

# free flight • vol libre

2/99  
Apr/May





I had the pleasure of participating in two Canadian soaring events in the space of ten days. The SAC AGM took place in Edmonton, organized by a group of people from the Edmonton Soaring Club under the leadership of John Broomhall. Over 40 people participated, not bad for a somewhat remote (at least for us Easterners) location. I will say again, however, that the whole AGM convention has to be reconsidered. I believe that the current format has run its course and needs to be changed. The convention has to focus on the fun part of the sport, and the annual report is not one to generate much adrenalin from anybody. In this day of electronic communications, most issues are dealt with as they happen. Not surprising then that the CAS cross-country seminar drew 104 people in Hawkesbury on a snowy Saturday. In passing, my compliments to Svein Hubinette and his spouse for putting that day together. So for next year in Montréal, coupling the AGM with an all-soaring cross-country seminar is a very viable option.

We should look also at doing something a bit different from time to time. How about having the SAC annual meeting at the same location as the SSA (Soaring Society of America) convention? Being in the sunny south is something we can sell to our significant other, don't you think? The SSA convention features lots of seminars, trade show etc. Those who have attended tell me that it is a worthwhile event. I would love to hear from all of you on that topic through the SAC Roundtable.

Our accident record remains a very big concern. I challenge all clubs to put together training programs for all pilots. We need to bring this issue under control. Currently, getting quotes for our business is a "one horse race". I am concerned that, if the current situation is allowed to continue, we will have a "no horse race"!

The Board has mandated the chairman of the Flight Training & Safety committee to undergo a major restructuring of that committee. The committee will be formed of a chairperson and three coordinators of three subcommittees. These subcommittees are:

- Instructor's course director group* These are the people teaching people how to instruct.
- The safety advisor group* These will coach the clubs in improving their safety procedures.
- The instructional material group* These will review instructional materials (like *SOAR*) on an ongoing basis.

Our objective is to give better and faster service to our members while not over-committing anyone. Volunteer work for SAC has to be fun, not overbearing! Our vision is that the FT&SC will become a most visible part of SAC. Once the restructuring is a *fait accompli* and a working concern, it will be our challenge to add more training opportunities for all segments of SAC.

Finally, I want to inform all of you that I am starting my last term as president of SAC. I believe in contribution and change. I believe that when you start contributing in an organization, you are part of a solution. When you stay too long, you become the problem. It is to insure this continuous change that we modified, last year, SAC bylaws to limit SAC director's time in service to ten years. The culture of the current Board is different then what it was eight years ago. We moved from a model where directors were mostly "representing" the members of a defined geographical zone to a working board, supplementing the efforts of our executive director. E-mail, among other changes, made it possible with a reasonable amount of effort. We have people who understand the complex ramifications of managing an organization like SAC. There will be no void when I stand down next March.

Je commence mon cinquième et dernier mandat comme directeur de la zone Québec. Ce mandat se terminera en Mars 2000. En 1999, j'ai accepté, à la demande de mes collègues du conseil d'administration, d'assumer la présidence cette année encore. J'ai cependant fait bien comprendre que cette année sera la dernière. Lors de la dernière année de mon mandat de directeur, déchargé de cette lourde tâche, je vais travailler à assurer que des volontaires voudront prendre la succession. Nous avons besoin d'un organisation nationale forte. C'est de notre intérêt à tous de participer et d'y contribuer.

*Pierre Pepin* president

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## Cover

Retrieving Dick Mamini's ASW-12 out of the short grass prairie country north of Cowley during the '98 summer camp. Dick stayed out overnight and the adventure involved getting a GPS fix on him from a towplane and some serious 4-wheel drive work with the trailer to reach into an area which is normally off-limits to vehicles.

Photo: Dave Bradley



# 1999 Canadian World Team

Ron Walker, Gatineau

This August a group of Canadian glider pilots is heading for Bayreuth, Germany, and they won't even think about the world famous Opera festival held there every year. Instead, they hope that their electric variometers will be singing their hearts out in the skys above Bayreuth.

Plans are well underway for the team to participate at this World Championship. Flying for the team this year will be Ed Hollestelle in the Standard class and Nick Bonnière and Ulli Werneburg in the 15m class. Ed will be flying a new LS-8, while Nick and Ulli will be in ASW-27s. This means that they will be competing in completely up-to-date equipment which should help their chances for good results. Other team members will include Ed's wife Annemarie, Christine Futter of Ottawa, Ron Walker of Nepean, ON and Udo Rumpf of Brighton, ON.

