1998 season. ❖



Thermal Structure

This article comes from a series of lectures given at the Gawler club in Australia called "Flying Further and Faster". The basis for the lecture series began in 1971 when Helmut Reichmann, then World Standard class champion, participated in the 1970-71 Australian Nationals at Benalla. The lectures include work and input from a variety of sources, including Ingo Renner (a four times World champion).

Ingo Renner
from *West Wind*

Thermals are like fingerprints. They are all different but at the same time have sufficient common features to be all in the same class of events. Thus if we draw the structure of one thermal then it will be unique. However there will be sufficient common features to say that most other thermals will be similar.

The structure of the thermal illustrated was established by simultaneously flying a number of aircraft equipped with recording instruments through the thermal. As well as up and down current strengths, temperature and humidity measurements were taken.

The thermal shown had one core. Other thermals observed in the same way were found to have many. Some had as many as twelve! The form was slightly asymmetric. This was attributed to the effects of wind. Stronger winds tended to move the weaker lift surrounding the core more than the core; that is, the core will shift to the upwind side of the thermal as a whole.

The superadiabatic layer near the ground is usually 100 to 300 feet high. On very hot days this may extend up to 600 or 800 feet. This area is very chaotic. In this layer the thermal is made of gusts and is not organized into a steady stream which it becomes higher up.

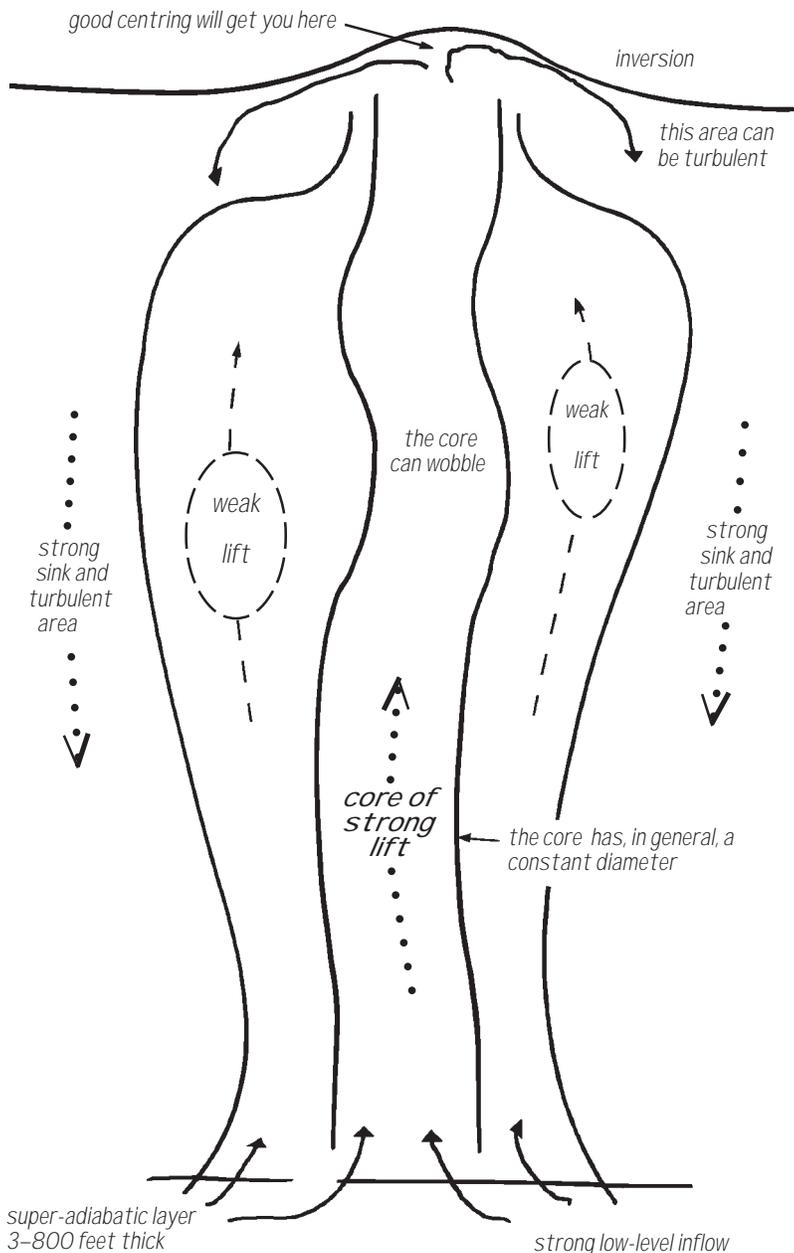
At low heights (below 1000 feet), there is a strong inflow of air which will drift the sailplane into the thermal. Very little centring action is needed by the pilot and the glider will be drawn into the strong core. Once the sailplane gets into the lift for more than a quarter of the turn, simply keep it turning and let the inflow help you into the thermal core.

The core will have the same strength all the way up and generally will be of constant diameter. Average diameters are 500 to 600 metres. A bank angle of 40° is necessary to keep the sailplane in the core. 45° may be needed for 15m sailplanes and 50° for Open class. With adequate bank and correct position, the circle can be completely inside the core.

A sailplane circling at a 40° bank angle and 46 knots will make a turn of 136 metres diameter. 45° is needed to achieve the same diameter at 51 knots. If the speed is increased due to a higher wing loading then the bank angle must be increased to achieve the same size circle. The thermal tends to weaken at all levels at the same time. That is, if there are many sailplanes in the thermal, they will all leave about the same time regardless of height.

The sink area around the thermal at the levels where it is organized is quite strong.

Sinking air spreading out from the top spreads over a large area and is relatively weak. ⇒ p17



club news

WINNIPEG GLIDING CLUB

Weather — our entire life and lifestyle is dictated to by the powers of the atmosphere and the ever-changing environment. As glider pilots we are constantly aware of the skies that surround us, both while flying and even while at work. Not a day goes by that I don't look up and wonder what is happening in the lower atmosphere and am always amazed that the best soaring days seem to arrive on Mondays!

Such is the life of a soaring pilot.

With the fall of 1997 came a promise from the weather guessers that the weather phenomenon known as El Niño would bring severe fluctuations in the our climate. The prairies, it was predicted, would see a mild start to the winter and above normal temperatures in January and February. Imagine Winnipeg at Christmas with grass showing on about 75% of the lawns, temperatures around zero, and clear sunny days. El Niño did not disappoint. In fact, due to the mild conditions, the Winnipeg Gliding Club had a flying day on November 29th, the latest ever. Rumours were going around that we would even be flying on January 1st, a long time fantasy of our Chief Flying Instructor. However, even the best guesses go astray and, on New Year's Day we had cold and strong winds shutting us down.

However, the mild weather returned for an encore in late January and has continued through as this is being written in late February. Excitement is building for an earlier than ever start in March. El Niño has been kind to us flatlanders! But even though we are not flying quite yet, we are very busy with several projects underway.

Planning has begun for the 1998 Canadian National Soaring Contest to be held on July 5-16 at Brandon Airport. Brandon is 200 kilometres west of Winnipeg, is the second largest city in the province, and the soaring should prove to be the best ever, given the dry conditions that should prevail through the spring and early summer. We have the full co-operation of the airport management and the Brandon Flying Club, and will be using the 6500 foot paved runway, staging at the centre portion of an 150 foot wide inactive runway. Two scheduled flights arrive and depart daily, both out of soaring prime time. A full registration package will be available by mid-March and will be sent out to all competitive pilots.

