



free flight · vol libre



6/97
Dec/Jan

Liaison



Canadian Aviation Regulations defense early warning One of the lessons we learn in this aerospace business is that impactful changes can go unnoticed by the soaring community, buried in the mass of changes that come about at every update. We are fortunate to have a new system in place, established by Susan Snell in Winnipeg, which will sniff out any changes and allow us to take action in an appropriate fashion. This is yet another example of how members from our great association are coming forth and contributing unselfishly for the common good.

Recruiting A glance at our membership meter will tell you that we have exceeded the score of the last few years. I pray that this is a trend, not a single event. I want to take this opportunity to thank those of you who have contributed to the recruiting efforts of every club. I would like to ask you to start to think about your 1998 plans already and involve more members of your club in this undertaking. Your club and SAC both need to grow in order to be able to afford the services that will make this wonderful sport more of a learning and growing experience.

Gouging SAC is gouging 1332 of your fellow pilots We notice from time to time that some clubs knowingly do not register their new members with SAC. Regularly we notice request for badges or other service from pilots who are not SAC members. Yet they are using services that are made available by all of us. This saddens me. There are relatively few of us. We need to be represented by a strong organization in order to be heard in the chorus of participants in the Canadian aerospace scene.

The board discussed the Internet and how it can be used to serve our members better. You will see changes in the SAC homepage, probably as you read this. The current page will be updated by Bob Macpherson early in the new year. Bob, with contributions from other members across Canada, will make this new medium even more attractive and useful to all of us. We plan to have forms and other pieces of information available to you easily in real time, all the time.

The 1997 season is over for most of us. I hope that you have enjoyed it as much as I enjoyed mine. Now that the birds are stored, we have 120 days to prepare for our next season, and plan to fly our dreams. Happy New Year to you and to your families.



Cette année, à l'instar de nombreux membres de Champlain, j'ai eu le plaisir de me joindre aux membres de Montréal Soaring Council à leur camp annuel au Lac Placid. J'ai pu faire voler mon Diamant au dessus de ce lieu magnifique. Lors de mon premier séjour, nous avons eu la chance de voler dans l'onde. C'est toujours agréable de rencontrer des gens charmants qui partagent la même passion. Merci au membre de MSC pour leur accueil chaleureux. On me dit que nos amis de Québec ont connu une session magnifique à Baie Saint Paul avec beaucoup de bons vols. Aurons nous le plaisir de vous lire sous peu dans cette publication.

Le manuel SOAR sera traduit sous peu. Déjà Richard Benoit de Champlain et Jean Richard de Québec se sont portés volontaires. Si vous désirez contribuer à cette tâche colossale qui profitera à tous, veuillez communiquer avec moi.

La saison est terminée. Dans 120 jours, je ferai mes préparatifs pour partir pour le "Ridge" de Pennsylvanie. J'ose espérer que vous serez vous aussi occupé à planifier la réalisation de l'un de vos rêves. Le mien s'appelle 500 km.

À vous et vos êtres chers, mes meilleurs vœux de bonne année.

Pierre Pepin president

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the \$100 hit, tax receipts ...	4	accounting 101 and SAC membership ♦ <i>Jim McCollum</i>
definitely a learning experience	6	thrown into the deep end ♦ <i>Nick Bonnière</i>
double-crossed	9	over the Rockies and back ♦ <i>Mike Cook</i>
contest flying for fun & profit	10	the best place to learn ♦ <i>David Crail</i>
SOSA cross-country clinic	11	great weather, great success ♦ <i>Herrie ten Cate</i>
amendments to badge & record flying guidebook	20	edition 7 update ♦ <i>Tony Burton</i>

DEPARTMENTS

12	Training & Safety — all about sideslips
14	Hangar Flying — Ontario provincials, virtual temperature, keep your glider lizard-tight
16	Club News — Walter Piercy obituary, using the up in Nova Scotia, wing runner's checklist, Ontario soaring ladder, junk!, on 1 April all OOs will be shot, Lark 20 year life extension, ESS ground school
18	SAC News — Fall directors meeting summary, AGM notice
20	FAI Badges & Records — badge and record data

Cover

Dick Mamini does a low flypast of the soaring cairn on top of Centre Peak during the 25th Cowley Summer Camp in July
photo: Steve Weinhold



The \$100 hit, tax receipts & Pioneer power

Accounting 101 for the numerically challenged

Jim McCollum, SAC Executive Director

Were SAC fees close to a \$100 hit in 1997? This appears to be a common perception within the soaring community and this view has appeared in print in *free flight* (see Letters & Opinions, 2/97). I'll show here that virtually no one in SAC paid anything remotely near that amount and also that the Pioneer fund offers a tremendous opportunity for the soaring movement to increase its well-being, and that changes in the 1997 federal budget have enhanced this.

Tax receipts

SAC is registered with Revenue Canada as an amateur sports organization, enabling it to issue official receipts for income tax purposes for bona fide donations, including membership fees. By *bona fide*, I mean donations and similar contributions which are consistent with the terms of the relevant sections of the Income Tax Act and its associated regulations. These receipts result in a tax credit (page 3 of the individual federal income tax return), rather than a deduction from taxable income (page 2 of the return) and, as such, have the same value for low and high income earners, insofar as their basic federal and provincial income taxes are concerned.

A possible confusion between deductions and credits appears to be the main reason why some have the impression that one has to be in a high income tax bracket for the receipt to have much value. A tax credit of a given amount has exactly the same impact on an individual's basic federal and provincial income taxes, regardless of income level. The only exception to this is if the person has no taxable income. So, the receipts issued by SAC reduce four taxes — federal income tax and surtax, as well as provincial income tax and surtax. Surtaxes change the equation somewhat and make the receipt slightly more valuable to higher income earners, since they are more likely to be in the position of paying surtaxes.

SAC membership fees

In calculating personal income taxes, total donations (including SAC fees) of \$200 or less are eligible for a 17% federal tax credit. Once the \$200 donation threshold has been reached, the tax credit rises to 29%. With reference to the 1997 \$99 SAC adult membership fee, basic federal income taxes would be reduced by \$18.83 if one remained under the \$200 threshold, or by \$28.71 if one was already at or above it. Provincial income taxes are calculated as a percentage of the basic federal tax and average about 53%. In this example, provincial taxes would be reduced by \$8.92 or \$15.93 depending on whether one remains under the threshold, or is already at or above it. Thus, before consideration of surtaxes, the after-tax cost of a full adult membership in SAC is reduced by between \$25.75 (26%) and \$44.93 (44.4%) and *the most* that SAC can cost you is \$73.25. Intermediate results obtain if total donations, including SAC fees, fall in the \$201 to \$298 range. (The range is actually somewhat wider, since the provincial percentage varies across Canada.)

Federal and provincial surtaxes (taxes imposed on taxes) introduce an element of income sensitivity to the value of the tax receipt, boosting its value by up to an additional 8% or so. Assuming the \$200 donation level had already been reached, the after-tax cost of belonging to SAC would fall in an approximate range of \$47 to \$54. By way of comparison, the cost of belonging to the SSA is in the Cdn\$75-\$80 range, or about 60% higher.

Trust fund donations

Similar percentages apply to donations to the SAC trust funds, although in these cases a donor is more likely to already be above the \$200 threshold, so the higher percentage for the federal tax credit would apply. Thus a \$500 donation to the Pioneer Trust fund would fall in the \$235-\$278 range in after-tax cost, with the latter figure being relevant for the no surtax situation.



The SOARING ASSOCIATION of CANADA

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

free flight is the official journal of SAC.

Material published in *free flight* is contributed by individuals or clubs for the enjoyment of Canadian soaring enthusiasts. The accuracy of the material is the responsibility of the contributor. No payment is offered for submitted material. All individuals and clubs are invited to contribute articles, reports, club activities, and photos of soaring interest. 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.

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

The contents of *free flight* may be reprinted; however, SAC requests that both the magazine and the author be given acknowledgement.

For change of address and subscriptions for non-SAC members (\$26/\$47/\$65 for 1/2/3 years, US\$26/\$47/\$65 in USA & overseas), contact the National Office at the address below.

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Deadline for contributions:

5th January, March
May, July
September, November

L'ASSOCIATION CANADIENNE DE VOL A VOILE

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 articles publiés dans *vol libre* sont des contributions dues à la gracieuseté d'individus ou de groupes enthousiastes du vol à voile. Le contenu des articles soumis est la responsabilité exclusive de leurs auteurs. Aucune compensation financière n'est offerte pour la fourniture d'un article. Chacun est invité à participer à la réalisation de la revue, soit par reportages, échanges d'opinions, activités dans le club, etc. Le texte peut être soumis sur disquette de format 3.5" sous n'importe quel format de traitement de texte bien que l'éditeur préfère le format Macintosh (DOS est acceptable). Les articles seront publiés selon l'espace disponible. Les textes et les photos seront soumis à la rédaction et, dépendant de leur intérêt, seront insérés dans la revue.

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

L'exactitude des articles publiés est la responsabilité des auteurs et ne saurait en aucun cas engager celle de la revue *vol libre*, ni celle de l'ACVV ni refléter leurs idées. Toute personne désirant faire des représentations sur un sujet précis auprès de l'ACVV devra s'adresser au directeur régional de l'ACVV dont le nom apparaît dans la revue. Les articles de *vol libre* peuvent être reproduits librement, mais la mention du nom de la revue et de l'auteur serait grandement appréciée.

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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Consider donating securities

With the February 1997 federal budget, tax regulations were changed to further encourage charitable donations. For donations in the form of appreciated marketable securities, the rate at which capital gains are taken into taxable income was halved from 75% to 37.5%. Thus if one is considering making a donation to SAC, as well as realizing some gains on marketable securities, there is a tax advantage to donating the securities directly, rather than realizing the gain and then making the donation. On average, according to Department of Finance calculations, this can confer an additional 12% benefit to the donor, moving the value of the tax receipt into the 56% (no surtaxes) to 65% range, and the cost of a \$500 donation could be as low as \$175.

The power of Pioneer philanthropy

Should you say phooey when it comes to donating to the Pioneer fund? As discussed, donations to the Pioneer fund are eligible for a tax receipt which significantly reduces the cost of donating. Additionally, earnings on the fund are not subject to taxation, which means the value of your donation can build up reasonably rapidly over time. Because the earnings are protected from taxation, there is something to be said for front loading donations, rather than stringing donations out over time. The net cost to the donor to achieve the same effect on SAC's finances would be lower with front loading.

By way of example of the power of the Pioneer fund to improve our financial circumstances, consider a hypothetical example, that of Rodney Raskolnikov who donated some \$14,000 spread out during the past decade and a half or so. The after-tax cost of these donations would have been around \$7000, perhaps a bit less. The effect of these donations (including unrealized capital gains) on the value of the fund is in the \$35,000 neighbourhood, maybe a bit more. During this period membership averaged about 1340 per year. If all SAC members had a similar donation profile, the fund would now be worth in excess approximately \$47 million. If they had donated one tenth as much (at a net after-tax cost of around \$700) the fund would still be worth close to \$5 million. Had Mr. Raskolnikov front loaded his donations, they would now have a current value of \$58,000 — if all members did likewise the Pioneer fund would be worth around \$80 million!

1997 SAC "MEMBERSHIP METER" – as of 17 Nov

Club	Membership						
	90-96 avg	1997 total	% avg	90-96 avg	1997 total	% avg	
ASTRA	5	7	140	Montréal	103	99	96
Air Sailing	29	19	66	Outardes	29	24	83
Alberni	12	18	150	Pemberton	9	10	111
Base Borden	15	13	87	Prince Albert	10	12	120
Beaver Valley	11	16	145	Québec	37	55	149
Bluenose	39	29	74	Regina	33	28	85
Bonnechere	9	17	189	Rideau Gliding	16	10	63
Bulkley Valley	12	5	42	Rideau Valley	38	23	61
Central Alberta	10	11	110	Rocky Mountain	3	4	133
Champlain	56	56	100	Saskatoon	13	19	146
Cold Lake	26	18	69	Silverstar	—	8	—
COSA	43	34	79	SOSA	124	152	123
Cu Nim	62	63	102	Swan Valley	6	6	100
East Kootenay	5	15	300	Toronto	19	16	84
Edmonton	66	59	89	Vancouver	98	83	85
Erin	32	31	97	Westman	4	1	25
Gatineau	87	100	115	Wheatbelt	6	6	100
Grande Prairie	9	13	144	Windsor	11	8	73
Guelph	30	26	87	Winnipeg	69	61	88
London	42	39	93	York	88	84	95
Mont Valin	5	3	60	Non-club	11	31	282
				<i>totals</i>	1332	1332	100

Membership has done very well this year, climbing by 75 over 1996, a total which has not been better since 1991.



DEFINITELY

a learning experience

Nick Bonnière
Gatineau GC

TO PREPARE for possible participation in the World Gliding Championship in St. Auban, I went to fly there in the spring of 1996 with André Pepin. Very experienced glider pilots get killed in the Alps on a regular basis, so it is obvious that flying in the Alps is inherently dangerous. I did a lot of dual flying with skilled instructors and some solo flying, but the weather did not cooperate — it rained a lot. I got a taste of flying cross-country in the Alps, but not really enough to do it comfortably.

After qualifying to go to the Worlds in the 1996 Nationals, I decided to participate with some reservation. I planned to go two weeks prior to the official practise week. This would give me three weeks to prepare. My aim was to finish in the top ten. I knew this would be

difficult under normal conditions, but flying in the mountains would make it even more difficult. I was hoping however that conditions would be strong so that I wouldn't have to worry about the lack of landing fields. I was also hoping there would not be any strong winds which create extreme turbulence which had already resulted in the deaths of three glider pilots in the spring of '97. I was sure of one thing, though — it would be a learning experience.