Ed participated in the pre-Worlds last year and is therefore quite familiar with the terrain. Basically, the country around Bayreuth has a pleasant rolling character with medium sized hills and lots of landing fields. Some tasks may extend into the Czech Republic which has quite similar terrain. Nick should find the country somewhat less challenging than the mountainous environment of his last championship in St. Auban, France. Ulli will feel right at home, being a native of Germany and having flown there for Canada in the 1981 World Championships at Paderborn, finishing 11<sup>th</sup> overall in the 15m class.

Nick and Ulli, both members of the Gatineau Gliding Club, have also been polishing their team flying over the last couple of years. Team flying has become an important aspect of world championship flying and our two 15m class pilots have practiced this extensively, flying close to 4000 kilometres together last year alone.

The team has been fortunate to attract a number of corporate sponsors, including HAKMET Corporation of Dorion, Quebec, KyberPASS Corporation of Nepean, Ontario, High Roads Communications of Ottawa, and Air Canada. However, with total costs running at around \$45,000 the team can certainly use additional help from any and all sources.

The team is beginning to attract media attention. Various initiatives, under the leadership of team member Ron Walker, have had very positive results. The *Discovery Channel* is planning to film a one hour program about the team and gliding in Canada. A camera crew will follow the team to Germany in order to catch the action on the spot. *COPA News* has already run a feature article on the team and the *Canadian Business Magazine* will also do a story on the team and our sport in Canada.

It is clear that this event could be the catalyst for all sorts of benefits to soaring in Canada. Through our association with corporations we hope to sign up a major sponsor for other soaring events in Canada, including the national and provincial championships and the seminars, clinics and other flying events being put on by Canadian Advanced Soaring.

Competition is normally the peak activity in any sport. Through its national team, Canadian gliding is represented in the whole world and this gives us a chance to put our best foot forward. Please support the team so that even the opera singers in Bayreuth will admire the exciting tones of our pilots' variometers! ❖



## The SOARING ASSOCIATION of CANADA

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

*free flight* is the official journal of SAC.

Material published in *free flight* is contributed by individuals or clubs for the enjoyment of Canadian soaring enthusiasts. The accuracy of the material is the responsibility of the contributor. No payment is offered for submitted material. All individuals and clubs are invited to contribute articles, reports, club activities, and photos of soaring interest. An e-mail in any common word processing format is welcome (preferably as a text file), or send a fax. All material is subject to editing to the space requirements and the quality standards of the magazine.

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 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 SAC office at the address below.

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Deadline for contributions:

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## L'ASSOCIATION CANADIENNE DE VOL À VOILE

est une organisation à but non lucratif formée d'enthousiastes et vouée à l'essor de cette activité sous toutes ses formes, sur le plan national et international. L'association est membre de l'Aéro Club du Canada (ACC), qui représente le Canada au sein de la Fédération Aéronautique Internationale (FAI), laquelle est responsable des sports aériens à l'échelle mondiale et formée des aéro-clubs nationaux. L'ACC a confié à l'ACVV la supervision des activités vélivoles aux normes de la FAI, telles les tentatives de record, la sanction des compétitions, la délivrance des insignes, et la sélection des membres de l'équipe nationale aux compétitions mondiales.

**vol libre** est le journal officiel de l'ACVV.

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

Des photos en couleurs ou noir et blanc seront appréciées, mais s'il vous plaît, pas de négatifs ni de diapositives.

*vol libre* sert aussi de forum et on y publiera les lettres des lecteurs selon l'espace disponible. Leur contenu ne saurait engager la responsabilité du magazine, ni celle de l'association. Toute personne qui désire faire des représentations sur un sujet précis auprès de l'ACVV devra s'adresser au directeur régional, dont le nom et l'adresse sont publiés dans le magazine.

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

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## Will freezing club membership increase it?

I would like to comment on Pierre Pepin's editorial in the Feb/Mar 99 *free flight*.

Boosting the popularity of soaring and the size of club rosters is a preoccupation for many clubs, their executive, and glider pilots in general. The reasoning is that more pilots means growth — bigger numbers, more income for clubs and our national association, more clout within the aviation community in general — all of which, in theory, is good for the sport. But we're having trouble getting those numbers up. Why?

Pierre Pepin points out that 200 first-year members (about 15% of our national membership) never come back after that first year, which suggests to me that we don't have a problem recruiting members — we have problems keeping them. As any good marketer will tell you, your sales effort may get people in the door, but it'll be your *service* that keeps 'em coming back. So is there something wrong with our service?