Another project reaching an end is the final phase of receiving permission from Transport Canada to extend the safe life of our Lark, from 20 years to 35 years. A new service bulletin from the factory in Romania requires an inspection and condition report and, based on this condition, a block

of time up to 35 years may be granted. We are hopeful for the Lark to be returned to full flying status mid-summer. For any other Lark owners who may need clarification on this bulletin, please call me for details. Our ground school is off and running with several new students and several from last year are also in attendance. A spin off from the promotion of our ground school and open house is that the local public access TV station will to do a 7 minute spot on us for their human interest program, *Plugged In*. What more could you ask for?

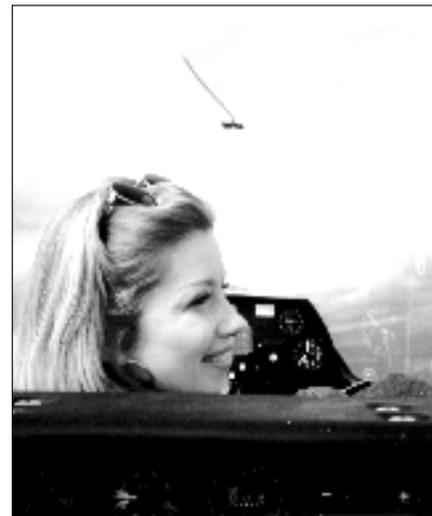
We expect that 1998 will be another great year for our club. We have a very enthusiastic membership, a strong core of devoted Executive Directors to administer the club's day to day operations and a fantastic area in which to soar. If anyone is passing through on holidays, make the Winnipeg Gliding Club and Starbuck a must see on your travels.

Mike Maskell

"One of the main rewards of cross-country soaring is succeeding in the face of uncertainty.

When the outcome of the undertaking is in doubt to the very end, the reward is the sweetest."

Richard Carr



FLASHBACK – 35 YEARS AGO

Two Canadians taking part in the World Gliding Championships at Junin, Argentina, were stranded on the open pampas separately during the preliminary trials.

Charles Yeates of Brantford landed his glider in a field 111 miles from the base and failed to communicate with the only person he met — a lone gaucho (cowboy). Yeates, 35, had a card in Spanish identifying himself but the gaucho could not read, so Yeates had to spend the night in a farmhouse until he was picked up the next day.

David Webb, 31, of Toronto was on a 185-mile flight to Tandil but landed 45 miles short of his target. The nearest phone was 10 miles away. He turned up at the base 22 hours later and declared the trip would have been faster by horse.

the Brantford *Expositor*, 12 February 98.

Experienced Instructor / Winch Ops HOPE GLIDING CENTRE, Ltd.

The *Hope Gliding Centre* is currently developing a professional gliding centre at Hope, British Columbia, 90 miles east of Vancouver. The site features a fine mountain setting, clear airspace, a large grass airfield and excellent high volume highway access. HGC has secured significant 20 year rights on this lightly-used public airfield, and the host government has clearly signalled its support for intensive gliding — including winch launching — on the site.

HGC seeks applications from suitably qualified persons for the post of General Manager and CFI. Applicants should hold a Canadian CPL or PPL, plus Glider Instructor Rating (with SAC Class 1 accreditation). Substantial experience in a professional gliding setting is required, including winch launching, both as flight instructor and winch operator. A Full Category Instructor Rating from the British Gliding Association or similar, where winch launching is featured, would be an important asset.

Applicants will be subject to clear references. Interested persons are encouraged to write/fax their details to HGC.

*Hope Gliding Centre Ltd., 3247 West 3rd Avenue, Vancouver, Canada V6K 1N5
Tel (604) 230-0671; Fax (604) 731-6175*

training & safety

ADVISORY FROM THE FLIGHT TRAINING & SAFETY COMMITTEE

Flight Training The "cannot release" signal from the glider has been changed so that *the glider first moves to the LEFT of the towplane*, rather than to the right as previously taught. The glider will then rock its wings to indicate a failure to release the towrope.

If the towplane has side by side seating, a towpilot in the left seat will not see the glider if it moves to the right. More importantly, because this situation will probably occur at release height, the towpilot in any aircraft could misinterpret a movement of the glider to the right as being the departure turn off tow, with the towpilot then commencing his descending turn to the left. This would likely result in a towplane upset.

The glider pilot should also move slightly higher on tow to ensure that when the towrope is released from the towplane, it passes underneath the glider.

The benefit of radio communication in this situation is obvious; however, radios are not foolproof either, so it is strongly recommended that all clubs practise the emergency signals on tow as part of their spring checkflight procedures. This should include not only the above change, but also the rudder wag and wave off from the towplane.

Safety Pilots are reminded that numerous incidents over the years have shown that open glider canopies can often focus the sun's rays very much like a magnifying glass, creating a potential fire hazard in the cockpit. The vertically opening canopy of the Jantar Std 2, for example, appears to be particularly susceptible.

TEACHING GLIDING SOME VIEWS ON INSTRUCTING

Richard Pincus
from Aug 95 *Australian Gliding*

Courses are always better! In my view, week long courses by semi-professional or professional instructors are so much better than the weekend club method, that all *ab initio* pilots should be strongly advised to take such a course. Failing that, within each club training should in my view always be in concentrated bursts (courses) with one instructor (mainly) taking one pupil right through the course. However, there is still a lot of training to be done by us amateur instructors, often on a once a month basis. Some comments on how this is best tackled may be of interest. I hasten to say that these ideas are not very original, being taught to me mostly by contact with other instruc-

tors, by attendance at courses, and by the most fruitful source of all – pupil pilots and pupil instructors. I emphasize that I take full responsibility for any errors!

The ancient Greeks had a way. I find that the best instructional method is the Socratic method. This involves questioning the pupil and trying to find out where the pupil's understanding is at, decide which of the many points involved should be taught beyond that, then trying to lead the pupil, again by questioning, to the answers.

This requires the instructor to spend far more time asking questions than talking! It requires *more listening*, and you cover the ground much slower. But the pupil actually learns more per hour.

This is especially useful for correctional learning, where the wrong idea has to be discovered and dispelled. It is not as applicable if you intend, for example, to give a full circuit briefing or outlanding briefing. But, these kinds of briefings are far better done by getting the pupil to read a chapter in a book or watch a video because the writer has probably spent far more time and effort in providing *all* the right information, and *only* right information, and usually putting the information in easily-read, logically organized, bites.

This doesn't mean no more briefings. On the contrary, it is essential to brief the pupil *briefly* before each flight, as per the Instructors' Handbook. It is highly desirable to debrief the pupil at leisure after the flight (or, if at a course, before or after flying for the day). *No theory of flight in flight!*

A glider is the worst classroom in the world for some people, and only advanced pilots can devote enough spare brain for any theory training to be done during the flight. The flight is to demonstrate, allow the pupil to practise, and assess the performance.

On both the brief and the debrief, it is better to spend two minutes to cover two points than 20 minutes covering 50 points *unless* you use notes or a video.

Learning methods differ with different people. Many mainly learn by example and unconscious monitoring of inputs. All must learn by theory to some extent:

- safe pilotage requires specific knowledge,
- error correction may require exploration of the nature of the problem, then practical exercises.

Questions to always have in mind:

- what is the pilot monitoring and responding to?
- what does the pilot not know about this? (limit to two points)
- what does the pilot "know" that is wrong?