I needed to get familiar with the ASW-24 I would be flying, become comfortable with the instrumentation, and hopefully visit most turnpoints once. Flying the glider needed to be second nature, so I didn't have to fiddle with the instrumentation, but instead concentrate on making good decisions. During the previous spring I found that I had difficulty flying with an altimeter in metres. I couldn't get used to it. The ground elevation varies greatly, requiring constant checking of altitude. I like to see the altitude precisely especially when caught in heavy sink at low altitude. Knowing that you can make it to that landing field is essential. At a thousand metres per revolution, the altimeter moves very slowly. An altimeter in feet provides three times the sensitivity. So I took an altimeter in feet with me and installed it in the glider.

Flying the ASW-24

I found the ship easy to fly right from first takeoff, and very pleasant. Conditions were good and instead of sticking to my original plan of staying close to the airport to get the feel of the glider and try out the instrumentation, I went cross-country. The cirrus moved in and I found myself hoping I could make an airport at the end of an unlandable valley 100 kilometres from home. I made it with barely 500 feet to spare. The cirrus moved out a half hour later, so I got a tow to the local mountain, found some lift and climbed to 10,000 feet. The cirrus moved back in. I entered a valley to try to sneak through a mountain range. I made it through the pass with 300 feet to spare. Finally I made it back to the Durance valley. To the north was an airport within gliding distance. To the south was St. Auban, my goal. I decided to go for it, but hit the sink, was now too far to go back to the airport and landed in a plowed field, scratching the belly of the glider when the gear sunk into the soft ground.

On the first day, I learned that conditions change quickly, there are few places to land, and I was over-ambitious — two landouts in a day in a new glider, in a new location. There were quite a few landouts that day, including Ron Tabery from the US team in the Open class who found heavy sink after going through a pass; he just had enough height to reach a field. The crop was high and he groundlooped and damaged a wing tip. He had to take the glider back to the factory for repairs.

I had an Open class ship!

During the official "Technical Control" of my glider, it was determined by laser that the wing span was 2.9 cm too long. The penalty applied would be 1 point per centimetre per flying day. This would not apply to me since the ASW-24 is covered by a "grandfather" clause. (Many gliders were found to be too long, and for days pilots used heat guns to bend the winglets just enough to bring the span down to 15m!)

A few hours before the final checks, I found out that the grandfather clause did not apply, because the winglets were installed after the new ruling. I would get penalized 3 points. It was too late to do anything about it. I spoke to the owner of the glider and we determined that the installation of the winglets was done before the ruling date. The Contest Director agreed and the penalty was removed. The next day however, the Contest Director determined that the grandfather clause only applied to gliders that had flown with that configuration in a World contest, and since no ASW-24 had flown in a World contest with the winglets, he gave me back the 3 points penalty per day. In the end I lost 27 points and lost a position because of the span penalty.

The GPS was very useful during the practise days. I could keep track of the nearest landable field, as well as the next turnpoint. I could switch quickly between the two and be sure that I could do a safe landing as I progressed on course. I gained confidence quickly at altitude, but couldn't convince myself to continue on course at low altitude. In a contest however, you have to keep going!

There's lift down on the deck

One day I saw a glider well below the peaks, in totally unlandable terrain in windless, marginal weather. He just kept going. He seemed to know what he was doing so I decided to find out for myself. I needed to learn! I followed along as he snaked through narrow valleys. He stayed very close to the ridge always, taking long detours if necessary. We didn't gain or lose altitude. At one point there was some lift so we did figure eights. This is very difficult with two gliders at the same height on a ridge in a very small area of lift. We went a long way like that, in heated air that slowly rose against the slopes. This was exactly the experience I needed to boost my confidence level. This was the best lesson of the whole contest, and I used it every single day of the contest.

I found out early that with 140 litres of ballast I could keep up with the LS-8's in the glide, but I lost out badly in the climbs. With 90 litres of ballast, I could climb with the LS-8's, but lost out rapidly in the glide. So, I could do okay on weak days, ie. with little water ballast, or the very strong days with heavy ballast. I also found that the ASW-24 had a tendency to lose airspeed when sink was encountered. To correct this



George Szukala

speed loss, I had to put the nose down, obviously, which increased the sink rate even more. One day, I encountered heavy sink on a ridge, lost airspeed, and therefore lost aileron control. I found myself pointing the nose down at the trees below, trying to steer away from the ridge in a heavily ballasted glider. The glider slowly veered away as I regained airspeed, and barely cleared the trees by ten feet. I could not slow down on ridges after that, and it cost me. Trying to do figure eights in a small area of lift at high speed, I couldn't climb. If I could slow down a bit, I might be able to get away, but ...

After a flight, I always analyze what went right and what went wrong. It is not always possible to determine what you should have done, but looking at the results of other competitors, you at least know what was possible. By determining what decisions were good and which were not, it is possible to improve performance the next day.

On the first competition day, the cloudbase was low and conditions were not very strong. The task was set to the south, away from the mountains. It was an equalizer with pilots dumping their water to survive on the third and fourth legs. On empty tanks I didn't lose anything on the LS-8 in the glide nor in the climb. I finished eighth and learned that it was possible to finish in the top ten.

Now where do I go?

The next day, the weather was stormy. I went around the storm after takeoff and lost

track of the rest of the Standard class. That was mistake number one. I headed for the start point and got low, too low to even come back for a relight. I managed to get some height and decided to do a start in the rain and headed for the sun towards the first turn. Five minutes later, I met up with the Standard class coming the other way, way up high. They obviously had gone south and found good lift and were gliding in under the overcast to do a start. I had a choice; do a restart, or keep going knowing that I was already behind by fifteen minutes. Since the lift was weak and it would have taken a long time to climb and go back to do a start, and then fly alone behind by thirty minutes, I decided to keep going. Was it the right thing to do? I don't know. Sometimes, even after a flight it is hard to say which decision was better.

I knew that!

I fell behind the gaggle on the first two legs, losing out a little more in each climb. Then I was out-of-sync with the clouds, ie. the lift was dissipating when I got there. Then under an almost completely overcast sky, I ended up low in the mountains. I saw some gliders way up under the overcast, but could not find a way to get up there. It was very frustrating. I found some weak lift eventually in a patch of sun which finally took me to cloudbase. I managed to make it around, but ended up second last for the day. I learned what I already knew — "get high and stay high" in overcast conditions and when you are low in the mountains, you're in trouble! I also should have persevered in weak lift to gain height instead of pushing

on to look for better lift. It also pays off to find your way to the sun before a start, even fifteen kilometres away as most of the Standard class did, and then come in for a start at cloudbase.

Where is that #!/@*% wave lift.

The next day was very difficult. The Mistral wind was blowing, increasing the danger level of flying in the mountains. These were the conditions I dreaded the most. I found myself doing spin recovery in severely turbulent rotor in a heavily ballasted glider. Talk about the adrenaline surge! I have flown in rotor before but nothing this severe. I tightened my belts as tight as I could, and used my left arm to brace myself and still hit the canopy with my head a few times.

I eventually managed to connect with the wave and started on course. I had plenty of height to reach the first two turns away from the mountains. On the way to the third turn, heading back to the mountains, I had to climb in very rough lift. Circling didn't work; there was lift as I headed into wind but heavy sink as I completed the circle. No amount of correcting the centre of the circle had any effect. So I did figure eights instead, to turn back into the wind instead of completing the circle. This worked well and I finally managed to get high enough to reach the mountains and hopefully find more wave. Before reaching the mountains, there is a plateau with a steep drop into a lake that I thought might generate lift. I thought the wind would flow down from the plateau to the lake and rebound, creat-

ing wave. I flew parallel to the lake edge looking for this lift. Half way up the lake I found some weak lift. I searched around a little and found the centre which I marked into my GPS. I stayed in that location using GPS, with the wave picking up as I got higher reaching 10,000 feet before it weakened. I continued on towards the next turn which was to the north of St. Auban.

I planned to look for wave behind the Lure mountain again in the same location I had found the wave before the start. I found the rotor and heavy sink. The vario was pegged down and wouldn't budge. I searched and searched, but in three minutes I was down to 800 feet above ground. There was no place to land below so I headed straight for the St. Auban airport. I was still hoping that I would find an end to this sink, but it was not to be. I just couldn't believe it! What a disaster! I had just blown my chances to place well. I put the gear down and told myself "Relax Nick. It's over. Concentrate on doing a good landing." I did a straight-in to the airport.

I learned a lot that day. I was so sure of finding the wave that I did not have a back-up plan, nor did I have enough height to attempt an escape back to the valley. The wind must have shifted somewhat, and I found the wave trough instead of the crest, and was too low to do anything about it. I was however, successful in finding the wave by the lake. A good decision followed by a terminally bad one. I wasn't the only one to learn from this day. At the next morning's briefing a Swiss pilot in the 15m class thanked the French team for showing him how to fly on a wave day.

Almost a night landing

The fourth day was the most difficult of the contest. The wind was still blowing, but the weatherman called for convection, no wave. The third leg crossed over the Ecrins mountain range with peaks at 12,000 feet but cloudbase was at 9000 feet. I was unwilling to attempt crossing this mountain range by

sneaking through passes at 9500 feet unless I had plenty of height to see what was on the other side. There was no way I wanted to get stuck in a bowl with no exit. I couldn't get above 8500 feet so I decided to go around the mountain range, a detour of about 50 kilometres. If I found good lift and gained enough height I could always cross back onto course, thus minimizing the detour. The altitude never materialized. In fact I had trouble finding lift. I progressed on course slowly. It was more humid and hazy, and cloudbase was now only 6000 feet.

The sun was lowering, making it difficult to see ahead. I had to resort to doing S-turns on one occasion to look ahead and make sure I could clear the ridge ahead. I found extreme turbulence by the Pic de Bure, and almost decided to head for an airport nearby and call it quits. But I had come here to compete, not to give up. I eventually made it to the turnpoint and found a little wave to 6000 feet.

It was now getting dark. All the ridges looked the same as I proceeded on course in an area I had not seen before. I kept going along ridges and then skipping across valleys to the next ridge. I almost got lost, confusing one mountain for another in the haze. I reached St. Auban airport at 9:10 with 300 feet in hand. I had another 15 kilometres out-and-return to do, but had to land before sunset at 9:15 pm. The last turnpoint was in the valley to the south, no ridges to follow, so I put the gear down and landed. I learned that lift lasts very late in the mountains as the hot air in the valleys still rises along the slopes, just enough to keep a glider up, but I was at circuit height most of the last leg, and it was definitely not fun at all.

I have been to many contests, in many types of conditions, but never under the constant stress of a possible disaster. There were some accidents, and some near misses. One pilot hit a cable as he was flying along a ridge. He was lucky. The cable scraped all along

the bottom of the fuselage and along a wing tip. Had he been a few inches lower the cable would have passed over the glider, possibly breaking the canopy, but certainly cutting the tail off. I had to take evasive action when I caught a glimpse of a glider barely twenty feet above in a thermal. I remember pushing the nose down and hoping the tail of my glider would not hit the glider above. Later, I realized that there could have been a glider below when I pushed the nose down.

I was able to relax on two occasions. After climbing to 11,000 feet on course one day, I took a few seconds to marvel at the mountains and valleys spread out in front of me for miles. Another time, as I was flying on the ridge in the St. Crepin valley, there was a deep gorge opening on my right, and as I looked in, there was a most impressive waterfall cascading for a thousand feet. It was magnificent. The rest of the time it was pure concentration on the task at hand.

But I'm glad I went

Flying competition in the mountains is very difficult and requires experience to do well. When tasks took me to an area I had flown a few times before I found I could relax a little, and concentrate on making decisions. In new areas, I had to concentrate instead on finding my way through valleys and passes. Local knowledge was essential to doing well. I flew 100 hours and 5400 kilometres during the contest. This is barely a fraction of the experience of the French and other European teams. When conditions are strong and you can stay high, mountain flying is absolutely spectacular. In a contest, however, conditions are rarely strong all the time, and the lack of landing spots makes flying in the mountains character building. I am glad I had the chance to participate in the '97 World Championships. It was the opportunity of a lifetime. It was good to meet and fly with other pilots that you just hear of or read about, including present and former world champions, and even the designer of the ASW series of gliders. ♦

Blanik ad

Double-crossed

Mike Cook
East Kootenay Soaring

BURNS' "THE BEST LAID PLANS OF mice and men ..." was on my mind as my grand entrance strategy to the 25th soaring camp at Cowley seemed to be evaporating. My plan was to fly from my home airport in Cranbrook, BC over the Rocky Mountain Trench and into the camp. However, I was unable to convince my wife to drive my truck, camper and trailer through the Crowsnest Pass all by herself!

On to Plan B: Friday night I hooked up the trailer and arrived at the Cowley strip to enjoy a beautiful sunset behind Centre Peak. It looked like it was going to be a good day tomorrow, so I set the alarm for 7 am.

Awakening to a bit of dew on the grass and the promise of a great lapse rate, I scrambled to clean and rig my glider and made ready for my second crossing of the Rockies. The forecast upper winds were not going to be a problem and clouds started forming at 1030. Where was everyone! There had been possibly fifteen glider trailers in camp this morning and I wasn't being pulled to the line until almost noon. There still did not seem to be any activity! It looked far too good of a day to wait, so I summoned the first towplane and departed. The 14 knots encountered on the tow further confirmed my suspicions of the potential of the day ahead.

I released in only 3 to 4 knots but as I moved westward to the mountains, things sure came together in a hurry. My first climb was one of the very few of the day. Three to four knots soon became eight, and above 10,000 feet asl my vario was reading between 10 and 12. With two streets setting up heading into the wind and westward, I did not even bother going to cloudbase on my first climb. Orienting the two streets with my map, I decided on the northerly route because it would take me directly to Cranbrook. Although this route took me over some very inhospitable terrain, earlier flights had confirmed I could find a number of safe landing areas in the Elk Valley (Fernie area) or fly back to the Elk Valley airport north of Sparwood.