To use some very round figures, our club (Champlain) has boosted membership from about 50 two years ago to somewhere around 90 at the end of last season. The majority of the 40 new members fall into the student category; that is, they fly club ships exclusively. Of the previous 50 members, about half own their own gliders, so the remaining pilots fly those same club ships. Some simple math will tell you that the demands for time on club gliders has better than doubled, with no increase in their numbers.

By any measure, the accessibility to those resources for new members has worsened substantially. Teaching students to fly and providing them with gliders to do it in is the service we provide, and however good it was before, it's not getting better, it's getting worse. New student members at our club provide the bulk of our revenues; keen as they are, many will take three or four flights a day, and bring in more cash in rentals and tows than five times their number of other pilots. I hear it said over and over that "new recruits are good for revenues", but are they getting a level of service proportional to the cash they bring in?

There's an argument to be made that, if the answer to this question is "No", these members are actually subsidizing the other activities of the club. To be cynical in the extreme, one could wonder if the first-year student who never comes back isn't actually the most "profitable" member a club can have — he or she deposits the most money into club

coffers in that first year, but doesn't tie up club ships and services for several more years down the road. I don't share that cynical view, but neither is my name Pollyanna. I believe that clubs need to make a concerted effort to ensure that the "service" new members receive jibes with what they spend as a group. Viewing them as "good for the bottom line" is, in my mind, a mistake.

Extra revenue coming from new members should be turned directly around to provide services for new members — more ships, instruction, training aids, faster progress through the ranks, and so on. Were we to adopt that thinking, we'd be seeing them not as profit centres, but rather as customers entitled to value for their money. Ask any businessman; such a view is the key to turning "sales" into long-term clients.

When I joined AVVC two years ago as a partially trained student, I received an excellent level of "service" from the club — top quality training, a reasonable accessibility to gliders, and bags of support and advice from older members. Last year, it was a struggle to get glider time with so many new recruits vying for the same aircraft, and next year — well, who knows... If it were held to a vote right now, I would vote to freeze membership levels at our club until our resources caught up with the increased demand, and to make sure that they do.

One might speculate that freezing memberships is a poor solution to foster growth in the sport, but I'd argue the opposite — long term growth comes from developing long-term clients, and you do that by taking good care of the clients you have today. Every time I hear it mentioned that new recruits are "good for revenues", I cringe. Were our new recruits seen and treated as revenue-neutral, we'd know it's because we were putting the money they bring in back into the services they require. That would lead to more satisfied "customers", and the *satisfied customer*, as any businessman will tell you, is the one who comes back.

**Robert Victor**

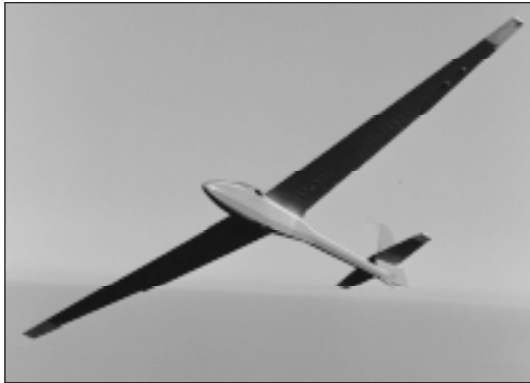
*and now another side of this story...*

## Share the 1998 success of AVV Champlain

I have been asked a lot to comment on the success that we had last year at Champlain. Let's begin with a summary of the 1998 season. Normally, we have about 60 members — we had 98 members in 1998 (83 with SAC, the other 15 non-SAC members took our "end-of-year trial package"). Of this → p16

# The EA9 Optimist – flight testing a promising prototype

Ross Macintyre  
Cambridge Gliding Club



Derek Cattani

The Edgley EA9 *Optimist* kit sailplane prototype is now airborne in Britain and it promises to be an easy to build, maintain and repair, medium performance club sailplane at an affordable price. It employs a brand new way to use a proven composite material previously used mostly for floorboards!

The prototype had been brought to the Cambridge Gliding Club and, showing the manufacturer's faith in his product, it was made available to any reasonably experienced club pilot with a Bronze C and 50 hours. I reckoned I fitted the category, so on one of the last days in August 1998, and in spite of its unusual green and yellow appearance (it reminded me of an Australian rugby team), I hauled it to the launch point and got airborne behind the club's Pawnee. It happened to be the one day this year that the club's winch was out of service for maintenance so I wasn't able to see for myself what it was like on a winch launch.