- is the pilot's lookout good enough? (the answer is always "no")

ALWAYS:

- ground brief, briefly (except for circuit briefing, outlanding briefing or similar) – demonstrate, then let them do it
- assess silently
- debrief, praise, offer corrections (limit to two)

Do not let any flight be solely an appraisal flight, except pre-solo checks or similar. In particular, all checks must have an express, agreed, teaching aim. You are allowed to disagree with the manual, but you do that at instructor meetings, not when teaching. The most common complaint against instructors has always been variation. Review one part of the manual each day. Write something useful in the pupil's log book.

COMMON INSTRUCTIONAL ERRORS

Before the flight:

- Not listening and finding out what the pupil thinks.
- Not having an aim for every flight.
- Presenting your way as *the* way of doing anything.
- Talking too much – the pupil needs time to think about the flight.

During the flight:

- Not monitoring lookout.
- Not taking over when required. Rarely, taking over when not necessary.

After the flight:

- Adding those few little extra "helpful" remarks over and above the two points.
- Answering a simple question with a long, detailed, very accurate (I hope!) answer.
- Bragging, especially at the pub. Retailing horror stories.

COMMON ERRORS IN FLYING (YOURS)

- Letting pupils see you do something other than what you preach. Try sitting in front a few times during early dual flying and be very conscious of whether the pupil would see your head constantly rotating, looking everywhere, especially in the circuit.

COMMON ERRORS IN FLYING (THEIRS)

- Failing to *look out, look out, look out*.
- Inability to fly and lack of situational awareness: lookout, where they are, weather changes, wind, and lookout. If you find such pilots, do not let them go solo. If you find them solo, put them back on dual. *Never* let them take passengers. Some people will never pass through this stage. They should be told.
- Monitoring the wrong input – eg. ASI instead of nose position (and noise and feel) for speed control (except in the circuit); staring at the vario instead of looking out, using the string, nose position, rate of turn, and *lookout* while thermalling; monitoring where the nose is pointed instead of where glider is actually going, especially on downwind.
- Failure to monitor descent rate on final.

Your spring wake-up call!



Terry Southwood

This sad Blanik is the result of a failed launch. No — it is more accurate to say it is the result of a failure to *anticipate* a failed launch. Tom Knauff lists "premature termination of the tow" as one of the three most likely things which put a pilot at risk. The question you must ask yourself after strapping in is not, "What would I do if I ever have a launch failure" but, "What will I do *when* I have a launch failure." Because it will happen to you sooner or later, that's a guarantee! When the event occurs, remember the first rule: *fly the airplane*. Know what your field options and turn direction will be at the critical heights given the wind before the start of every launch. You won't have time to make up your mind at 200 feet.

- Failure to look for and establish an overshoot before opening the dive brakes.
- Control inputs at wrong rate: too fast on aileron input in turns; not waiting for glider to respond before putting in more input; too slow and too little in flare.
- Wrong concept (hardest to detect and deal with), eg. thinks the glider has to be flown on gently rather than letting it land only when you cannot stop it because it has finished flying.
- Cannot fly straight. This is harder than flying a banked turn, since in a turn the small changes of bank go unnoticed. In straight and level flight the horizon is a powerful clue to the tiniest bank change: the pilot makes quick corrections with the aileron only: the nose swings due to aileron drag: there is a secondary wing drop, causing the nose to go the other way: there is further aileron input — the result is chaos, or an unintended waltz!
- Cannot fly a coordinated turn — usually correctable by *slowing down* control inputs, with a conscious rudder push. Also, are they monitoring the nose (rolling it around the point) and then the yaw string early in the turn? Try more rolling round a point and more practise in rudder use. This can be usefully done while on aerotow, where the tug gives an excellent visual reference. Or try making sure all practise turns are 360 degree turns, as the book suggests.
- Cannot do a steep turn — make sure they speed up first and retrim. Use the same technique and amount of control input as for any turn, but hold the input longer so

as to get a steeper angle of bank. Pull back to prevent the nose dropping. *The rudder and ailerons and elevator act just the same in a steep turn as in a shallow one.*

- Cannot fly accurate speeds in the circuit. Here they should be monitoring the ASI, but they should be preventing any *change* of nose position, *especially in turns.*
- Cannot land consistently well. This is usually due to lack of a stabilized approach. If not, are they flaring too late and too quickly, or not looking down the field? A good cure is to put away a lot of dive brake before or in the flare. Speed control and height judgement always improve if the ASI is covered up. ❖

SAC travel insurance. Don't fly in the USA without proper medical insurance. Many travel health insurance policies don't cover injuries sustained while gliding. If you want SAC travel insurance, contact "Health Advantage" at 1-800-216-3588 and mention SAC. There are no forms to fill.

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hangar flying

THE OPTIMUM CG POSITION

Wilhelm Dirks

In the "classic" theory of lift, the wings generate the lift and the tailplane generates the stability. In general curved wing profiles, the aerodynamic moment generated by the wing tries to pitch the nose down and this has to be countered by the tailplane. To do this the tailplane has to produce a downward force dependent on the sailplane's airspeed and centre of gravity (cg). The higher the airspeed and the more forward the cg, the higher is the downward force produced — in a rearward cg the tailplane can even produce lift.

It is well known that contest pilots trim their sailplanes to the most rearward permissible position. In theory this improves performance, especially in circling flight, since one does not have to "pull" as much. At the "German Soaring Symposium" in Stuttgart, in 1997, a paper was presented and discussed which showed this in graphic detail for several sailplane types.

In the first phase it was researched just how much the performance was affected by forward or rearward cg positions. The permissible cg values are determined by the designer. The forward cg limit determines the size of the tailplane and elevator, i.e. that there is sufficient force available in the elevator to make circling flight possible. The aft cg limit is set to give the airplane satisfactory stability and can recover from a spin.

Generally the calculations for all types of sailplanes showed a performance difference of 1.5 to 2 points between the foremost and rearward cg positions. That is quite a bit! Is it therefore correct to fly at the rearward cg? Let's think about it.

Performance The L/D of a sailplane is calculated out of the ratio of total lift to total drag. If the tailplane produces downward force the wings have to generate more lift, and that involves more induced drag and profile drag. That reduces the L/D. In spite of this, the rearward cg does not necessarily produce better results. The tailplane is not designed to produce much lift. It usually has a symmetrical profile. The wing profile is designed to produce lift and is much better at this task.

In addition, the tailplane produces a disproportionate amount of induced drag because of its small aspect ratio. The optimum condition would be one in which the tailplane in slow flight produces just enough lift to compensate for the loss of lift of the wings in the fuselage area. That would minimize the induced drag of the sailplane. This condition is obtained more or less, depend-

ing on the design, by the distance from the most rearward cg position.

Flight characteristics and safety

At the aft cg condition, stability is minimal, especially in the roll axis, and the sailplane must be "flown" at all times to avoid air speed variations — usually when thermalling. Depending on experience and skill, the pilot tires faster and his concentration diminishes, so that the theoretical advantage is greatly reduced.

At the rearmost cg position, the sailplane will enter a spin much easier at less than the minimum airspeed than at forward cg, where spinning in most instances is not even possible. This can have deadly results, especially in mountainous terrain. Different sailplanes react differently, but the tendency is clear. Especially the first point should induce even the hottest contest pilot not to go to the rearmost cg position.