This was not really a concern though since I had been flying straight for 20 miles and had climbed over 2000 feet at speeds over 100 knots. Now the "greying" effect was



more troublesome. So, as not to completely whiteout, I veered to the northwest out from under the cloudstreet with Mount Fisher in view. This peak juts to 9640 feet and is as visible as Mount Assiniboine on my north-easterly crossing.

Still flying at 90 knots, I'm into very familiar territory by now — coming out of the Kick-ing Horse drainage at Mount Fisher, just northeast of the Cranbrook Regional Airport — across the Rocks with only 1-1/2 climbs and only an hour into my flight! By now I am looking into Plan C. I decide to fly north in the Kootenay/Columbia Valley and try to hook up with gliders out of Invermere. Less than five minutes later I pass Heinz Portmann flying his DG400 heading south, running the rocks. Being right at home in this valley and seeing Heinz' altitude and speed gives me confidence to push the stick forward and dolphin north.

Running low and fast, between 7-8000 feet at speeds up to 90 knots, I'm quickly at Canal Flats, a large gap in the trench where the Kootenay river enters the valley. I encounter the only real sink of the flight and end up at 6400 feet at Fairmont Hot Springs looking up at Romeo 2 passing overhead to the south. I stop and climb at the resident elevator above the hot springs, then press on to Invermere. I talk to Neil Gegenbauer flying the towplane when I'm just east of the Invermere airport and contemplate pushing on to Golden. It's still only 2:30 and I feel I have lots of time ... but realize if I call my wife in Cowley to come and get me in British Columbia, it's going to be more than difficult to get her back to Alberta!

I line up on a cloudstreet heading southeast over Mount Harrison and plan my route back to Cowley. My explorations both from Invermere and from Cowley come in very handy as I calculate glides to landable fields. I climb to cloudbase at Mount Harrison to

jump across the Elk valley as there is restricted airspace down low due to mining activity. This flight has been great but I really don't want it to be a blast!

At altitudes between 10,500 and 12,000 I comfortably pass Elkford. Over the open pits and north of Centre Peak from almost forty miles out I know the conditions are going to get me back to the airfield! I've been above 10,000 feet for the last forty minutes and haven't made a turn!

The Porcupine Hills come into view as I use the Livingstone Range to keep my speed up. I've been practising flying fast all year and my persistence has paid off. Not once over the radio has anyone asked me, "why are you turning, you weenie?" In fact, this gives me the idea to report my flight and duration to *Jolly Miller*. (I can still see the smile on the face of Mike Glatiotis when he flew over the Rocks from Black Diamond to Invermere — now it's my turn to grin.) I've covered 265 miles in 3.1 hours and have made two Rocky Mountain crossings. I can hear in my friend's voice our camaraderie and our friendly competitiveness.

Readyng for my circuit and landing, the realization sets in ... this has been my most memorable flight since converting from hang gliders! I recall all the reconnaissance flights, all the map reading and then again flying back into unfamiliar terrain to get a better "feel" before venturing even further into the mountains. On downwind, I realize that this flight has taken five years of preparation. On final, my thoughts go to the task at hand, but when my rollout is over, I recall all the discussion and banter that preceded this flight. As I stepped onto terra firma, I knew that the first day of the 25th Cowley Summer Camp will be always ingrained in my memory. Mother Nature has tricked me on many occasions, but on this day I was not to be double-crossed myself! ♦

Contest flying for fun & profit

photo not available for pdf file

David Crail, from NZ Gliding Kiwi

AM QUITE NEW to contest flying. Previously I was comfortable scooting about my home site on Sundays using familiar routes and extending my range bit by bit on the better days. I generally went where the best lift seemed to be and if the conditions looked less reliable in other directions, I didn't go there. This meant I had an easy flight and consistently got home before bar opening time but didn't learn a damn thing.

After some prompting, I entered my first contest at the South Island Regionals at Omarama. The tasksetter got up and identified what seemed at the time to be the task from hell. He wanted me to fly over 130 kilometres of unfamiliar country in conditions that were much better in the opposite direction. I had been rudely shaken from my gliding comfort zone and the familiar haunts of my home skies were suddenly, woefully distant.

A quick chat with the other guys confirmed my folly as their robust confidence contrasted with mine. How had I got so cocky that I thought I could mix it with the big boys? Well, I decided that I had taken the trouble to get to Omarama, paid registration and tow fees, and arranged a crew so there was little point in pulling out. Besides, how would I explain it without looking stupid?

So, with dogged determination I completed what I thought would be the most important preparatory steps for the flight; that of researching available airstrips, marking them on my map as well as the one to be used by my crew.

Then the launch, release and climb — all suspiciously normal. When I reached the start height I looked out on track to the first turnpoint and identified areas of lift and, looking closer, spotted other gliders already there. A little happier at the prospect of a climb or at least landing out in company, off I went.

As I got along track I endeavoured to stay high enough to get back to Omarama if it got too hard. The result was lots of climbing interspersed with small bits of straight line flight towards the turn. Then to my delight, I realized that I had made my first contest turnpoint.

I had a bit of trouble taking the picture because I was finding it difficult to establish my position from 13,000 feet. All the while I was marvelling at the other gliders rounding the same turn way below me. The remainder of the task was completed in a similar fashion and at no time fell below 9000 feet. The end result was a resounding last place with an enormous time, but it was all my own work.

I learned more in that one flight than I had chugging around my home patch in the previous couple of years. Then I learned the same amount again by chatting to the other contest pilots over a beer that night and comparing method and technique. I continued to learn at a rapid rate for the remainder of the contest and finished a much better cross-country pilot.

I discovered that contests are one of the best learning environments available and more significantly, you don't have to be one of the 'good' pilots to enter. At the end of that first contest I found I was doing things quite differently in comparison to the Day One task. It was more to do with a change of mindset than anything else. Instead of worrying about how far away from Omarama I was and staying high enough to get back if it got tough, the moment I flew away on task Omarama was forgotten and the focus became the first turnpoint. Also my recognition and subsequent exploitation of conditions grew keener. No more could I follow the lines of best lift, I had to go to the turnpoint, lift or not; and I had to make do with whatever climbs there were in the vicinity. I also discovered I knew a lot less about my glider than I thought.

In that first contest the tip to start early was of particular help. This was to ensure that as I progressed round the task the rest of the

field would catch up and overtake and there would always be at least a couple other gliders in sight during the whole flight to help mark climbs.

During a subsequent contest, a rainy day was used for a symposium where several 'good' pilots answered our questions from the floor on numerous subjects; the most memorable being the subject of tail ballasting. The outcome being that the next day any lead or other suitable ballast material became very scarce as most of it was disappearing fast down the fins of gliders. The fact that several pilots were testing ballasting meant that a good selection of findings were available after just one day and the results were comparable. The presence of many experienced pilots ensured these ballasting tests were conducted safely and that we experimenters knew what to look for in our testing.

The first club flying day after returning from the contest I launched and promptly flew double the range I had previously achieved without much more effort. I wasn't one of the 'good' pilots, but I was getting better.

So how is it that the really good pilots are good? It seems they are streets ahead of the rest of us mortal folk. Even when they land out, they have flown further than we have ever flown just to do it. What inner sense do they have that makes them so good at soaring? These are the questions I often ask myself when I read the spectacular accounts of well known gliding personalities who are describing their goal or contest flights. It seems they launch, climb at ten knots under any wisp in the sky, set off at a blistering pace to the next ten knot wisp, maintain an average speed in triple figures, and get home in time for pre-dinner drinks.

These are difficult questions to answer and I'm not even sure I'm qualified to try but, given that everyone has an opinion, this is mine.

The pilots who are generally accepted as the good ones have not had the benefit of special training. They have been a product of the same training methods we have all undergone. Therefore they had the same start but have perhaps applied themselves differently to others. It's a bit like the difference between the tradesman who prefers to work for wages and the tradesman that takes it a step further and works for himself — one is going to be the richer for it. The difference being that the successful one will have exposed himself to new developments and learning opportunities.

Successful pilots who have a rare gift or natural ability are the exception rather than the rule. The remain-

The 1997 SOSA CROSS-COUNTRY CLINIC

Herrie ten Cate
SOSA

THE LADY in the medical supply shop looked at me knowingly when I said I was a glider pilot and needed a catheter. "So you're another one of those glider guys," she said, lowering her voice and in the same breath added, "we get a lot of your type in here." It made me wonder if glider pilots in general had trouble holding their water or whether she really knew what I was talking about. I wanted to know what one looked like before I put down hard cash, so she led me down the hall and up a flight of stairs where they kept their stash of catheters, bags and assorted plumping. Not being a hot contest pilot, I opted for the regular size and beat a retreat back to the gliding club, hoping that the skies would start to clear.

The previous day, August 25 to be exact, was a soaring day that I will never forget and that was the main reason for my visit to the above mentioned medical supply shop. I discovered that little Ziplock bags just don't do the trick and I wanted to be prepared just in case there was going to be another amazing flight during that week. Alas, the weather didn't cooperate after Tuesday but it didn't really matter because it was such an incredible day.

Jörg Stieber and Dave Springfield were the two seasoned cross-country hands who would shepherd their fledgling chickadees away from the nest and through the fine points of the theory of soaring. A buddy system was also set up to give the students all the help they needed just in case someone got into trouble. Each novice was teamed up with more experienced pilots like Chuck Keith, Richard Longhurst, Tom Coulson and Ed Hollestelle.

Monday started out nicely, with the clouds and their associated thermals starting to pop in the early afternoon. It was decided that we should be conservative on the first day so we set course for the dam at Woodstock, which would be our first turnpoint. The next leg would take us just north of Tillsonburg and the next turnpoint, which was Mount Elgin. The turnpoint used to be the airport at Tillsonburg but skydivers started to complain when they were free falling through groups of thermalling gliders.

Some of the thermal apprentices managed to leave their guardian angels behind in weaker conditions and reach home base before them. With the exception of one landout, the first day was a success with all of the other pilots making it back to field.

Pilots on the first day flew anywhere from 160 to 200 kilometres depending on when they decided to call it quits. At our rather informal debrief it was decided that we would all attempt a 300 kilometre badge flight if the conditions were good enough the following day.

Well, the conditions were just about as perfect as any glider pilot could wish for. Just before noon, the thermals were taking us up to 5000 feet and by 12:30 we were on our way to the first turnpoint which was the town of Granton, located just northwest of London. The next leg was to the northeast and the town of Varney, which is south of Angus. 123.4 MHz was full of chatter throughout the afternoon, with instructors giving encouragement to their students and pushing them along the course. At one point during the second leg of the triangle, it dawned on me that I was half way around the course and the conditions were improving as we went along.

It was at that point that I took a moment to absorb the astounding view of Southern Ontario from 6000 feet. The patchwork of fields, the dancing cloud shadows and the coast of Lake Huron off towards the west. It was truly an awe-inspiring sight. At the same time I was so happy my colleagues were slaving away at the office and would never be able to comprehend the beauty of this particular soaring flight.

After rounding the final turnpoint (two or three times for those of us who aren't very good at snapping the shutter), it was time to head back to SOSA. Most of the pilots left Varney with 7000 or more on the clock. For those who had them, a final glide computer or a GPS came in very handy. For the novices like myself it was a question of counting the 10 kilometre rings, looking at the altimeter and counting my fingers while still trying to fly the glider. Everyone managed to figure it out, because all made it back to the field in times varying between 4.5 and 5.5 hours.

This short description can only give you a hint of the day and the spectacular conditions. But like with so many things in life, you really had to be there. Something like ten pilots completed the 305 kilometre course and there are a number of Gold and Diamond badge applications being processed including those belonging to Tory Rywak, Tom Coulson and myself.

The cross-country clinic was in my opinion a resounding success even if we only flew for two out of five days. For pilots who are looking for new challenges and the excitement of departing for unknown destinations, I highly recommend signing up on one near you next year. There's nothing like learning the ropes from some of Canada's best soaring pilots. And finally if you take such a course, you'll certainly have the confidence, like me, to final-glide a 2-33 or in my case an LK-10A from the African Lion Safari back to Rockton without a plastic bag strapped to one's calf.

training & safety

ALL ABOUT SIDESLIPS – an edited Internet exchange

Jack Dodds, Erin Soaring Society

I have observed that there is confusion among glider pilots about sideslips. I've also observed that many pilots aren't very good at using sideslips for glide path control. This may be because many pilots believe that bank makes a glider sideslip. This is wrong! *The rudder makes a glider sideslip.*

Here is my method for teaching sideslips. Okay, I'm going to make a provocative statement. The following method is the best way to introduce a student to sideslips. Am I all wet, or do I have a point?

On the ground Explain to the student that we normally fly the glider with the nose pointing straight into the relative wind. The primary reason for doing this is that it minimizes drag. However, there are two situations where we deliberately misalign the sailplane's nose to the relative wind by yawing:

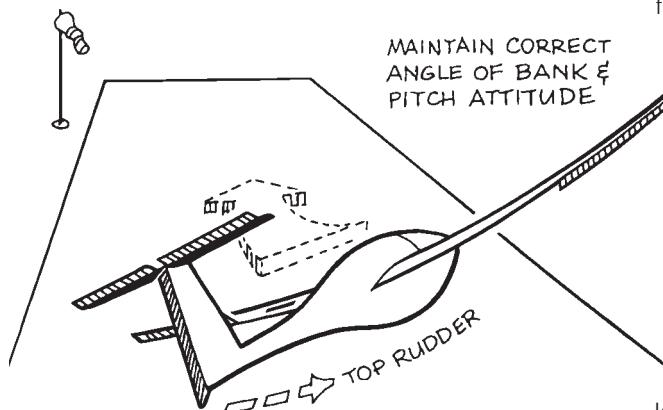
- We can do it to increase the drag, and so the rate of descent. For example, if we are overshooting with full spoiler on final, approaching over high obstacles, or if we just need to come down fast from high altitude.
- We also do it in a crosswind landing situation to line the fuselage up with the runway centerline while our direction of motion through the air is actually turned towards the upwind side of the runway centerline.