Back to the beginning. The DI had shown me the unusual honeycomb Fibrelam board it was built of, and while the similarity to wood and fabric construction was apparent, there was no doubt that this was *not* wood. In fact, 80% of the 300-odd components are made from 6 mm and 10 mm Fibrelam. This is a very lightweight pre-cured composite sandwich board with cross-plyed fibreglass skins over an aramid honeycomb core. The same material is used in most airliner floors. It has a better strength to weight ratio than wood, and the end result is a strong aircraft, yet lighter than an equivalent in wood or metal. The material is not easy to cut accurately by hand, so computer controlled routing machines are used to cut the kit parts to size.

Indeed, you can choose the amount of pre-finished components you have in the three grades of kitset. The basic kit consists of the Fibrelam components ready to assemble, and while it includes the preformed hard skins for the wing "D" box, fin and tailplane, the wing spar has to be assembled and no hardware is included. The intermediate kit includes the hardware and the wing spar is assembled, but consider-

able fitting is required. The deluxe kit has the Fibrelam structure largely complete, all that's required is to put the fittings in and set up the control runs. The company (Edgley Sailplanes Ltd.) compares completing the latter kit to a major overhaul and refurbish of a conventional metal or wood framed sailplane. None of the kits include the fabric or finishing materials. The price difference is not inconsiderable, £9,995 (\$28K) for the basic, £12,150 (\$34K) for the intermediate, and £17,500 (\$49K) for the deluxe version.

So what do you get for the money? For a start, you get a brand new glider (which doesn't have to be white) and you get a glider that is very pleasant and somewhat nostalgic to fly. It looks old fashioned too, with the fabric covered wings behind the spar and the angular fuselage dictated by the flat sheets of Fibrelam. It has a slightly bulbous canopy which vaguely reminded me of a K8. I'm told that it should have reminded me of a ASK-18 (I can only go by photos, and yes, it does have the longer nose and smoother lines of the ASK-18). This is because it was designed with the ASK-18 as a model, more as a proof of structural techniques than as a completely new design of sailplane. Still it is different, it has a shorter wingspan, (a most unusual 15.7 metres), and a Wortmann airfoil of more modern design than the ASK-18's NACA profile. Finally, the tailplane is mounted up the fin to avoid crops in outlandings. The performance is similar to the ASK-18 and several other of the somewhat older generation of sailplanes. But I am getting ahead of myself again.

Getting into the cockpit was easy, the side-hinged canopy opened wide. Once in (and being short) I felt lost, there was so much room in the cockpit. And in spite of my parachute keeping me forward enough to have the control column comfortably to hand without stretching, my feet were a good way from the rudder pedals. They are adjustable of course, and on the last position I finally found a comfortable spot which allowed full rudder travel. Clearly, a much larger person than myself could fit into this cockpit with ease. The maximum useful load is 135 kg! (*Since this flight, the pedals have been modified to be in-flight adjustable, the cockpit will now easily accommodate a 6'-6" pilot, and the canopy latching system has also been improved. ed*) With such an aircraft, there is no provision for water ballast so the load can all be pilot if necessary — for light pilots there is provision for 22 kg of ballast to be bolted to the floor between the pilots legs.

Once settled into the cockpit the launch got underway. The first thing to notice was the fact that with the light wing loading, it was off the ground very quickly. The trim was effective and it was only moments before I realized that the controls were beautifully balanced so that both ailerons and elevator felt completely natural, absolutely smooth and very effective. The Pawnee was feeling her oats that day, and it was not long at all before we hit a good thermal at about 1600 feet and I pulled off. ⇨ p8

# The EA9 Optimist – design and engineering

John Edgley

**A** new type of aircraft construction and assembly process has been developed which holds considerable promise for the homebuilt market. In essence, the process is rather like cutting out a cardboard model and then gluing the tabs to the panels.