Results The cg location definitely influences the flight performance and efficiency. A position in the forward half of the cg envelope produces negative results and should be avoided. A good compromise is a cg position about 15–30 % forward of the aftmost position. Flying with the cg at the rearmost position is endangering your life. Check your cg and do a weight & balance of your sailplane, and weigh yourself. ❖

translated by Al Schreiter

HI-TECH MATERIAL USED IN OLD GLIDERS

If someone sneers at a wooden sailplane, remind them that it is made of a unidirectional reinforced laminated composite material consisting of micro-tubular fibres embedded in a long chain polymer matrix and having a near infinite fatigue life.

WALTER WEIR IS 1998 USA SENIORS CHAMP

Walter Weir, SAC's badge chairman and annual winter snowbird in Florida, won the North American soaring competition season opener at the USA Senior Soaring Championship at Seminole Lake Gliderport, 9–15 March. This contest is open to age 55+ pilots. It has been growing rapidly in stature and entries in the past few years, and the field contained such top US competitors as Striedieck, Mozer, Moffat, and Jurado, among others.

In four flying days Walter was consistently good and won the first three with "2W", his ASW-20B, for a total of 3523 points, beating Striedieck (3398), and Gimmey (3317).

Walter said, "For the first few days after the contest I could hardly get my hat on! The contest was all blue — but some days were pretty strong. Tasks were short because days are short in March — and 42 gliders take time to get started. Everything seemed to go my way. As you know, it takes a lot of luck to win three days in a row. As an indicator of things to come it was announced that next year at the Seniors contest flight records will be mandatory."

NEW AMENDMENT #2 TO "BADGE & RECORD FLYING"

As a result of the changes to the record categories approved at the AGM (the introduction of a Club category and the elimination of the feminine multiplace category), holders of the current guide must replace paragraph 17.2 with the wording below:

17.2 Record categories

The FAI recognizes both world and national records for single and multiplace gliders. For national multiplace records, both pilot and passenger must be Canadian citizens and the passenger must be at least 14 years old. Female pilots may earn records in a feminine category. To claim national handicapped "Club" category records, the glider used must have a SAC handicap value of 1.00 or greater. (A2)

17.2c add after altitude recognition value: In order to determine what distance or speed is required for a Club category record, divide the current record by your glider's handicap and then add 10 km or 2 km/h as appropriate. (A2)

An error has also been found in para 17.2a: in the second last line, change 500 to 750. On making these changes, update the amendments page, (i), to add "amendment 2 – changes to para 17.2", dated 1 Mar 98.

TORONTO AREA GROUND SCHOOL

York Soaring is hosting a Glider Pilot Ground School for beginning pilots to prepare them both for basic flight training and the Transport Canada exam. The course starts either 7 April or 8 April at the University of Toronto's Erindale Campus. The eight session Glider Pilot Ground School will be held from 7:30–10:30 pm on the evening which is convenient for most students. The course meets Transport Canada's requirement for 15 hours of ground school and to prepare the student to write the Glider Pilot examination. However, other aspects of soaring of a more general nature will be covered as well. The material will be presented in a lecture format supported by videos.

For registration information or if you have any questions on the course itself, please contact Ulf Boehlau days: (416) 410-3883 ulf@problem.tantech.com & eves: (905) 884-3166 cm855@torfree.net

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- ATR720C** Same as above with LCD display and 10 channel memory. \$1895
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- LX-4000E** Flash-RAM stand-alone final glide computer or connects to any GPS (with NMEA output) or connects to the new LX-20B flight recorder for a completely integrated and FAI approved system. \$2595
- LX-5000** The ultimate GPS/final glide computer system with large graphic display, FAI flight recorder, and moving map with air-space and task displays. \$4995
- DX 50** The newest GPS flight data computer/recorder, only 2 LCDs. \$3495

Thermal structure from page 12

There is a wind shear and turbulence in the top section near the inversion layer.

Temperature measurements indicate that by half the height of the thermal the temperature has equalized to that of the outside air. That is, theoretically the thermal should stop!

It does not do so because the mass of moving air has considerable inertia. A thermal column 200 metres across going to 6500 feet will contain over 80,000 tons of moving air! Such a mass cannot stop or change direction quickly. We can conclude from this that the strength of the thermal is more closely related to the height that it goes to rather than other possible factors. The table of thermal strength compiled by Mike Hancy in 1973 based on likely height and temperature has shown a good correlation with results.

The cross-section of the thermal indicates that the sailplane will pass through two distinct areas of turbulence before encountering the core. The first between the more or less neutral air and the strong sink surrounding the thermal should alert the pilot that a thermal is near. The speed director will indicate to fly faster in this sink. The feel of the sailplane is very important to the pilot

in this situation. If it feels appropriate the pilot should ignore the speed director.

As the sink area is comparatively narrow by the time the sailplane has accelerated, it will have passed through the sink and the second area of turbulence and into the weak lift surrounding the core.

Horizontal gusts in this area may also complicate the indications showing lift or sink that isn't there! A gust filter in your vario system will help keep it honest. Once in this area it is advantageous to be at good speed — about 5 to 10 knots faster than the usual circling speed (for most sailplanes 55 to 65 knots depending on their wing loading). This allows good aileron response to roll into a turn the moment a decision is made. If the sailplane is not slowed to this speed, then many good thermals will be missed altogether, as the sailplane will have passed through entirely before any good indication shows on the vario.

It needs practise to develop the skill and anticipation necessary. A good, well set up speed director on medium response should have indicated to slow the sailplane to these speeds. It is necessary to respond to speed director 'up' indications much faster than 'down' indications. The feel of the sailplane on coming into the weak lift area should be the best guide to there being a likely core sufficiently close to catch.

1998 SAC Sailplane Handicaps

Below is a summary of the full SAC handicap list. This information is used for the Sports class contest scoring, Club category records, and SAC trophy flights. SAC has adopted the USA Sports class handicaps developed by Carl Herold. Updates will appear on SAC website. For water ballast use, reduce handicap by 0.02. (Use of water ballast will not disallow 1.00 or 1.01 gliders from Club category record attempts.)

1-23, 15m	1.26	DG-200/202	0.97	LS-4	0.97
1-26	1.52	DG-200 (17)	0.96	LS-6	0.94
1-34	1.31	DG-300	0.97	Mini-Nimbus	0.98
1-35	1.01	DG-400	0.95	Monerai (12)	1.33
1-36 Sprite	1.24	Discus	0.96	Monerai (12.8)	1.31
2-32	1.11	Duster	1.35	Mosquito	0.98
Astir, Speed	0.98	Genesis 2	0.95	Nimbus 2	0.85
Astir CS	1.00	Grob 102	1.13	Nimbus 3 (22.9)	0.82
ASK-13	1.40	Grob 103	1.15	Phoebus A/B	1.05
ASW-12	0.90	Hornet C	1.00	Phoebus C	1.00
ASW-15	1.00	HP-11/11A	1.07	PIK-20/20E	0.98
ASW-19	0.98	HP-14	1.00	Pilatus B4	1.24
ASW-20 20FP	0.94	HP-16	1.05	Pioneer II	1.60
ASW-20 (16.6)	0.93	HP-18	1.05	Pirat	1.07
ASW-24	0.96	HP-18 mod airfoil	1.00e	Puchacz	1.20
Austria Std	1.24	Ka6CR	1.26	PW-5	1.24
Austria SH-1	1.09	Ka6E	1.20	RHJ-8	1.06
Austria SHK	1.05	K7	1.44	RS-15	1.05
Bergfalke II, III	1.31	K8	1.46	Skylark 3	1.26
BG-12	1.28	K13	1.42	Skylark 4	1.22
Blanik L-13/ L-23	1.40	Krosno	1.30	SZD-51 Junior	0.97
Blanik L-23 (17.8)	1.38	Jantar Std	1.00	SZD-55	0.96
Blanik L-33 Solo	1.22	Lark IS29D2	0.98	SZD-59 Std	0.95
Cherokee II	1.50	Lark IS28B2	1.08	Tern	1.28
Cirrus Open	0.98	Libelle, Club	1.11	Ventus A/B/C	0.94
Cirrus 75	0.98	Libelle H301	0.98	Ventus (16.6)	0.93
Cirrus Standard	1.00	Libelle 201, Std	1.03	Ventus (17.6/18)	0.92
Dart 17	1.14	LS-1	1.00	VES-1	1.05
DG-100	1.03	LS-3/3A	0.95	e - estimated	