We call the maneuver in which the glider flies in a straight line with the fuselage not pointing straight into the relative wind a SIDESLIP. Explain to the student that the directional stability of the glider causes it to align its fuselage with the relative wind when in straight flight. To produce a sideslip, the pilot must use *the rudder* to yaw the aircraft. The rudder must be held throughout the duration of the sideslip, and released to recover from it.

The student should know by now that *bank, not yaw (rudder), must be used to execute a turn*. However, point out that in a sideslip the relative wind will hit one side of the fuselage, which will gradually turn the glider from a straight path. To prevent this from happening, the glider must be banked (*slightly*) so that part of the lift of the wing can balance the force of the relative wind striking the side of the fuselage. It's better to explain this while standing beside the fuselage so that the student can easily visualize the relative wind and its effect. A model can be used also.

Caution the student that in a sideslip, the airspeed indicator of most gliders will not be accurate, therefore it's essential for safety that a stable pitch attitude and airspeed be established before entering, and that the pitch attitude be maintained during the slip.

In the air At altitude, establish straight flight toward a reference point on the horizon at approach speed. Yaw the glider by pressing the rudder pedal to the stop over a period of 2-3 seconds. The student should be warned that the glider will tend to bank in the same direction as the yaw, but this should not be permitted. Now bank the glider *slightly* to the opposite side. Point



out that although the glider is banked, it is still possible to maintain pitch attitude by comparing the center of the top of the instrument panel to the horizon. Point out that the stability of the glider will cause it to bank towards the depressed rudder pedal unless opposite aileron is held continuously.

Hold the aircraft in this attitude for some time — long enough to watch the reference point on the horizon and decide if the aircraft is turning. If it is turning toward the depressed pedal, increase the opposite bank *slightly*. If it is turning the other way, reduce the bank, but not so far that the wings are level! Then watch again.

Recover from the sideslip by releasing the rudder pedal, levelling the wings, and centering the yaw string. If the sideslip was executed perfectly, the nose will be pointed toward the original reference point on the horizon, and the airspeed will be the same as when the sideslip was entered.

Now the student can try. Inevitably, the student will use the wrong amount of bank, usually too much. If the glider turns toward the low wing, tell the student to recover

from the slip and then do a coordinated turn to line up with the reference point on the horizon. Caution the student against lining up by actually banking *toward* the depressed rudder as this causes a skidding turn, which is dangerous in some situations (especially the final approach) as it can turn into a spin without warning.

Comments

- Sideslips are indeed an integral part of a pilot's repertoire, or should be! It's an easy maneuver that should require no more effort than a coordinated turn, but often it's ignored or not explored to its fullest reach. As an instructor I've used sideslips as a gauge to measure my students, not just to see if they can do it, but to check their judgement as well. I'll set them up high in the circuit and they usually don't react until they're on final. Then, with full spoilers, they realize they won't hit their target, they'll be too high. Then comes the part I love: "Should I do a sideslip?" they ask. Brilliant!

Many pilots just don't make an effort to fully explore the performance envelope of the airplane they are flying, and a poor sideslip is proof of that. If a pilot can't enter a sideslip and recover without gaining more than five knots, they get a poor grade from me on a checkflight. Gaining speed in this maneuver contradicts its sole purpose: to increase one's rate of descent without increasing forward speed.

I was fortunate to have been taught mostly by older pilots who used sideslips in their learning days out of necessity (2-22 spoilers, for example, were pretty useless). I was always impressed by one pilot, a relatively young one, handle our towplane with amazing precision. He'd practise sideslips on final, one wing down, swap sides and put the other wing down, swap back and then land with no apparent increase in airspeed throughout the entire approach. It's not just a good maneuver, it can be fun too.

It's not old hat, it is a lifesaver. Even with full spoilers in today's sailplanes, one may still need a sideslip to shoehorn the plane into a small field or over a tall obstacle.

Mike Morgulis, SOSA CFI

- At York we teach a lot of sideslipping since we have a big fleet of 2-33s for flight training and sideslipping is an essential skill for 2-33s and 1-26s.

It's quite simple: lower the wing and apply opposite rudder just following the stick input. Adverse yaw takes care of the initial yawing motion for you, so the rudder input can follow the aileron slightly. The elevator follows in the correct amount as found by practise to keep airspeed constant. In practise, the aileron, rudder and elevator inputs

are more or less done at the same time. The slip is basically limited by rudder authority, so I tell my student to lower the wing and use the feet to keep the nose from moving in the direction of the bank. If he has full rudder in and the nose is swinging, reduce bank. Most students are not aggressive enough with the opposite rudder at first.

The most important thing to teach students about slips is to make sure they are aware of the effects of wind gradient when close to the ground and the danger of slipping away from a crosswind. The gradient can effectively try to "blow" the glider over as the lower velocity wind, where the down wing is, reduces its lift relative to the other wing, which is sticking up into the higher wind velocity. The rolling moment can be enough to almost overpower the ailerons of a 2-33. You have full aileron in 50 feet off the ground and the damn thing just stays there banked over 30°. Believe me, it's scary. Those with good instincts can save themselves with a big shot pro-aileron rudder.

So our golden rule is do not slip away from a crosswind. We also teach slipping turns, which are simply turns made with opposite rudder. You apply more bank than rudder and the glider turns as it slips. If you're *really* high you might need to use sideslip before you even turn final and this is where slipping turns are handy.

John Kahn, York

- My experience in teaching sideslips is that most students try to enter and exit the sideslip too quickly. Jumping on lots of rudder from the neutral position gets a rapid swing going which then builds some angular momentum about the yaw (vertical axis). The glider swings past the normal "stable" yaw position and then gets pushed back with a series of damped wiggles resulting. I encourage the student to ease the rudder in slowly to watch the nose move.

Ideally the yawing motion can be stopped part way (with partial rudder deflection) and then increased some more or decreased allowing the glider time to react and the student to adjust the bank angle at the same time. This leads into teaching crosswind landings, ie. ease in enough rudder to align the fuselage with the runway and then use bank to correct right and left of the centre line. Hurried full deflection movements simply don't work here. Anyway, that's the way I see it.

Jim Oke, Winnipeg

- I try my best to keep things simple (KISS) as I am sure most of us do. Therefore, I explain (on the ground with a model or with my hands) the difference between normal straight and level flight, and slipping, which involves a sideways movement of the relative airflow across the aircraft.

In the air I always have the student fly an attitude, using the horizon at a specific and constant distance relative to the instrument

panel, which will correspond to a constant airspeed in stabilized flight. Next I have them draw an imaginary vertical line up the centre of the glider, and where this line meets the horizon, I call it "the crosshairs" (it's just a reference point really). As long as the crosshairs stay on the horizon, a specific airspeed will be maintained regardless of glider attitude, including the sideslip.

The amount of sideslip is controlled by the rudder, and the direction of flight is controlled by bank. So I have the student fly towards a ground reference near the horizon. Then I have them apply a little rudder (a quarter to a half is good), enough to show the primary effect of rudder, and ensure the crosshairs are not on the ground reference. Now I instruct the student to apply enough bank to keep the glider flying towards the ground reference, ensuring there is no sideways motion of the reference on the canopy and that the crosshairs are still on the horizon to ensure proper pitch control. Next, holding the same amount of rudder, I have the student experiment with more or less bank, which shows how sideslip direction is controlled (noticing the VSI, airspeed indicator errors, etc. all the while). Once the student understands and can control pitch and bank in a mild sideslip, he/she is ready to try a more aggressive one. The more rudder applied, the greater the rate of descent.

On another note, it seems that different instructors use different methods and techniques to teach gliding and some of these are less successful than others. However, the theory of flight and aerodynamics doesn't change. So it seems that standardization in our gliding training at clubs is either not appreciated, or not enforced as much as, say, the power pilot training. Where are we going wrong and what do we do about it?

Paul Frigault, Cold Lake CFI

- Hi Jack! Most replies seemed to say that teaching sideslips is necessary, etc. and we do it this way at our clubs, sort of thing...

The approach that you would appear to use is not what we teach to our instructor candidates at our courses. For example, I would hate to apply full rudder in 2 to 3 seconds in several gliders and hope the student can sort out any kind of reasonable sideslip in a first attempt, or are you, the instructor, demonstrating? Note that the instruction manual is written assuming that the student is doing all the flying, a better technique at this stage. After all, the maneuver is given in Chapter IV, Advanced Maneuvers.

Ian Oldaker

- I want to thank everyone who responded to my sideslips article. The replies made interesting reading and I learned a lot from them. Some suggested that "rudder first" is not the neatest way to enter a sideslip, at least not in some gliders. True; but my contention is that "rudder first" is the best way to *introduce* a student to sideslips. The ob-

jective is to make the student understand that it is primarily the rudder that holds a glider in a sideslip, so that the student will use adequate rudder and not excessive bank when trying to enter a sideslip. It may be neater in some gliders to start with bank, relying on adverse yaw to begin the sideslip, and then to hold the sideslip with rudder. But, as an introduction to sideslips, I think that's a confusing approach.

Still, I can see that it may be too much to start the student with full rudder and no bank (depending on the glider). Also, the student should be warned that a glider will tend to bank towards the side of the depressed rudder pedal, and that it is important not to let it do so — a skidding turn is risky. But it is critical to show the student, at altitude, the maximum amount of bank that can be used in a full rudder sideslip at approach speed without causing a turn.

I think it's futile to tell the student to use "enough rudder to keep the glider from turning". Even with a medium bank in most gliders, full rudder is not enough — so the student cannot comply with the instruction. If the student gets the idea that bank produces sideslip, it's difficult to change this first impression later on. The mistake I most often see in slips on final approach is the initial use of too much bank, so that the glider turns toward the low wing, necessitating some complicated corrections to get the glider lined up with the runway again. If the student subconsciously believes that bank produces sideslip, when he/she turns final and sees that the glider is very high, the first reaction is to use lots of bank, which of course, makes the glider turn.

The comments on the slipping characteristics of various gliders made me think about why there should be such a range of characteristics. I can see these:

- Other things being equal, some gliders have more aileron drag than others. In such a glider, it may be quite practical to begin the slip with the aileron drag alone.
- Some glider fuselages do not generate much lateral aerodynamic force when yawed, and will require very little bank to maintain straight flight in a full rudder slip. If one of these also has low aileron drag, entry with aileron is not going to work!
- Gliders with low wing loadings tend to be flown on approach at a relatively high margin above stall, because we teach students to fly at " $1.3 V_S + V_W$ but never less than 50 mph". In straight flight, the wing always develops lift about equal to the weight no matter what the speed; but the sideways force on the fuselage will increase with increasing airspeed. So a glider being flown at a high margin above stall will need more bank to balance this force than a glider flown slower. That seems like a good theory — I'd like to test it. It would explain why more than one pilot says the K8 needs a lot of bank in a slip.

Jack Dodds

hangar flying

ONTARIO PROVINCIALS

THREE SOLID DAYS OF FLYING, two of which were full contest days, 20 pilots and tough flying is an understatement of the 1997 Provincials held at MSC in Hawkesbury.

Once again I was fortunate that SOSA loaned me its CS-77, *Hotel Tango*. I left early Friday morning and raced Dean Toplis and his Aeronca Chief to Hawkesbury. I won! (He claims he got stuck in bad weather!) The SOSA group turned the volleyball court at MSC into a tent city. Of the twenty competitors, eight were from SOSA, and the rest from MSC and Gatineau Gliding Club. The registration went well and we got down to business very quickly — the pool!

One interesting trailer came through the gate all the way from SOSA. It was Pat Templeton's Ka6. It seems that some unnamed artists painted it to look like a chip wagon. It was the talk of the grid for a while.

Pat was one of the first gliders airborne on Day One. Apparently it's a tradition at MSC to launch gliders into a blue hole. The day didn't develop very quickly and we were forced to wait for the ceiling to pass 3000 feet agl. Contest Director Ken Brewin was in deep dialogue with Ulli Werneburg as to what we should have as a PST task. It got downgraded from three hours to one and a half. But before the gate could open, more than three-quarters of the contestants came back to relight, causing havoc on the ground. Thanks to the efforts of the crews and the club, everyone was launched and those of us that remained airborne were finally given the green light to start.

The majority of us went to Pendleton, Windover and home. Walter Weir went south to Alexandria, then Windover and home, thus winning the day. I managed to make it back, in eighth place no less! Quite an improvement from last year. As soon as I landed I went off to retrieve Kerry Kirby and Pat Templeton from Windover.

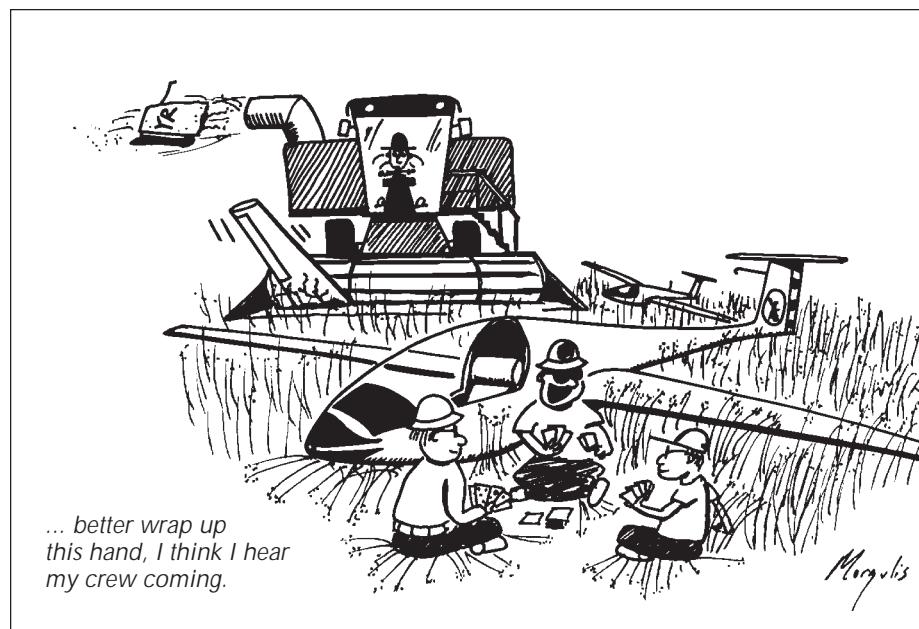
Retrieves are always a good time to get to know each other a bit better, listen to the pilots and their decisions, and offer a hand that will one day pay itself back, only to be loaned again on another. We arrived back at MSC in time for the banquet. In a nutshell, the food was excellent, skewers full of ripe veggies, chicken and beef, lots of salad and corn, and dessert to boot!