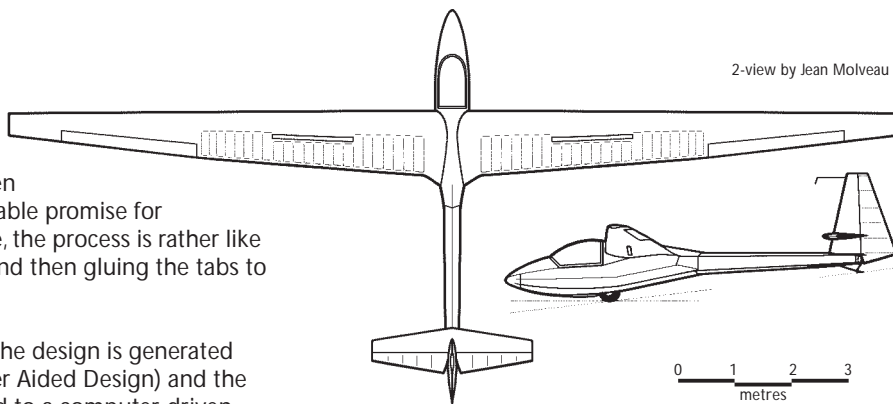
In the case of the EA9 sailplane, the design is generated by a computer (CAD, or Computer Aided Design) and the computer data is then transferred to a computer-driven machine (CAM, or Computer Aided Manufacturing) which cuts boards of Fibrelam into the required components bearing interlocking tangs and slots. The components are assembled dry in a jig and then bonded together to produce an airframe. The assembly process is rapid and devoid of dust, odours and the hazards associated with resins and solvents. It produces a robust airframe which can withstand the weather and is as light as wood. The EA9 recently had further tests at the University of Bath School of Mechanical Engineering, where John Edgley spoke to *“Popular Flying”*.

**“PF”** Why did you choose to demonstrate this technology on a sailplane rather than a powered aircraft?

**John Edgley** I wanted to investigate the technology. The idea that we should do a sailplane as a proof of concept came later. In fact, when I applied for that first government grant, I only said we were going to build something using Fibrelam and it was on that basis that we got the first funding ... Of course, in investigations of this kind you actually have to build something. The first idea was that we would perhaps just build some wings for an existing aeroplane. Then on consideration, I thought it might be better to go on and do a full aircraft. I didn't really want to get into the business of engines and making engine systems work, because that wasn't the idea of the project.



Early rigging tests on the partly assembled prototype. Tabs along the fuselage panels that create the interlocking, self-jigging joints are evident.



So, I decided to go for a glider and went and interviewed Derek Piggott. We decided that we wanted to show we could build an aircraft which was as light as a wooden aircraft. That was definitely the target: can we build as light as wood? Ten years ago I did a historic survey of different kinds of aircraft construction and plotted it on a graph. It showed, as aircraft materials in use changed from pure wood to wood and steel tube to aluminum and glass fibre, each of these so-called improvements increased the weight and bigger engines were required...

The idea was born to use Fibrelam with which I had some previous experience, building as light as wood to prove the concept. I wanted to have some direct comparison with an existing wooden structure.

**“PF”** The EA9 is an all-Fibrelam aeroplane?

**John Edgley** Yes, the whole thing except the flying surface skins, which were similar but made with precured glass cloth. The only other material that I have been looking at is a carbon fibre pulltrusion which is made by pulling carbon fibres through a mould into which epoxy-resin is simultaneously squeezed. The mould is heated, so the structure is cured as it merges.

The Fibrelam material is supplied in sheets similar to plywood, and most of the Fibrelam we use is 1/4". We have used other thicknesses in small amounts.

**“PF”** I'm sure that, what will run through the minds of many when they read this, is whether or not Fibrelam is a suitable material for incorporation in homebuilt designs where they don't have a CAD/CAM setup.

**John Edgley** I think it would be perfectly possible to do it without CAD/CAM. The only thing I have to say is that you would have to make a set of cutting templates. Fibrelam *can* be cut 'freehand' but it is very difficult. You can cut it with a small circular saw, but by far the easiest way is to cut it with a lightweight router. If you are using a router but have no numerical control, you must use a template. You only need a very lightweight router — during much of our manufacturing process we used a very fast 29,000 rpm drill with a modified head. ➔ **next page**

## The Optimist – flight test

from page 6

The release is a “T” bar on a cable near the left leg, again like all of the controls easy to reach and operate.

Thermaling was a piece of cake, the controls allowed the selected angle of bank to be easily maintained and even in the turbulent lift of the thermals on that late August day the Optimist displayed the stable controls I had experienced on tow. The climb was rapid up to 5500 feet and I started to explore the penetration between thermals. A relatively slow 60 to 65 knots produced just the sort of sink that one would expect from a Ka6E or similar, at faster speeds it seemed just a little better. I don't think that inter-thermal speeds much over 70 knots would be a good idea, although Vne is a comfortable 125 knots.