While the thermal core is substantially vertical, many factors will cause it to snake about with height. This is similar to the wobbling of a tethered balloon. Wind shears may even break the thermal into two. Generally a strong core will punch straight through most wind shears. Because of this snaking, it is necessary to continually work to keep the sailplane in the best part of the core. Pilots who do that well consistently hold strong lift right up into the top neck of the thermal. They may even get lifted into a thermal dome well above the general inversion layer. From this position an excellent performance can be obtained until the sailplane sinks into the thermal layer again.

If, when you are near the top of the core, the lift becomes irregular, but still with very strong gusts, it is better to leave it than persist. By staying on you will find that the average becomes only half of what it previously was and thus you have been working a thermal that you would not have stopped for at some lower height! Much time (and speed) can be lost in this way.

It is best to try to stay above half the convection height. Thermals are well established by that level and easiest to work. Also, at height there is no anxiety about landing out, so full concentration can be applied to making the best decisions, flying efficiently and working thermals effectively. Set the speed director to that which you are happy to take when low, that is, 2000 feet. But take a good thermal at any height — it is a mistake to ignore thermals until you are at the lower part of your height band! ❖

SAC news

CORLEY SCHOLARSHIP – CALL FOR CANDIDATES

Applications for the Corley Scholarship should be sent directly to Art Grant of the Winnipeg Gliding Club. The application forms can be obtained either from the SAC office or Art, and eventually will be on our website. The scholarship will have a value of \$2300 and is awarded in October.

Contact Art at agrant@techplus.com or (204) 834-2682.

GOING FOR THE "NEW" RODEN TROPHY IS AS EASY AS 1, 2, 3

Background At the 1997 fall SAC Board of Directors' Meeting it was decided to change the criteria used to award the Roden trophy. This decision was taken as part of a general review of the various SAC committees and their mandates.

Up to now the Roden trophy has been awarded to the club which makes the best use of its equipment. This has been determined through the use of a formula, which draws on statistical material supplied to the SAC Statistician. The SAC Statistician informed the Board that very few clubs (around 8) submit statistics.

The Board decided that a new formula needed to be devised to make competition for the trophy meaningful. The point was made that, whatever criteria were used, collecting the information should impose a minimal burden on the clubs and that determining the recipient should be administratively straightforward. The idea was to encourage maximum participation in the competition for the trophy, using a formula that would be transparent and clearly understood. It was also noted that the awards of FAI badges, particularly the lower level

badges, had been faltering and that perhaps there was some way of linking the Roden trophy to the number of badges awarded.

Criteria

The formula is a weighted sum of the badges achieved by SAC members, divided by the number of flying members in a club. Higher level badges receive higher weights. Thus, for any club, if:

- X = # A, B & C badges awarded
- Y = # Bronze and Silver C badges awarded
- Z = # Gold and Diamond badges awarded and records set
- M = # flying members
- R = # Roden points

then: $R = 100(X+2Y+3Z)/M$

For any given year the club with the most Roden points would be the winner of the trophy that year.

Procedures

The data to determine the winner are at the club level and with the FAI Badge chairman. To enable Walter Weir to do this, clubs would have to submit to him annually the number of the various types of badges actually awarded at the club level, ie. A, B and Bronze. A side benefit is that it would help reduce our multi-century supply of some of these badges! The SAC office will provide clubs with a form to be completed and signed by a club official, then send it to Walter who will determine the winner. The form will also be made available on the SAC website.

Jim McCollum

SPECIAL CERTIFICATE OF AIRWORTHINESS for OWNER-MAINTAINED GLIDERS

An "owner-maintenance" aircraft category will allow certain certified aircraft, including most production gliders, to be maintained and modified in a manner similar to amateur-built aircraft.

The certificate will be restricted to aircraft which fly for recreational purposes only and

Transport Canada will maintain a list of eligible aircraft types. Owners will be able to request a transfer to this category of certificate through a TC District Office. Permission to fly an owner-maintenance aircraft in the United States would be obtained in the same way as for amateur-built aircraft.

Recertifying an aircraft could be expensive, although in the case of a glider probably will not be prohibitive. It is not clear whether the resale prospects of aircraft would be affected by virtue of having a special certificate of airworthiness. For example, currently there is no counterpart category in the United States. The "special certificate" option is expected to be in place by the fall of 1998.

SAC Technical Committee

 **READ THIS NOW!**

SAC DOCUMENTS AVAILABLE ON NEW WEBSITE

SAC, compliments of the hard work of several people, now has an expanded website at www.sac.ca. Soon, all SAC forms and documents of interest to members will be accessible from this site. Forms will be stored in ".pdf" format, which is becoming the standard for web-readable documents, and will require "Acrobat Reader" to open. This application is free and can be downloaded from www.adobe.com

This will bring a great savings in time and cost to get relevant SAC documents (the online *Badge and Record Flying* guide will be free, more available and maybe more used). It will also ensure that the forms used are current since stocks of them don't have to be held by clubs or at the SAC office.

This season will see the early need for new badge application and record forms, the handicap list, etc. for a start. Club **CFIs** or **Senior Official Observers** are urged to make sure someone in the club with e-mail has "Reader" and will print out forms for local copying and use by pilots. Do this today!

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1997 SAC SEEDING LIST

	95	96	97	total
Std Class				
1 Stieber, J	100.0	100.0	98.9	99.2
2 Hollestelle, E	98.1	93.5	94.7	95.7
3 Carpenter, J		89.70	95.1	93.5
4 Kirby, K	50.5	65.1	77.6	73.8
5 Spence, I			100.0	70.0
6 Longhurst, R	45.5	54.6	71.1	66.1
7 Bantin, C			84.4	59.1
8 Gough, A			77.1	54.0
9 Thompson, P			76.4	53.5
10 Meyer, K			67.9	47.5

15m Class

1 Weir, W	14.7	99.8	100.0	99.9
2 Werneburg, U	100.0		86.8	90.8
3 Springford, D	79.5	70.2	94.4	89.9
4 Pözl, H	66.1		97.6	88.1
5 Eaves, C	73.1		92.4	86.6
6 Pepin, A	79.5		88.4	85.7
7 Krueger, W		92.7	77.3	81.9
8 Masak, P			83.0	58.1
9 Juergensen, H			62.4	43.7
10 Bonnière, N	93.3	100.0		30.0

Sports Class

1 Devries, C	90.2		84.5	86.2
2 Wood, A	100.0		67.4	77.2
3 Zieba, A			100.0	70.0
4 Yeates, C		42.8	74.5	65.0
5 Berg, H	68.7		56.9	60.4
6 Rumpf, U			65.7	46.0
7 Wark, T			61.3	42.9
8 Coulson, T	16.0	27.3	34.8	32.6
9 Stewart, D	30.8		33.1	32.4
10 Cavicchioli, G			45.4	31.8

The score is calculated from 70% of the most recent contest result and 30% of any of the previous two.