There were some novices in the contest and there was some talk the next day during the meeting about how to synchronize a camera, when to start, how to finish properly — and Walter told us how to win a day. Bernie Palfreeman gave us his synopsis of the

weather; it would be marginal. We gridded the planes, launched, and again waited for the ceiling to rise above 3000. Ulli and Ken decided upon a 2 hour PST. The weather overdeveloped rapidly as a low trough moved in and the lift got cut off. I could hear pilots landing back at MSC as I was pushing farther to the south. I tried to connect with a promising street near Vankleek Hill, but it went dead as the sky filled in. I hung over Highway 417 for a while in zero sink weighing my options. The zero turned to minus and my options got short-listed.

and to come in with as little energy as possible. It was looking good up to the last second when a wing dropped and he groundlooped. It sounded worse than it actually was, both he and the glider were undamaged. Norm Fortin heard my warning and landed just north of us.

Steve and I walked to the restaurant/FBO/gas station known collectively as "Herb's". We called our crews and were settling in with an ice cream cone when Herb came running in telling us a glider had crashed in the barley, and that another one was down in a field just west of the highway. Steve and I took off like two gunmen leaving a



FINAL SCORES	
Pilots	Pts
Walter Weir	1600
Ulli Werneburg	1336
Robert DiPietro	1332
Wilf Krueger	1298
Dave Springford	1282
Fred Hunkeler	1257
Ed Hollestelle	1238
Mark Schneider	1215
Udo Rumpf	1078
John Bisscheroux	1078
Kerry Kirby	967
Peter Kom	935
Mike Morgulis	915
Richard Longhurst	817
Norm Fortin	422
Steve Jennings	367
Pat Templeton	193
Pierre-André Langlois	169
Gilles Séguin	98
Hicham Hobeika	66

bank, and saw that Ulli had landed beside us, he had groundlooped as well, but apart from a torn tailskid, the reports of his demise were greatly exaggerated. Walter Weir landed across the highway in a better field, but had to get his trailer pulled in and out by tractor. We met up with our farmer and he kindly cut us a path to our planes, both for our ease and to minimize crop damage.

With five gliders in less than a square mile, it was a popular area to fly into. I wondered if perhaps a gigantic fibreglass magnet lurked beneath the soil. It turned out that this was Ken Brewin's neighbourhood, but he said he would deny any knowledge of us should the locals get nasty. My crew chief, Kathy Burany, came with Dave Springford to pluck me out of the barley. It sure pays to have a

great crew, especially when one of them is a contest pilot! Dave reassured me that I'd done the right thing by taking the barley instead of the runway.

We returned to find Richard Longhurst hard at work at the power pole, slaving over a blender with ice, mixer and bottles of assorted liquids. In no time he was serving up margaritas, piña coladas and some hors d'oeuvres. Bill Roach from MSC told us that he'd never seen the pole so "active". It pays to come prepared. We settled down to our venison steaks, purchased from Ken's deer farm. Ironically, Ken later apologized for the absence of his brother, Derek, who had recently hit a deer with his car.

So, Day Two was not an official contest day as less than 20% of the group went farther than 50 kilometres. Unofficially Kerry won the day in his Jantar. I was down to 10th, but not bad considering Ulli came in with me in the field. Only later did I find out that he'd gone to Alexandria and landed on the way back, not on the way there like I did.

Bernie had a glint in his eye during the briefing on the grid on Day Three. He said it wouldn't get too high until the end of the task, but it looked much better than Day Two. We launched without a hitch and started as soon as the clouds got to 3000 again. The pack darted off west to Pendleton, then split up from there. Ulli and Dave went to Lachute, came around Hawkesbury and repeated the triangle which was under a big cloudstreet. I opted for Casselman which looked lonely out there in the blue, far from lift. Luckily for me I found some weak lift, indicated by the strong scent of manure, and made it high enough to get a better thermal, less stinky, more towards Maxville. I made it home from there, my best contest finish ever.

We packed our planes away, struck camp and waited while Ed Hollestelle calculated our scores. Walter was first, Ulli won the day and took second overall, and Robert DiPietro took third. There were some strong contenders in the group, Mark Schneider in the MSC's LS-1 did very well, as did Peter Kom in another local LS-1.

With a long drive ahead we left after quickly shaking hands and thanking all those who made it such a great contest. MSC did very well to help us out. Thanks to the towpilots and ground crews, the scorers, the gridders, the rope runners and the folks that put on a great dinner and who looked after us afterwards. Thanks also to Terry Beasley, Ken Brewin, Bernie Palfreeman and Ulli Werneburg for giving us a contest with good tasks and excellent organization, and to Wolfgang Thiele who developed our films patiently. Finally, thanks to Kathy for crewing again, and to those others that helped me with the chores around the plane. Having a great crew and lots of help made me more relaxed and allowed me to finally hand over my title of last place to someone else.

Mike Morgulis, SOSA

VIRTUAL TEMPERATURE

When flying under cumulus clouds and cloud streets, look for tendrils of cloud vapours that hang down below otherwise level cloudbases, because those are usually the areas where the updrafts are the strongest. Contrary to popular belief, the air in a typical thermal is only warmer than the surrounding air when it is near the surface of the ground. By the time that it reaches an altitude of roughly 1500 feet or so, sufficient additional surrounding air has been entrained into the initially warmer-than-the-surrounding-air thermal that it is cooled to about the same temperature as the surrounding air, and even less.

Why then does a thermal continue to rise? According to some, there are two basic reasons. One is that the vertical momentum of the thermal resists its slowing down, and the other is that the thermal usually contains more moisture than the surrounding air. The sun heats the surface features and causes extra surface moisture to be released as a vapour into the thermal when it forms. The addition of water vapour to a thermal not only increases its buoyancy, but it also increases its dew point. That often can lead to the formation of vapour condensation tendrils slightly before the thermal reaches the usual cloudbase. When they do form, the tendrils appear to hang down from the bases of cumuliform clouds, and that is usually a sign of strong lift.

The water vapour molecules are less dense than dry air molecules because they are made up from low density H₂O molecules (having an atomic weight of 18). These displace some of dry air's higher density N₂ (atomic weight of 28) and O₂ molecules (atomic weight of 32), thus adding buoyancy to the thermal.

The scientific term used in describing this water vapour effect of adding buoyancy to a thermal is called *virtual temperature*. That is, the temperature to which a completely dry air sample would have to be increased in order for it to have the same buoyancy as the moist air sample. That can amount to as much as 4-5°F, if the amount of moisture is relatively high.

from *Soaring*

KEEP YOUR GLIDER LIZARD-TIGHT!

For years I have lived and flown in Spain and both I did with great pleasure. Life is a lot easier and the thermals are much stronger on the Iberian Peninsula. In some aspects of airmanship however, the Spaniards are sometimes, ehhh ... bizarre!

For my first checkflight of the year at Campolara, I took seat in a Blanik with an instructor in the back. Just as we were airborne and approaching the end of the runway I heard a noise and out from somewhere under my seat jumped a lizard about two feet long from head to tail. The crea-

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ture jumped up and down the cockpit until after a few seconds it came to rest on the dashboard. From there, beak wide open, it stared (with a glance I interpreted as "hungry") right at my shorts, which gave me the very uncomfortable feeling that it wanted to jump right into them.

I consulted with my instructor — and the guy sounded pretty hysterical. I suggested that at the count of three, I would give it *una bofetada*, which means blow it away, either in his direction or to wherever it came from. In the meantime he would fly. So I counted: *uno, dos, tres*, and Bang!!! smashed the lizard. But at the same time the instructor gave a mighty jerk at the release handle.

Now this would not have been a problem if we would have had some altitude. But this all happened within less than 30 seconds and as he pulled the release, we were very low and off the cliff at the end of the runway with absolutely no landable area in front of us. That started the blood pumping.

I managed to do a 180 and make a downwind landing.

Now comes the cute Spanish part. As we had straightened out our miscommunication about what to do at the count of three, we aimed our anger at the owner of the school, Manolo, for not properly storing his gliders (he kept them parked outside all year long) and for not making a proper daily inspection (yes, he had heard something strange before in that Blanik). One would expect that the lizard would be removed immediately from the fuselage, right? Wrong. He stuffed every hole of the Blanik with old newspapers so the poor creature could not disturb pilots anymore (or come out to search for food). So it remained there for the rest of the season and died in there. It's probably the first (and hopefully last) lizard to have the fuselage of a Blanik for a coffin. Perhaps other pilots noticed that that particular Blanik was a little tough on the rudders or that it smelled a little strange on hot days. I did not stay to find out and moved to Fuentemilanos. It's a great place.

Hans Cuppen, from *rec.aviation.soaring*

club news

Using the up in Nova Scotia

Charles Yeates
Bluenose Soaring

AUTUMN SOARING over Nova Scotia's relatively flat countryside is mostly a desultory experience consisting of quite infrequent and generally weak thermal days, with height limits of three or four thousand feet, that are good for training, early solo flying and 'keeping current'. But there are exceptions.

Saturday, October 11. A classic cold front passed Friday night and we awoke on Saturday to a crystal clear sky, ground winds gusting 15 to 20 knots out of the northwest and an urge to go flying. A clutch of Bluenose (and blue-nosed?) pilots gathered at Stanley and set up the winch. A K7 first launched into a varied cumulus sky but returned as drift beat out its climbing rate. The next launch by the PW5 resulted in a long flight during which over three hours was spent VFR on top.

The initial cloudbase was reached using boiling air that exuberantly tested the Smyk's great agility and capability of tight turning at low speed. Cloud streets into wind were used to work against the 25 knot wind at the 3500 foot bases.

A half hour into the flight there was a mighty change. Thermals became more broken, irregular and inconsistently located relative to the clouds. Concentrating on staying up during the confusion, it took a while to realize that clouds had realigned in streets across the wind. All the cu were still whistling downwind but scraggly bits of new cloud were continually forming in the clear areas upwind and growing rapidly. We had seen this condition before while flying out of Keystone and during the second practise day before the Nationals at Rockton. Wave!

Entry into the wave involved climbing tightly to base under the cumulus closest to a clear area and then pushing forward toward the scraggly bits, slowing to minimum sink speed when clear of the cumulus. This produced an entry into glassy smooth air slightly above the newly-forming cloud. Four knots climb that gradually reduced to zero at 7000 made the brilliant fall foliage drop away and the brilliant reds, yellows, golds and fir green melded into a pretty background for the brilliant white cloud tops. Halifax International Terminal was obviously surprised to hear that glider N202HB was in the Stanley practise area *VFR on top* — but no problem.

An airspeed of 38 knots at 7000 netted a position suspended, seemingly motionless in space, not climbing, not descending and not moving over the ground. Western pilots will recognize this condition but they reach it downwind of the Rockies and at far greater altitudes.

Exploring upwind, converting altitude to the high speed needed to cross the next gap, we darted through the downside heavy sink, tight under the next cumulus and forward for a pull up in the next wave. This one was at the Bay of Fundy shoreline. While cogitating at the top once more, it seemed likely that the wave system was triggered by Cape Blomidon, fifteen kilometres away across nothing but water. Perhaps we were in the tertiary wave, but the secondary and primary would remain unexplored. Surfing sideways at the speed necessary to hold a position in the wave proved that it extended about eight kilometres before becoming ragged, choppy and useless.

As the afternoon passed the air became more stable, thermals weakened according to comments from the K7s below, but the wave strengthened a little. This enabled a final climb to 8000 before a necessary descent in time for easy derigging and return to the other life in Halifax. It was a giggle to advise Halifax Terminal that glider HB was out of 8000 feet descending for a landing at Stanley. He thanked me for keeping him advised. It was an exceptional fall day in Nova Scotia. ♦

WING RUNNER'S CHECKLIST

here's an idea based on the CISTRSC checklist

Controls Check to see that there are no control locks still in place, that the tail dolly has been removed, and that the control surfaces "look right". If the glider was assembled that day and you have not witnessed a positive control check, ask the pilot if he wants one.

Instruments Was the altimeter set to field elevation? Was the airspeed reading zero (or a reasonable value)?

Straps Do the straps look tight? If this is a two-seater with an empty back seat, are the back seat straps secured?

Trim and Ballast Is the glider ballast appropriate for the size of pilot/pasenger (assuming that you can see the ballast).

Release Is it the correct ring and does the weak link look acceptable?

Spoilers Did you witness (see and/or hear) the spoilers being locked? Are the tops of the spoilers flush with the top surface of the wing?

Canopy Did you witness the pilot securing the canopy? If you are familiar with the glider, and the canopy latch(es) are visible, are they in the correct position? Does the canopy seem to fit tight to the fuselage?

Howard Loewen

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SOLAIRE
CANADA

The Ontario XC Soaring Ladder – 1997 almost final results

Pilot	Club	Glider	Call Sign	No. Flts	Total km	Pts best 4	Place
Ian Spence	SOSA	ASW-24	WW	4	1759	1841	1
Karl Raufiesen	SOSA	Libelle	7G	6	1914	1606	2
Ian Grant	GGC	LS-4	ZT	5	1302	1341	3
Doug Bremner	SOSA	SZD-55	XT	6	1767	1298	4
Sue Eaves	LSS	LS-4	SU	5	979	824	5
Gilles Séguin	MSC	DG-200	GS	4	698	691	6
Dave Frank	RVSS	ASW-20	SR	1	355	334	7
Dan Cook	GGC	Std Jantar	DBW	1	74	76	8

The Ladder closes on 31 December. Send outstanding claims to Ian Grant, 41 Gillespie Crescent, Ottawa, ON K1V 0C1.

(The Alberta Ladder results are unchanged from the table in the last issue.)

† Walter Piercy

Walter, a most distinguished SAC member, died on 28 August 1997, having been in failing health for a few years.

I first met him in 1958 when I arrived late on a flight into Kingston. He was at the airport, and as a fellow glider pilot and member of the Queens Gliding Club, invited me to his home for the night. Coming to Montreal frequently on behalf of his company, we subsequently had supper together on many occasions.

Walter's major interest had been instructing. He became chairman of the SAC Instructors committee in 1964, and held the position until 1976. He spent a great deal of his spare time revising and rewriting the proposed SAC glider instruction manual. As a result of his effort, the MoT declared the new manual "approved for use in Canada". He ran the first SAC instructor training course in 1967 in Pendleton, the first western course in Red Deer in 1969, and continued to run courses until 1976. He was SAC president in 1966-67 and again in 1970 and 75. He was always ably supported by his wife Helen, who served as the SAC membership secretary from 1965-69. With his friend Hank Janzen, he was a driving force for the Queens (later Rideau) Gliding Club.

In the mid-60s he bought the Mu13 glider from MSC, badly in need of restoration, obtained drawings from Germany and built new wings. The glider continued its career in Canada and was sold into the USA, where it is preserved as an antique.

Walter's personal appeal was his enthusiasm, his most courteous manner, his sincerity and his consideration for others. For his services to Canadian gliding he was awarded the prestigious FAI Tissandier Diploma in 1972 and 1988, the SAC Ball & Chain trophy in 1968 and 1979, and with Helen, given a SAC honourary life membership in 1967. Our sympathy goes to Helen who supported and cared for him over the years.

Bob Gairns

JUNK!

Look into most gliding club hangars and you'll find piles of the stuff — propped up against walls, lying in corners, tucked away behind pillars and cupboards. Bits of old winches, batteries that will never spark again, old wheel rims, and unidentified bits of unknown aircraft.

Some clubs have seen sense and pushed all the scrap into its own shed, hidden away around back and out of sight. It is lovingly cared for and added to by the club hoarder (usually distinguished by his very greasy overalls that will never again come clean). Other clubs, however, do not seem to bother and proudly display their junk for all to see, in the meantime losing 15% of their hangar space. The worst offenders allow the spreading cancer to invade the field itself. It creeps out a bit at a time but once out, spreads quickly, scattering rusting relics of engineering and one time thingamajigs at random.

When we see something for the first time we immediately form an impression which is a powerful influence on all our subsequent opinions and recollections. Suppose a prospective member coming to your club is trying to decide between spending his hard earned cash and time on gliding or golf. He makes up his mind without even taking a flight — he doesn't want to spend his free time at a junkyard. If you think I am exaggerating, the next time you go to the club, pretend you are a complete stranger to the place and have a really hard look at what you are actually seeing.

There are exceptions to this scene, and when you come across them it is like a breath of fresh air. The moment you drive onto the field it is immediately apparent. You pass the neat clubhouse with its fresh paint and cut grass and stop in a level car park separated from the rest of the activity. There is no junk, no oxidizing piles of rubbish, it's tidy everywhere and the hangar houses only aircraft. There is an equipment shed alongside for the mower, tractor, etc. and they are clean. It's tidy and you can find things. Sadly, these clubs are rare. But why? It costs

very little and gains much. Let's face it, there are many days when the weather isn't good enough for flying, so rent a dumpster (a big one), send the club hoarder off on some wild goose chase, and purge the airfield of its detritus.

Graham McAndrew, Sailplane & Gliding

ON 1 APRIL, ALL OFFICIAL OBSERVERS WILL BE SHOT!

It's time once again for Senior OO's from each club (or an executive member of a club having no SOO position) to send me a list of your current Official Observers. SAC does this every three years to weed out the OO register, and the last time was in 1995. After 1 April, no FAI badge claim will be accepted from a pilot of a club which has not resubmitted to me a list of their current OO's. Do not wait until March.

Walter Weir, FAI Badge Chairman

LARK – EXTENSION TO THE 20 YEAR LIFE LIMIT

On 28 October, I had a meeting with the A/Chief of Continuing Airworthiness at Transport Canada to discuss the above.

There are nine gliders of these two types (IS-28B2 and IS-29D2) in Canada built in the years of 1977(3), 1978(2), 1979(2) and 1980(2). Normally, life extensions are initiated by the manufacturer, and then, the Authority of the country of manufacture issues an Airworthiness Directive stating the conditions to extend the life. In this case, the Romanian CAA has not done so.

I had asked TC in mid-summer to contact the Romanian CAA and find out if an AD was forthcoming. WGC had also requested their TC Regional office to determine the means for an extension. The reason for inaction on the part of the Romanians is not known, however, TCA has been working on the preparation of a Canadian AD that will extend the life subject to an inspection. TC is well aware of the very low flying time on these gliders and this will be taken in consideration in determining the inspection criteria.

The date of issue of the AD has not been determined, however it should be well before the start of 1998 flying season.

Paul Fortier
Chairman, Technical Committee

ESS GROUND SCHOOL

18 Feb to 22 April, Erin Soaring glider pilot ground school. Wednesday evenings 7:30 to 10:00 at the Terry Miller Recreation Centre, 1295 Williams Parkway, Bramalea, Ontario. Call Leo Reupert at (905)792-2181; e-mail LReupert@aol.com or register at the centre.

SAC news

SAC FALL DIRECTORS MEETING

Jim McCollum
SAC Executive Director

The SAC Board of Directors met at the end of October in Winnipeg. A wide variety of issues were covered: administration, membership, financial, sporting, the Aero Club of Canada and the FAI, regulatory issues, insurance, etc. This note provides a summary of some of the highlights.

Proposed schedule of events

AGMs, Edmonton (99), Montreal (00), Winnipeg (01) and Calgary (02). Fall Directors meetings, Halifax (98), others to be scheduled. January Directors meeting, currently not scheduled as an economy measure.

Nationals Pending acceptance by the clubs involved, it was proposed to switch the locations of the Nationals for 1998 and 1999. Winnipeg would oversee the 1998 Nationals in place of Champlain and Champlain would assume Winnipeg's spot in 1999. Winnipeg was concerned with conflicts with the 1999 Pan Am games, while Champlain is still in the process of upgrading the club facilities and would like to have these substantially complete before acting as host.

Director term limits With a view to encouraging wider involvement in the Association's affairs, it was proposed to ask for a change in the bylaws at the forthcoming AGM to limit a director's continuous tenure to five terms.

SAC committees Efforts are being made to streamline and modernize our committee structure, with a view to controlling costs and reducing demands on volunteer time.

- Richard Longhurst will contact Calvin Devries (GGC) to review our collection of historical material, which has been maintained by Christine Firth, with a view to having it stored at either the National Archives or the National Aviation Museum.

- The chairman of the Statistical committee reported that only a small percentage of clubs report club flying activity statistics, calling into question the meaningfulness of the selection criteria for the Roden Trophy. The criteria are to be changed and the trophy will be awarded to the club with the highest number of badge flights per member each year.

- In view of the increasing need to use radios, it was suggested that a blanket SAC license for radios might be useful and the Radio & Communications committee would be requested to explore this with Industry Canada. The committee would also be asked to examine the implications of installing transponders in gliders.

- Following discussions with Bernard Palfreeman, and with his concurrence, it was decided that it was no longer neces-

sary to maintain the Meteorology committee, although Bernie would continue to provide advice, as required, in this area.

- While the SAC Safety Review & Appeal Board (SRAB) has, thankfully, not needed to be active in recent years, it was agreed that it is useful to maintain this Board in place. There was some discussion of adding a lawyer to the SRAB and who could be asked to participate.

- Competition issues, particularly as they relate to participation in future World Air Games, received some attention and further consultation with the Sporting committee on this issue will occur.

Peter Corley Scholarship There was a brief discussion of how to refine the selection criteria to take fuller account of academic merit. Art Grant of the Winnipeg club has agreed to administer the scholarship and will be asked to review the criteria. An effort will be made to more widely publicize the scholarship to encourage more applicants. The scholarship currently has a value of \$2300. Future applications will go directly to Art.

Financial We are currently within the general budget parameters and are expected to remain so for the rest of the fiscal year. A modest surplus is expected, resulting in our eleventh year without a deficit. Dealing with Transport Canada and Nav Canada on a wide variety of issues such as airspace, service fees, medicals, etc. has absorbed a significant amount of SAC resources so far in 1997 (in volunteer and office time, travel and related expenses). The situation is not expected to change shortly. The BCSS and OSA graciously provided some supplementary financial support to SAC this year. SAC's financial situation was also underpinned by an increase in membership from 1996 as membership is at its highest level since 1991 (though much of this was concentrated in three clubs). Next year's budget is expected to have only minor refinements from 1997's, although it will need to recognize the requirement to deal with regulatory issues in a professional manner.

Aero Club of Canada and the FAI

At a recent meeting in October, the FAI members voted to increase the FAI's budget by 10%. Canada, along with the USA and some others voted against this, but the motion carried. SAC's position is that Canada's subscription to the FAI is too high, both in relation to a number of other countries and in relation to the benefits received, and that the FAI should be exploring other ways of raising revenues as well as containing costs. The FAI is placing too heavy a financial load on a small recreational aviation community that is struggling just to survive. At the domestic level, SAC would like to see the Aero Club broaden its revenue base and review the criteria for assessing its member associations. The Board is concerned that the Aero Club and FAI involve a considerable financial commitment by SAC, that this has increased significantly and that it is hampering our room to maneuver in other areas requiring urgent attention.

Regulatory issues The Airspace committee was recently bolstered with the addition of Roger Harris, a practising lawyer and academic with a specialty in airspace law. The SAC Steering and Airspace committees will be meeting before the end of the year to map out future plans. It was suggested that procedures be developed, involving SAC, Nav Canada and Transport Canada, to track and consult on airliner/glider conflicts so that we can address any issues before they escalate unreasonably.

The Canadian Aviation Regulatory Advisory Council (CARAC) has quickly become a major factor in our lives, offering opportunities and risks and also bringing with it associated costs. The recreational aviation community has difficulty in meeting the time and financial commitments that CARAC entails. It has meant a heavy burden on the clubs in the Ottawa area in terms of finding individuals to represent our interests, as well as strains on SAC's financial resources. There was no resolution on how

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richard.longhurst@mintzca.com

to better cope with the situation, although TC will be made aware of the downside of the CARAC process for recreational aviation and we will be discussing this with our member associations of the recreational aviation community.

Concern has been expressed about recent increases in user fees and the prospect for more of the same. It was suggested that the approach having the best chance of success in dealing with this issue might be to reduce the need for the fees, rather than simply complain about them. SAC will make representations to TC on how this objective might be advanced to our mutual advantage. It might, for example, involve SAC acting on behalf of TC in certain areas. This would not bring total relief from fees, for no other reason than it would involve increased demands on SAC resources, but it could help contain them. Consultation with other affected parties would need to occur prior to proceeding.

Insurance Richard Longhurst, chairman of the Insurance committee, suggested that there may be some advantages to putting the insurance year on a calendar year basis. He noted that under the current arrangements it was difficult to have an agreement in place prior to the AGM. The current arrangement also entails some difficulties for those members who wish to have an early start to the season by flying their gliders in the United States. Directors expressed concern that some clubs were not placing adequate liability insurance on two-place gliders. A requirement of \$1 million per seat will be introduced, with a recommendation that an overall level of \$3 million be considered. Concern was also expressed that not all clubs are forwarding insurance premiums or informing SAC of new and re-

SSA calendar photo
not available for pdf file

The SAC National Office now has in stock the wall calendar of the Soaring Society of America. SAC is able to offer it for a slightly reduced price over last year – the 1998 calendar is \$16 + \$4 p&h.

► If clubs bulk order (minimum 10 calendars),
the postage and handling is FREE

newed members in a timely manner, and that this could expose the club, its officers and members, and SAC to unacceptable insurance risks. The chairman will publish an article in *free flight* on insurance issues, as well as contact the clubs regarding the committee's concerns in this area.

SAC and the Internet SAC's Internet strategy was reviewed. It was noted that progress

in this area suffered a serious setback by Richard Officer's untimely death and Bob Macpherson's illness. Bob has developed a new look for the SAC homepage, but complications following his illness have delayed its implementation. Nevertheless, a number of projects are in the development stage and Susan Snell of the Winnipeg club and Jean Richard of CVVQ, among others, have kindly volunteered to assist SAC. ♦

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Glenn Lockhard

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FAI badges

Walter Weir

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(905) 263-4374 email waltweir@inforamp.net

The following badge legs were recorded in the Canadian Soaring Register during the period 5 September – 3 November.