Coming Events

Columbia Valley Soaring Camp 30 May - 7 June, Golden and/or Invermere, BC. Please confirm attendance (even if part time only) in advance so towplane needs can be determined. Event coordinator is Mike Glatiotis, (403) 282-6121 mglatiot@cadvision.com

Western Instructors Course 14-20 June, Cu Nim Gliding Club, Black Diamond, AB. Registration \$150, aerotowing L-13 Blaniks. Camping on the airfield, and showers/motels/restaurants available locally. Contact Terry Southwood at (403) 255-4667.

Eastern Instructors Course 21-27 June, Gati-neau Gliding Club. Registration forms are available from the SAC office, or from your club CFI. \$150 includes course materials. Campground at club, with cooking facilities, showers, and pool. There is also a B & B nearby.

Cowley Summer Camp 26 Jul - 4 Aug, Come to Canada's biggest soaring holiday. Tony Burton (403) 625-4563 free-flt@agt.net

Ontario & Québec combined Provincials 4-7 Sept, AVV Champlain, Saint Dominique, QC.

Low final glides driven by contest rules?

from page 4

final glide start? How much reserve did the pilot have when he started, both with and without the headwind? Do we know from the instrument settings whether he knew about the headwind or whether he was surprised by it? Did he fly through any lift/sink on the way? How far before the crash did he fall below the glide slope? (ie. knowing what his GPS was saying, when would he have given up and landed? Or would you have pressed on further?) Was he on the glide slope down to the last 300 feet? What was the situation as viewed from about 1/4 mile downwind of the final field, where the decision to go straight in to the field or go on to try to make it home must have been made. Were there other fields either closer to the airport or farther away?

You can see where I am heading. Did this pilot start a close, but very commonly attempted final glide 10-20 miles out, and was he close to making it the whole way? Was his only mistake deciding to land 10 seconds later than you or I would, with the benefit of hindsight?

There but for the grace of God go the rest of us. I've been watching these 2-mile-out landings for years, and I still can't find a good policy which *I know I will follow* to save myself from falling into this coffin corner, and I'm a very cautious recreational pilot. (I view it as caution to try to foresee when I'm likely to fall into temptation.)

The most obvious protection is not to make close final glides. Take that last thermal a bit higher or fly the glide at a little less than the MacCready speed. Add a good reserve, 500 feet at least, and burn that off in the last few miles. Fine, but it's not always possible. Even the best planned final glide can run into sink or headwind, leaving you 10 miles out at 40:1 plus 100 feet. Or the day can die and that last little thermal gives out leaving you 40:1 plus 100 feet. Or 40:1 less 100 feet. There's them that's been there and them that's gonna. What do you do next?

You can tell yourself (or your wife) that you'll follow the usual altitude limits. But at 40:1, the 1500-2000 foot height for stopping progress on course, going towards good fields, looking them over, trying to climb in any scrap of lift, is 10-13 nautical miles out. We can advocate stopping in this situation, but none of us will. With 10 miles out, 1500 feet up, 40:1 on the GPS, and no sign of a good thermal nearby, most of us will point it towards the airfield and go. As evidenced by the number of 2-mile-out landings, most of us do, including the top pilots.

I leave it as a question. What rules or advice can we possibly give ourselves to keep from getting into this mess? And I mean rules that pilots will credibly follow?

The other possibility is to recognize that 2-mile-out landings are a hazard with contests as they are currently structured, a hazard that will not be stopped by harangu-

ing pilots to follow standard safety rules, or new ones we dream up. What can we do about the way contests are run to stop the problem? What we really want is to get pilots 10 miles out to stop and look for lift or land rather than try to do a close glide that may work, or may lead to the 2-mile-out landing.

The natural solution is a 500 or 1000 foot finish gate. Finish below the gate and you get distance points but not speed points. With such a gate, a pilot 10-20 miles out with 40:1 on the field is 1000 feet too low to get speed points. He has to stop and look for lift. If he can't find any, he loses almost no points by stopping in a good field 5-10 miles out, rather than pushing on to try to land at the airport itself. There would be dramatically less temptation to press on when under 1000 feet.

Why do pilots press on to unacceptable risks in contests, but not when flying at home? Because the point penalty for landing out is disastrous. If you can just make that last 2 miles you get speed points. Otherwise, it may be "goodbye contest". If the *only* incentive was the convenience of landing at home, then 2-mile-out landings should drop dramatically.

The problem with a finish gate is that someone has to monitor it. The same mechanism that gauges start heights can be used. When we move to GPS verification in a few years, this will be easy, since the GPS logs include altitude. In fact, with GPS, you can do something less drastic. 1000 feet and above get full speed points, and you lose (say) 20 points per 100 feet below that. Food for thought.

I ask that you not identify me by name. Usually, I disapprove of gutless anonymity, but I already have a reputation as a loudmouth newcomer who should shut up and learn the ropes before he talks too much, and I don't want to make that reputation worse!

Loudmouth

Dear Loudmouth,

I remember a day during a fun contest where I could have won a day that I dearly wanted to win. I was three miles out, with some orchards between me and the airport. I had more distance for the day than anybody. But there was a field, freshly levelled, with a road nearby. I looked at the field, I looked at the orchards, and I looked in the direction of the airport. I swallowed hard and pulled the spoilers. But, boy, was I tempted to go for it! Anyway, there might be something here for competition safety. Do contest rules encourage this kind of behaviour? Could the point allocation be encouraging this situation?

This might be something for the Competition committee to look into to enhance contest safety.

George Thelen ✦

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

A NEW RECORD CATEGORY FOR 1998

This year offers a unique opportunity to earn a Canadian record. SAC has established a new "Club" single-place *handicapped* record category. This new category is designed specifically for mid-performance gliders having a SAC handicap of 1.00 or greater (see list on page 17). Have a look at the table below. Currently it is a clean column — go for it when planning your next decent cross-country! The claims documentation is identical to the established record classes. Distance claims require FAI Record Form B and speed claims require Form C, (*not* the badge flight forms). Forms will be on the SAC website — see page 18 for details).

Because there might be a lot of record flying activity this year, it may for the first time be prudent for you to check on the status of established records and pending claims before finalizing your planned flight — the distance or speed you think you need may have been bettered the previous weekend! If you already have a record flight completed, submit a claim — record claims are not necessarily records established. Record claims will be posted on the SAC website as they come in. Later in the season, will you attempt to surpass an existing Club category record? To determine the performance you

must achieve, divide the posted record by your sailplane's handicap before adding the normal increment of 10 km or 2 km/h for a distance or speed record.

The secret to a successful record attempt is being prepared before the day of the flight plus some good (not necessarily "great") weather. Admittedly, some of the documentation required is sometimes a bit hard to swallow, but taken in small bites it's not so bad. The SAC *Badge & Record Flying, section 17* guide provides the details. If you want to go into the finer points, get a copy of the FAI Sporting Code, Section 3 (see *free flight 6/97, p20* for the FAI website where it can be read or downloaded). The second amendment to *Badge & Record Flying* is included in *free flight 6/97* also.

A dummy run is very helpful to straighten out the details before a record attempt. A short flight with some turnpoint photography practise helps. Prepare for the flight when you are not rushed. When the flight is done, complete the FAI record forms, with the additional step of multiplying the achieved distance/speed by your glider's handicap. Have a newly-resurrected OO check things over.

When you're helping the OO with the documentation, do not forget to include maps. Coverage of the whole area of the flight is needed, and establish the turnpoint location within 0.5 kilometre. If you are going to use a barograph or flight recorder information for other than "uninterrupted flight" verification, check the calibration date (within one year or less than 30 days following). Badge or record attempts usually result in an interesting day — successful or not.

Nationals 98 will be held in Brandon, Manitoba. Why not combine record flying and competing in the Nationals?

CURRENT CANADIAN RECORDS (as of 1 Apr 98)

C indicates a record by a Canadian citizen originating outside the country.
 T indicates the corresponding record set within Canada. (These are noted only when a greater "C" record exists.)

RECORD TYPE	OPEN	CLUB	MULTIPLACE (OPEN)	FEMININE
DISTANCE (km)				
3.2.5.1 Straight distance	Marsden/Apps 1093 1984		C Zwarych (R Adam) 495 1986	U Wiese 607.0 1986
3.2.5.2 Distance to goal	Marsden/Apps 707 1984		Zwarych (McColeman) 310 T 1984	A Williams 305.0 C 1975
3.2.5.3 Out & return	T Burton 652.3 T 1993 W Weir 1032.1 C 1993		Proudfoot (G Fitzhugh) 304 C 1981	U Wiese 328.0 1984
3.2.5.4 Triangle distance	H Werneburg 803.7 T 1982 P Masak 1007.0 C 1987	all unclaimed	D Marsden (E Dumas) 421.5 1979	J Midwinter 317.6 1988
3.2.5.5 3 TP distance	T Burton 542.3 T 1997 B Milner 1394.0 C 1993		John Firth (D Webber) 510.4 T 1986 C Yeates (K Yeates) 510.2 C 1989	S Eaves 508.7 1995
3.2.5.6 Free out & return	W Weir 519.4 C 1995		not claimed	not claimed
SPEED, Δ (km/h)				
3.2.5.7 100 km	K Bennett 131.1 T 1989 P Masak 141.4 C 1985		D Marsden (M Jones) 98.1 1975	A Williams 54.5 1976
not FAI 200 km	J Firth 110.6 T 1984 C Yeates 116.3 C 1994		L Bungey (T Burton) 76.0 T 1983 C Yeates (K Yeates) 79.5 C 1987	M Barritt 68.7 C 1970
3.2.5.7 300 km	K Bennett 113.1 T 1988 P Masak 148.9 C 1985		D Marsden (E Dumas) 69.9 T 1975 I Spence (J-R Faliu) 128.5 C 1991	U Wiese 55.6 1983
not FAI 400 km	J Firth 99.0 T 1987 C Yeates 119.7 C 1994		not claimed	not claimed
3.2.5.7 500 km	W Weir 105.7 T 1991 P Masak 151.2 C 1985		J Firth (D Webber) 88.8 1986	not claimed
3.2.5.7 750 km	W Weir 108.8 1982		not claimed	not claimed
3.2.5.7 1000 km	P Masak 106.5 C 1987		not claimed	not claimed
ALTITUDE (m)				
3.2.5.9 Gain of height	D Mercer 8458 1995		Shirley (Campbell) 7102 1961	D Duffy 6575 1991
3.2.5.10 Absolute altitude	B Hea 10485 T 1981 W Chmela 12449 C 1974		Shirley (Campbell) 9083 T 1961 Chmela (VanMaurik) 10390 C 1975	D Duffy 8986 T 1991 A Czervenka 9772 C 1969
SPEED, O & R (km/h)				
not FAI 300 km	H Werneburg 115.2 T 1983 W Weir 191.3 C 1989		Chmela (Rominger) 65.0 C 1976	U Wiese 59.6 1984
3.2.5.8 500 km	K Bennett 126.3 T 1992 W Weir 150.9 C 1996		not claimed	not claimed
not FAI 750 km	W Weir 145.0 C 1994		not claimed	not claimed
3.2.5.8 1000 km	W Weir 142.6 C 1993		not claimed	not claimed
SPEED, GOAL (km/h)				
not FAI 100 km	K Bennett 118.7 T 1985 W Weir 147.7 C 1992		W Chmela (R Zimm) 47.0 1971	not claimed
not FAI 200 km	K Bennett 125.9 T 1992 W Weir 143.0 C 1995		not claimed	not claimed
not FAI 300 km	W Mix 108.6 T 1966 W Weir 145.9 C 1994		Proudfoot (Fitzhugh) 70.2 C 1981	not claimed
not FAI 400 km	T Burton 81.5 1990		not claimed	not claimed
not FAI 500 km	D Marsden 97.1 1970 W Weir 138.4 C 1993		not claimed	not claimed

come **fly**



1998 national soaring championships

Brandon Manitoba

July 7 through 16

practice July 5 and 6

Brandon, home of the 1998 Nationals, where prairie thermals rise to more than 10,000 feet and El Niño promises to deliver a hot dry summer!

Brandon Airport, the contest site, is situated 5 minutes from the city centre. Brandon, with a population of 40,000, is nestled in the Assiniboine River valley two hours west of Winnipeg on the Trans-Canada Highway.

Tourist destinations less than an hour's drive from Brandon include: Riding Mountain National Park, the International Peace Gardens, Sandilands Provincial Park, and the town of Souris. In addition, the Commonwealth Air Training Plan Museum is at the Brandon Airport.

Entry fee: \$400 (includes 6 tow tickets if received before May1, otherwise 5 tickets)

Time recording data back camera required.

Flight data recorders are acceptable (software should conform to Colin Bantin scoring program — otherwise submit software program to contest committee).

15m Class and Standard Class are unhandicapped.
Sports Class handicapped according to SAC list.

For latest updates see the Nationals Homepage:
<http://www.wgc.mb.ca/nationals>
(also accessible through SAC website).

For more information contact
the Winnipeg Gliding Club:

Dave Hennigar
404 Moray Street
Winnipeg MB R3J 3A5
(204) 837-1585
dhengr@mb.sympatico.ca
or
Howard Loewen
loewenhw@mbnet.mb.ca

Contest Registration Form



Soaring Association
of Canada

PILOT NAME (please print)

HOME ADDRESS

CONTEST ADDRESS

PHONE (while on site)

INSURANCE COMPANY (PL/PD minimum \$1,000,000)

Entry fee: \$400 (includes 6 tow tickets if received before May1, otherwise 5 tickets)
make cheque payable to the Winnipeg Gliding Club

entry fee paid?

By signing below, I hereby CERTIFY that:

- the sailplane is current and will remain so throughout the event, carries all documentation required by Transport Canada, and will be flown within all the current flight limitations set by TC and the manufacturer/kit designer.
- my personal flight documentation is current and will remain so throughout the event.
- I have a currently packed and certified parachute and it will be worn on each flight,
- the sailplane will not carry any gyro instrument or other instrument permitting flight without visual reference to the ground,
- I will read the rules for the competition before making a contest flight, and understand and will follow the field operations and radio communication procedures.