GOLD BADGE		SILVER BADGE		
282 Bryan Florence	Regina	889 Alex Scirevici	SOSA	
		890 Bryan Florence	Regina	
		891 Peter Plant	Air Sailing	
DIAMOND DISTANCE (500 km)				
Ian Grant	Gatineau	504.5 km	LS-4	Pendleton, ON
DIAMOND GOAL & GOLD DISTANCE (300 km)				
Bob Leger	COSA	318.8 km	Cobra 15	Omemee, ON
Bryan Florence	Regina	303.9 km	Open Cirrus	Invermere, BC
Bryan Deans	Vancouver	303.9 km	Astir CS77	Invermere, BC
SILVER DISTANCE (50 km)				
Alex Scirevici	SOSA	62.7 km	1-26	Rockton, ON
Peter Plant	Air Sailing	62.7 km	Discus B	Belwood, ON
SILVER ALTITUDE (1000 m gain)				
Alex Scirevici	SOSA	1160 m	1-26	Rockton, ON
Dave Chamberlain	Regina	2100 m	Open Cirrus	Invermere, BC
Alex Rudy	SOSA	1220 m	1-26	Rockton, ON
SILVER DURATION (5 hours)				
Alex Scirevici	SOSA	5:09 h	1-26	Rockton, ON
Bryan Florence	Regina	5:14 h	Open Cirrus	Invermere, BC
Dave Chamberlain	Regina	5:22 h	Open Cirrus	Invermere, BC
Jan Mensink	Vancouver	5:40 h	Astir CS77	Invermere, BC
Martin Vanstone	Vancouver	5:43 h	Astir CS77	Invermere, BC
Peter Chanachowicz	SOSA	6:40 h	Grob 103	Rockton, ON
C BADGE (1 hour flight)				
2564 Rosemary McCallum	York	1:09 h	1-23	Arthur East, ON
2565 Kurt Pfeiffer	Pemberton	1:10 h	L-13	Pemberton, BC
2566 Alex Scirevici	SOSA	5:09 h	1-26	Rockton, ON
2567 Heinz Kaun	Beaver Valley	1:10 h	L-13	Meaford, ON
2568 Brian Galka	Saskatoon	1:23 h	L-13	Cudworth, SK
2569 Fred Deveaux	Vancouver	1:10 h	L-23	Hope, BC
2570 Heinz Ritter	Montreal	2:10 h	Krosno	Hawkesbury, ON

Amendment List #1 to Badge & Record Flying, ed 7

The amendments to the SAC OO and pilot's guide to badge and record flying are printed here to ensure that persons holding current copies get the information. Photocopy the following three pages for inclusion in your guide. New copies of the guide will incorporate all changes as will related SAC forms. The changes arise from the 1 Oct 97 amendment list to the FAI Sporting Code (AL5). The main changes to the Code are:

- Deletion of the "up to 10 km away" rule for start and finish points on goal flights.
- Record classes have been completely reorganized.
- Annex B (GPS evidence requirements) has been rewritten and the technical requirements for manufacturers have been removed and placed in a separate document.
- Existing, stand-alone GPS flight data recorders which plug into GPS units by cable may now be used for badge flights. (These FRs still have to be approved by the IGC.)

Note: the Sporting Code and all its annexes are available at the FAI website (http://www.fai.org/~fai/sporting_code/sc3.html) and can be viewed directly or downloaded as WordPerfect and ASCII files. SAC will no longer hold hard copies of the Code.

=====

Page changes: page 4, Table 2 (cut out and paste over existing table), Appendix J.

General following the new Sporting Code usage, wherever you see the word "departure", read now as "start" (if you choose not to mess up the guide with a lot of penmanship). Otherwise, changes to be made at: 3.4d line 4, 3.7d line 4, 3.15b/d/e, 5.5 lines 1/9/20, 7.1b, 7.4b, 12.1, 15.4e, 17.6, 18.1 line 8, 18.6 lines 3/6, 18.7 line 2, App H, App L intro para and 4b & 5a.

SAC SUPPLIES FOR CERTIFICATES AND BADGES

1 FAI 'A' badge, silver plate pin	\$ 6.00
2 FAI 'B' badge, silver plate pin	\$ 6.00
3 SAC BRONZE badge pin (<i>available from your club</i>)	(12 for \$55) \$ 6.00
4 FAI 'C' badge, cloth, 3" dia.	\$ 6.00
5 FAI SILVER badge, cloth 3" dia.	\$12.00
6 FAI GOLD badge, cloth 3" dia.	\$12.00
7 FAI 'C' badge, silver plate pin	\$ 5.00
8 FAI SILVER badge, pin	\$45.00
9 FAI GOLD badge, gold plate pin	\$45.00
<i>Items 4-12 ordered through FAI awards chairman</i>	
<i>Items 10, 11 not stocked – external purchase approval given</i>	
10 FAI GOLD badge 10k or 14k pin	
11 FAI DIAMOND badge, 10k or 14k pin and diamonds	
12 FAI Gliding Certificate (personal record of badge achievements)	\$10.00
Processing fee for each FAI application form submitted	\$15.00
13 FAI badge application form (<i>also stocked by club</i>)	n/c
14 Official Observer application form (<i>also stocked by club</i>)	n/c
15 SAC Flight Trophies application form (<i>also stocked by club</i>)	n/c
16 FAI Records application form	n/c
17 Flight Declaration form (<i>also stocked by club</i>) per sheet	n/c
18 Badge & Record Flying, ed. 7	\$ 6.00

Please enclose payment with order; price includes postage. GST not required. Ontario residents, add 8% sales tax. Items 1-6 and 13-19 available from SAC National Office. Check with your club first if you are looking for forms.

ARTICLES ACVV POUR CERTIFICATS ET INSIGNES

Insigne FAI 'A', plaqué argent
Insigne FAI 'B', plaqué argent
Insigne ACVV BRONZE (<i>disponible au club</i>)
Insigne FAI 'C', écusson de tissu, 3" dia.
Insigne FAI ARGENT, écusson de tissu, 3" dia.
Insigne FAI OR, écusson de tissu, 3" dia.
Insigne FAI 'C', plaqué argent
Insigne FAI ARGENT
Insigne FAI OR, plaqué or
<i>Les articles 4-12 sont disponibles au président des prix de la FAI</i>
<i>Les articles 10, 11 ne sont pas en stock – permis d'achat externe</i>
Insigne FAI OR, 10k ou 14k
Insigne FAI DIAMOND, 10k ou 14k et diamands
Certificat FAI de vol à voile (recueil des insignes)
Frais de services pour chaque formulaire de demande soumis
Formulaire de demande pour insignes (<i>aussi disponible au club</i>)
Formulaire de demande pour observateur officiel (<i>aussi disponible au club</i>)
Formulaire de demande pour trophées de vol de l'ACCV (<i>aussi disp. au club</i>)
Formulaire de demande pour records FAI
Formulaire de déclaration de vol par feuille (<i>aussi disponible au club</i>)
Vol pour certificats et insignes, éd.7 (anglais seulement)

Votre paiement devrait accompagner la commande. La livraison est incluse dans le prix. TPS n'est pas requise. Les résidents de l'Ontario sont priés d'ajouter la taxe de 8%. Les articles 1-6 et 13-19 sont disponibles au bureau national de l'ACVV.

SAC National Office, 101 – 1090 Ambleside Drive, Ottawa, ON K2B 8G7 tel (613) 829-0536 • fax (613) 829-9497 • email sac@comnet.ca

Handwritten changes: Please annotate the text margin with (A1) at the end of each amended paragraph.

- i on amendment 1 line, add "A1 (SC AL#5 changes)" and current date
- 1.6 Last sentence to read, "Changes to this text as a result of amendments are marked with an "(A#)" reference at the end of the text line."
- 3.7b change 3.14 to 3.13
- 6.1 delete second paragraph
- 6.2, 6.3 delete and paste over with the new paras cut out of box at right.
- 11.1 para 2, lines 4/5 to read "... a calibration made within one year before or one month after the flight. ..."
- 17.2a last line: "goal, and 300 & 500 km O&R speed records."
- 17.3 delete entire "Note" paragraph.
- 18.1 line 5, change [5.5.3.1] to [5.4]
- App L** intro para: change AL₄ to AL₅
- Q4 change 1.5.3a&c to 1.5.3.1 &.3
- Q4 delete "3.12"
- Q5 delete "3.12"
- Q16 delete all and replace Q17 within box above right:
(a, b, and c answers remain)
- Q21 change 3.2.1.3 to 3.2.1
- Q24 change 3.2.1.1 to 3.2.2.1
- Q25 delete "a&c" from 2.3.3.5.3a&c
- Q36 change a) yes to "no", change b) no to "yes"
change 1.5.3a/1.8.7 to 1.4.2
- Q38 change 3.9.b to 3.9.b / 3.15b

App L answers: delete 16

17 George declared the task shown on the left: club to A, to B, to C, and return: total distance – 325 km.
He instead flew from the club to C, to A, then home for 302 km.

6.2 The International Gliding Commission (IGC) will list approved GPS flight data recording (FR) equipment for position evidence for record and badge flights as hardware becomes available and passes IGC evaluation. For record flights, FR equipment which is integrated with the GPS as a single unit must be used. For badge flights up to and including Diamond legs, separate FR units (having a lower level of security) which are connected to the GPS unit by a cable may be used. (A1)

6.3 Annex B to the FAI Sporting Code details the use of Global Navigation Satellite Systems in sailplane flight verification. This Annex is available on the FAI web site (see 1.4). (A1)

Record Type	Recognition	Remarks
DISTANCE		<i>exceed by 10 km</i> no declaration, no turnpoints declared, no turnpoints declared declared may include up to 3 declared TPs declared, no TP list req'd
Straight distance	FAI 3.2.5.1	
Straight distance to goal	FAI 3.2.5.2	
Out and return distance	FAI 3.2.5.3	
Triangular distance	FAI 3.2.5.4	
Three TP distance	FAI 3.2.5.5	
Free out and return distance	FAI 3.2.5.6	
SPEED – Triangular course FAI 3.2.5.7		<i>exceed by 2 km/h</i> all courses declared
100 km	SAC only	
200 km	SAC only	
300 km	SAC only	
400 km		
500 km		
750 km		
1000, 1250, 1500, 2000 km		
SPEED – Out and Return	FAI 3.2.5.8	<i>exceed by 2 km/h</i> all courses declared
300 km	SAC only	
500 km	SAC only	
750 km	SAC only	
1000, 1500, 2000 km		
ALTITUDE		<i>exceed by 3%</i>
Gain of height	FAI 3.2.5.9	
Absolute altitude	FAI 3.2.5.10	
SPEED to Goal	SAC only	<i>exceed by 2 km/h</i> all courses declared, may be the first leg of a triangle or O&R course on a badge or FAI record attempt
100 km		
200 km		
300 km		
400 km		
500 km		
750 km		
1000 km		

- b) A gain of height of at least **3000 m** (9842 feet).
- c) A free distance flight of at least **300** kilometres (see paragraph 3.15).

3.9 Diamonds

Accomplishing the following three tasks give the holder of a Silver or Gold badge the right to add one diamond to the badge for each task completed:

- a) **Diamond height** A gain of height of at least **5000** metres (16,404 feet).
- b) **Diamond goal** A goal flight of at least 300 kilometres around an out and return or triangular course with all declared turnpoints flown in the declared sequence.
- c) **Diamond distance** A free distance flight of at least **500 km** (see para 3.15).

3.10 1000 & 2000 km diplomas

These diplomas are awarded by the FAI for achieving any distance flight of more than 1000 and 2000 kilometres. The notes in paragraph 3.15 also apply.

3.11 Start point [1.5.3]

This is the point of release from tow, or the crossing of a start line (normally only used for speed record attempts or in competitions), or a remote start point. If a point other than the release point is intended to be the start point, then a photo must be taken of this declared point within the observation zone (as defined in paragraph 7.1b). Whenever the release point is used as the start point, the towpilot must sign a certificate describing the release point. If this person is not an OO, this certificate must be countersigned by an OO. The OO need not have personally observed the release, but must be satisfied with the accuracy of the certificate data.

3.12 Finish point [1.8.3]

A finish point is the landing place, or the crossing of a finish line (normally only used for speed record attempts or in competitions), or a remote finish point.

3.13 Declared flights [2.3.1]

If a flight uses a remote start or finish point and/or turnpoints, a declaration must be completed prior to takeoff or the data entered into the GPS flight recorder. The distance achieved is measured from the declared start point, around any required or optional turnpoints (each of which may only be used once), to the declared finish point (being either the

landing point or a remote finish point). Some points need stressing:

- a) Only *one* flight course may be declared for any flight. (In a contest, the official task of the day may be taken as the flight declaration.) If you want to change the declaration you have to land; however, you always have the option of abandoning the declared task while airborne, and the resulting free distance achieved is measured as in paragraph 3.15b.
- b) When a remote finish point has been declared to complete the distance requirements of a badge or record, the flight and badge leg is *complete and finished* on properly photographing this point. Anywhere the pilot may fly following that has no effect on the achieved declared flight. The pilot has the option of continuing onwards to increase the free distance achieved, perhaps earning the distance leg of a higher badge, or of heading home to minimize any retrieve.
- c) The planned landing point or terrain considerations may suggest a flight using a remote starting point. If a good finish point from which a club can aeroretrieve its 1–26 is 40 kilometres downwind, it makes sense to choose a remote start point 10 kilometres upwind for the declared flight. Poor morning soaring conditions or unlandable terrain in the vicinity of the takeoff airfield may make a tow to a more thermally active or forgiving start point a wise decision. If the pilot is towed to and released at such a start point, no photo is required.

3.14 Claim everything achieved

(A1)

Any completed portion of a declared flight which satisfies the requirements of a shorter badge or record flight may be claimed. For example:

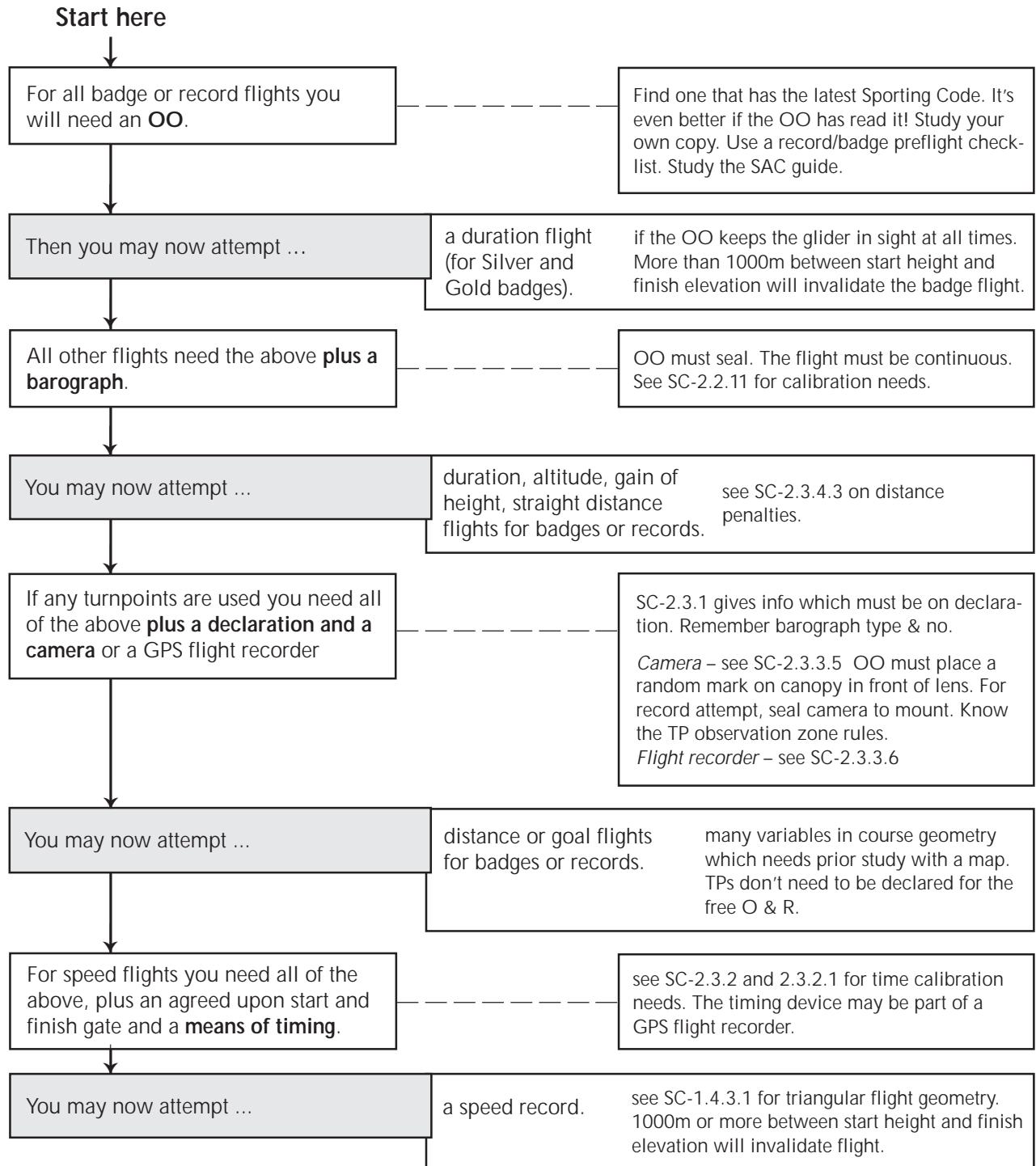
- a completed leg of over 50 km satisfies the Silver distance (see 3.7c),
- the first completed leg may qualify for a Speed to goal record (see 17.2b),
- a Diamond goal flight course may lie within a completed polygon flight of over 300 kilometres if one of the turnpoints is disregarded (see Appendix L, question 38).

3.15 Three TP (free) distance [1.3.1.1]

(A1)

This task gives the pilot a lot of courseline choice. The essence of the free distance flight is that the fin

So you want to attempt a badge or record flight?



Get a landing certificate signed by OO or two witnesses. Photograph glider (showing tail registration) in field, rephotograph declaration with a landing time on it. Note that record and badge flights have different forms. Study the SAC guidebook on FAI procedures for badge and record flying.

rev Oct 97

SAC Inventory reduction sale

good prices on just a handful of leftover sizes – order quickly

1 SAC T-shirt • navy with gold & white crest, M	\$15 now \$8	ACVV T-shirt • bleu marin avec un écusson, M
2 SAC 50th Anniversary sweat shirt, large	\$25 now \$15	ACVV sweat shirt, 50 ^e Anniversaire, Gros
3 SAC golf shirt • navy, medium large	\$25 now \$15 \$25 now \$19	ACVV chemise de golf • bleue marine, Medium Gros
4 SAC sweat shirt • navy, medium large	\$25 now \$15 \$25 now \$20	ACVV sweat shirt • bleu marin, Medium Gros
5 SAC hooded sweat shirt • navy, medium	\$35 now \$20	ACVV sweat shirt à capuchon • bleu marin, M
6 SAC Cap • black with white "SAC"	\$12 now \$6	ACVV chapeau • noir avec blanc "ACVV"

see page 26 for relevant taxes and other ordering information

Contest flying for fun & profit

der of the 'good' pilots became such by picking the brains of the better ones, mixing with them, watching what they do and where they go. Their bookcases probably have significantly more gliding books on them than most other pilots. They are not content to fly the same local beats and are keen to try new things and fly from other airstrips, and more importantly, *they attend contests*.

Imagine if we had a national training venue where everything is laid on, where instructors outnumber students, where hundreds of years of collective knowledge is available for the asking, towpilots fight over who gets to launch you and, even with your fingers in your ears, you go home twice as knowledgeable as you were when you arrived. These venues do exist and take the form of our [provincial] and national contests. The common myth is that you have

from page 11

to be a pretty good pilot to consider entering the serious world of contests and that there is no room for learners. On the contrary, you may be surprised to discover that unless you pose a threat to them winning the contest, any of the 'good' pilots will be only too willing to help you. The only proviso I would offer is to pick your time and not disturb them when they are preparing their glider, attending briefing or getting in a bit of quality time with their family. Additionally, you may get a better result if you think out some of your questions first.

For those pilots who don't have access to a glider for their sole use in a contest, a very useful option is to form a group, borrow the club two-seater, find an experienced contest pilot to fly as P1 and take turns each day in the second seat. Even if you don't want to enter a contest, there is much to be learned simply by being in the environment,

observing and rubbing shoulders with the 'good' pilots. There are always spare two-seaters about at these venues and you can attend briefings and try a task or two yourself on the side.

Contests provide a well organized environment where there is always at least one or more pilots who can answer any question you care to ask. Besides that, there is always an entertaining social side to these events and it also makes the magazine stories come alive if you can put faces to those famous names.

So if you are happy to stooge about your local site and amass time airborne then there's nothing wrong with that, but you are not going to learn much very fast. If you really want to justify your already significant investment in the sport, then attend or enter a contest — you will wonder why you didn't do it years ago — think about it. ♦

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LX-5000	The ultimate GPS/final glide computer system with moving map display and FAI data recorder	\$5495



SAC SOARING STUFF / ARTICLES DE L'AIR

Dec 1997

	Price Prix	Size Taille	Qty Qté	Amount Total	T ax	
1 "SAC University" T-shirt • various colours specify size – M, L, XL	15.00				✓	T-shirt "l'université de l'ACVV" • couleurs diverses précisez la taille – M, G, XG
2 SAC T– shirt • navy with gold and white crest specify size – M only remaining	15.00				✓	ACVV T– shirt • bleu marin avec un écusson or et blanc, précisez la taille – M
3 SAC golf shirt • navy specify size – M, L, XL	25.00				✓	ACVV chemise de golf • bleue marine précisez la taille – M, G, XG
4 SAC sweat shirt • navy specify size – M, L, XL	25.00				✓	ACVV sweat shirt • bleu marin précisez la taille – M, G, XG
5 SAC hooded sweat shirt • navy specify size – M, L, XL	35.00				✓	ACVV sweat shirt à capuchon • bleu marin précisez la taille – M, G, XG
6 SAC Beanie • white with blue gliders	12.00				✓	ACVV chapeau • blanc avec des planeurs bleus
7 SAC tie • blue with white gliders	26.00				✓	ACVV cravate • bleu avec des planeurs blancs
8 SAC bow tie • blue with white gliders	24.00				✓	Noeud papillon • bleu avec des planeurs blancs
9 Bumper sticker "I'D RATHER BE SOARING"	2.00				✓	Auto collant "I'D RATHER BE SOARING"
10 SAC pen, blue or burgundy with glider	7.50				✓	ACVV style bille • bleu ou bourgogne avec planeur
11 Tost ring (4 for \$100)	28.00				✓	Anneau de remorquage Tost (4 pour \$100)
Books from international authors						Livres des auteurs internationaux
20 <i>SOARING CROSS–COUNTRY</i> – ed. 2 Helmut Reichmann	58.00					<i>SOARING CROSS–COUNTRY</i> – ed. 2 Helmut Reichmann
21 <i>FLYING SAILPLANES</i> • Helmut Reichmann	40.00					<i>FLYING SAILPLANES</i> • Helmut Reichmann
22 <i>SILENCE ON THE WIND</i> • Helmut Reichmann	45.00					<i>SILENCE ON THE WIND</i> • Helmut Reichmann
23 <i>SOARING WITH THE SCHWEIZERS</i> Bill Schweizer	30.00					<i>SOARING WITH THE SCHWEIZERS</i> Bill Schweizer
24 <i>UNDERSTANDING GLIDING</i> • D Piggott (autog.)	40.00					<i>UNDERSTANDING GLIDING</i> • Derek Piggott
25 <i>THE BOOK OF THE BEST</i> • Ursula Wiese	10.00					<i>THE BOOK OF THE BEST</i> • Ursula Wiese
26 <i>SOARING ACCIDENTS THAT ALMOST HAPPENED</i> • Steve Dupont	12.00					<i>SOARING ACCIDENTS THAT ALMOST HAPPENED</i> • Steve Dupont
27 <i>SOARING METEOROLOGY FOR FORECASTERS</i> • SSA	16.00					<i>SOARING METEOROLOGY FOR FORECASTERS</i> • SSA
28 <i>WINNING ON THE WIND</i> • George Moffat	3.50					<i>WINNING ON THE WIND</i> • George Moffat
29 <i>SOAR SIERRA</i> • Jon Joss	3.50					<i>SOAR SIERRA</i> • Jon Joss
30 <i>FROM THE GROUND UP</i> , ed 27 • Isabel Peppler expanded & revised	32.00					<i>FROM THE GROUND UP</i> , ed 27 • Isabel Peppler
SAC crests, pins, cards						Ecussons et épingles de l'ACVV
40 Crest "SAC•ACVV", embroidered	3.50				✓	Ecusson "SAC•ACVV", brodé
41 "SAC" lapel pin	5.00				✓	Épingle "SAC"
42 Lapel pin • Glider	10.00				✓	Épingle • Planeur
43 Postcards (set of 5 sailplane photographs)	1.25 (25 for \$5)				✓	Cinq cartes postales (photos des planeurs)
44 Wall calendar, SSA	16.00				✓	Calendrier mural, SSA

✿ any change to last flyer

continued on other side — voir au verso

	Price Prix	Size Taille	Qty Qté	Amount Total	T a x	
Manuals and flying aids						Manuels et accessoires de vol
50 Glider pilot logbook (box of 22 for \$199)	10.00				✓	Carnet de vol pour pilote de planeur (boîte de 22 pour \$199)
51 Student progress book (10 for \$30)	4.00					Carnet de vol d'entraînement de l'élève pilote (français) (10 pour \$30)
52 French instruction manual	6.00					Manuel d'instructions de vol à voile rev. jan 80 (français)
53 <i>SOAR AND LEARN TO FLY GLIDERS</i> ed. 1993	19.95					Revision française en préparation
54 Air instruction notes (for instructors) (10 for \$40)	5.00					Instructions en vol – notes (pour instructeurs) (français) (10 pour \$40)
55 <i>Badge & Record Flying • edition 7</i>	6.00	(5 for \$25)			✓	<i>Certificats et insignes, édition 7 (anglais)</i>
56 CISTRSC (green) / SWAFT (red) cockpit checklist (12 for \$12)	1.50	set			✓	CISTRSC (vert) / SWAFT (rouge) liste de vérification (12 pour \$12)
57 <i>AWARE • Gagnon et al (weather manual)</i> (5 for \$40)	10.00					<i>MÉTAVI • Gagnon et al (manuel de la</i> <i>météo) (français)</i>
58 Medical Facts for Pilots (10 for \$50)	6.25					Facteurs médicaux à l'attention des pilotes (français) (10 pour \$50)
FAI supplies • certificates, badges	see page 19 for complete list					Articles FAI • certificats / insignes
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2 FAI 'B' badge, silver plate pin	6.00				✓	Insigne FAI 'B', plaqué argent
3 SAC Bronze badge, pin (available from your club) (12 for \$55)	6.00				✓	Insigne ACVV bronze (disponible au club) (12 pour \$55)
4 FAI 'C' badge, cloth, 3" dia.	6.00				✓	Insigne FAI 'C', écusson de tissu, 3" dia.
5 FAI Silver badge, cloth, 3" dia.	12.00				✓	Insigne FAI argent, écusson de tissu, 3" dia.
6 FAI Gold badge, cloth, 3" dia.	12.00				✓	Insigne FAI or, écusson de tissu, 3" dia.
7 Flight Declaration form (available from your club)	nc				✓	Formulaire de déclaration de vol (disponible au club)

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Skylark 3D, 18 m, vg condition, basic instruments, chute, trailer (needs work). \$5500. Barry Usprech (519) 273-3451 (day).

K-8B, C-FZKQ, vg cond, Imron paint, radio, encl trailer. \$9000. Contact Ralph Webber (519) 337-2042, Fritz Schreiner (519) 542-2204.

K-8B, C-FROP, enclosed trailer. Eric Durance (519) 969-7889, Kurt Moser (eves only) (519) 472-8876.

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Ka6CR, CF-GXF, '68, a John Kuhn trailer, encl cond, chute, O₂, Libelle ballast bags. Eric Durance (519) 969-7889.

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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.

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two seat

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