PILOT EXPERIENCE — HOURS

LAST NATIONAL OR INTERNATIONAL CONTEST

LAST PROVINCIAL CONTEST & YEAR

(If no contest experience, provide approval letter from CFI that you are competent to fly cross-country in the company of other sailplanes.)

SAILPLANE TYPE

COLOUR

REGISTRATION

CONTEST NUMBER

TEAM OR INDIVIDUAL ENTRY

CREW CHIEF'S NAME

ADDRESS AND PHONE AT CONTEST

SIGNATURE OF PILOT

DATE

On registering at the contest office upon arrival, pilot(s) will be required to produce their:

- proof of insurance
- signed waiver
- CFI letter if no previous contest experience

Note: If pilot is a minor, the signature of parent or guardian must also appear on waiver.

IN CASE OF EMERGENCY, NOTIFY:

NAME

ADDRESS

TELEPHONE

Send completed form to Winnipeg Gliding Club c/o Dave Hennigar (see over).

Trading Post

Personal ads are a free service to SAC members (please give me the name of your club). \$10 per insertion for nonmembers. **Send ad to editor**, not the national office, Box 1916, Claresholm, AB T0L 0T0
tel/fax (403) 625-4563, free-flt@agt.net
Ad will run 3 times unless you renew. Please tell me if your item has been sold sooner. Maximum ad length is 6 lines and subject to some editing as necessary.

single seat

Pilatus B4, C-GXTA, 398h, very good condition, the last and strongest version of this fully aerobatic metal glider. Includes metal enclosed trailer, O2 and chute. Goal and distance Diamond ship (see *free flight* 3/97). \$21,500 obo. Paul Scott, (403) 455-7297, e-mail: scottp@gpu.srv.ualberta.ca

JANTAR Std 2, C-GGEA, 747 h, excellent condition. Alum encl trailer, Rico, G meter, EdoAir radio and chute. Asking \$26,500. Réjean Dallaire, (514) 449-6333 (W), (514) 635-3470 (H).

PIK-mod, PIK wings, homebuilt fuse, licensed as experimental K5 motorglider, flown all Diamonds, 40:1, tinted canopy, Mylar seals, O2, chute, new headset, encl metal trailer. See photo in ff 2/95. Asking \$20,000. Mike Cook (250) 427-5471/2598.

HP-18, C-GTRV, completed in '94 with initial flights only. Selling as I'm out of the country most summers. All drawings, special tooling, spares. All new instruments: CPT50 & CAV50 netto varios with speed ring, ATR 720 radio, new thin pack chute, etc. Maurice Engler (403) 246-6611.

ASW-19B, good condition, spoiler mod, slim pack chute, Komet trailer, solo assembly rig, wing wheel, Replogle baro, demand O2, G-meter, panel hinged with canopy. US\$21,000 firm. Andy Potomak, (604) 888-1353 (B), (604) 888-8747 (H), fax (604) 888-2592 (days).

td Cirrus, "Jolly Miller", 1650h, tinted canopy, bombproof trailer, excl flying cond, Ball elec vario & audio, PZL mech vario, Genave 320 radio, Plantronics mike, O2, T&B, chute. \$26,000 Mike Glatiotis (403) 282-6121 mglatiot@cadvision.com

DG202/17C, excellent cond, carbon model, Becker radio, ILEC, Winter, Hamilton compass, O2, water. US\$36,000 firm. Harry Peters (604) 856-5456 petersh@uniserve.com

PIK20Bc, C-GXWD, carbon fibre, 820h, very good condition, new paint, Ball 400 c/w netto & cruise, Edoaire 720 radio, chute, O2, gear warning. Call Lee Coates at (403) 242-3056 or Denis Bergeron at (403) 526-4560.

DG600, 1050h, 17m tips and 15m winglets. Becker radio, Westerboer computer, Bohli compass, wing wheel, covers, Cobra trailer. US\$52,000. André Pepin, (514) 923-3631 or prpepin@videotron.ca

SZD-55-1, "Crown" trailer, new spring 97, share(s) or complete package avail. Based at SOSA. Andy Gough (905) 639-5939 (H), (905) 569-2990 (W).

SZD-55-1, C-FZQE, company demo, fully instrumented with the latest or with basic instruments, ready to fly. "Crown" clamshell trailer avail. **SZD-5J-1**, C-GBYT, "Junior" new club single, instruments to suit. Trailer avail. Ed Hollestelle (519) 461-1464 pf, solairecanada@compuserve.com

Ventus B, 16.6m, low time, complete racing package, best deal on the market, priced right for quick sale, ask for detailed spec sheet. Hal Werneburg, (403) 686-6620 evenings, email: rhull@acs.ucalgary.ca and Rick Zabrodski, rzabrods@acs.ucalgary.ca (403) 271-2654 eves.

suppliers

Sunaero Aviation Glider repairs in fibreglass, wood, & metal. Jerry Vesely, Box 1928, Claresholm, AB T0L 0T0 (403) 625-3155 (B), 625-2281 (fax).

XU Aviation Chris Eaves. Glider repair in all materials. (519) 452-7999, fx (519) 452-0075, email xu-aviation@sympatico.ca

Barograph calibration, most makes and models. Walter Chmela (416) 223-6487.

VariCalc, versatile pressure transducer and micro-processor based vario and final glide calculator, Canadian designed and produced. Skytronics (613) 820-3751 or (613) 596-1024.

two seat

2-22E, no damage. Not flown for past nine years. Covered trailer. \$4000. Also ICOM hand-held radio \$400. (604) 536-2819.

miscellaneous

Two trailers. Encl metal suitable for Lark or other 2-place. Enclosed glass clamshell suitable for 15m ship. Eric Durance (519) 969-7889, Kurt Moser (eves) (519) 472-8876.

Two winches, single drum with 3500 ft of cable, V-8 powered, very low time on both engines, on single axle frames with trailer hitches, excellent economical launch vehicles. Eric Durance (519) 969-7889, Kurt Moser (eves) (519) 472-8876.

Wanted, PIK or DG motor & retraction system for motorglider project. Call Mike Cook (250) 427-2598 (W), 427-5471 (H) leave msg.

Barograph, Replogle - \$350.
Barograph, Winter (smoke trace) - \$350
GPS, Garmin 55 with stick/yoke mount - \$400
Contact André Pepin, prpepin@videotron.ca or (514) 923-3631.

Speed ring for Ventus, km/h, fits Winter vario, \$40
Vario capacity 0.45 l, two, \$25 ea
Gust filters, Rico and Cambridge, ea \$25
Saves 50%, call Gilles at (514) 377-5737

magazines

SOARING — the monthly journal of the Soaring Society of America. Subscriptions US\$43 second class. Credit cards accepted. Box E, Hobbs, NM 88241-7504. (505) 392-1177, fax (505) 392-8154. 74521.116@compuserve.com

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Length	21.9 ft	Very docile and responsive
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Weight empty	533 lb	Large, comfortable cockpit
Weight max.	783 lb	Fixed gear
Speed min.	33 kts	9000 hour design life
Speed max.	119 kts	Automatic control hookup
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Speed max.	116 kts	Robust glass strength
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Min sink	138 ft/min	Type approved in Canada

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Length	22.5 ft	Equally good in very weak and very
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Wing area	103.3 sq ft	No turbulators required
Weight empty	465 lb	Disk brake on large main wheel
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Speed max.	138 kts	Tail tank
L/D max.	44/1	Roomy and very comfortable cockpit
(at 60 kts & max t.o. wt)		Type approved in Canada
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