I was able to fly beside an LS-8 for a while, and certainly at the lower speeds there wasn't much to choose in sink rate, but when the LS-8 stopped gawking at the green machine and went off, there was no doubt that the Optimist is in a lower performance bracket, similar to an ASK-23 or the -18. All three types are said to have a glide angle of 34:1 at about 41 to 43 knots, while sink rates are around 1.2 knots at 35 knots according to the book.

I tried a few stalls which were quite innocuous with nose drop at about 33–34 knots, although the book said 32 knots. Still, no problems. I conserved my height in the dying thermals, it was past 5 pm and the lift was getting weaker and further apart. In these conditions, I was able to outclimb an ASW-20 with winglets, but then I could fly slower in the narrow core while the glass ship waffled around the outer regions of the thermal.

How the Optimist compares			
	Edgley Optimist	Schleicher ASK-23	Schleicher ASK-18
Vne	125 kts	118 kts	108 kts
Best L/D	34:1 @ 41kt	34:1 @ 43 kt	34:1 @ 41 kt
Min Sink	1.2 kt @ 35kt	1.2 kt @ 35 kt	1.25 kt @ 40 kt
Wing Span	15.7 m	15 m	16 m
Wing Area	13.06 m <sup>2</sup>	12.90 m <sup>2</sup>	12.99 m <sup>2</sup>
Aspect Ratio	18.85	17.44	19.70
Length	6.95 m	7.05 m	7.00 m
Height	1.72 m	1.48 m	1.70 m
Empty Wt	216 kg (476 lb)	230 kg (507 lb)	215 kg (474 lb)
Max Wt	335 kg (738 lb)	380 kg (838 lb)	335 kg (738 lb)
Useful Load	119 kg (262 lb)	150 kg (331 lb)	120 kg (265 lb)

The view outside was good, although the rather high coamings around the cockpit made the outlook a little restricted unless some weaving was undertaken while checking below and towards the rear of the glider for other aircraft. There were plenty of gliders around too, as a nearby club had routed a competition task through the area. Masses of gliders in the sky does tend to concentrate the mind when it comes to keeping a good lookout.

I had been up about two hours when I realized that the slightly more upright seating of the Optimist compared less well with the French “Mistral” glider I had flown the day before. My tailbone was starting to feel the pressure of the more upright position, while in the Mistral after a pleasant four hour flight I had felt supremely comfortable. It may have been the difference between the two different parachutes, one acting as a better cushion. I used no additional cushioning in either ship, so it was either that or the seat shape that made the difference. Nevertheless, it was significantly better than the Polish Junior which I had flown a few days before, which left me nearly crippled because of its poor seating.

Finally, all good things come to an end, I decided I'd better try the air brakes as I was just about ready to land. No tendency to suck open, no judder, just good, honest and very effective airbrakes. Landing was absolutely normal and I did not need to allow it to go forward onto the small skid in front of the main wheel until it had almost stopped.

Overall impression, easy to fly, beautifully balanced controls, and absolutely great for local soaring. It would be no problem in flying cross-country, but it would only really fit into the Sports class for competition. Too much span for the Standard class and not enough performance. As a Sports class machine in New Zealand, it would be in with the Ka6E and similar machines, possibly slightly better, but it has a similar performance to many of the glass gliders too, so it would be quite a good match for the PW-5, Club Libelle, the Club Astir and some of the two-seaters.

Derek Piggott flew it in competition where it did quite well, although one wonders how much of that performance was the pilot in his case. It is a delightful aircraft to fly, and if you enjoy flying the fruits of your labours, then it would be an interesting aircraft to have. ❖

## The Optimist – engineering

from page 7

“PF” Have you come across any particular problems of a structural nature during the course of construction that you hadn't anticipated?

**John Edgley** The whole thing is very experimental. We had to develop joint types and the whole business of attaching fittings. Typically, you have to insert some kind of metal ferrule into the Fibrelam in order to pick up the bolt loads, because the material has a very low shear strength. You can't just drill a hole and put a bolt through. Fibrelam has been used with ferrules to fabricate the floors and galleys on commercial aircraft for some time. I suppose that one of the main difficulties is that there is very little data available. The material is

temperature dependent to a certain extent. The regulations state that a glider has to be able to withstand its flight loads even at 56°C. The reason for that is the possibility of a heat soak on the ground while the glider is at rest, before someone climbs in at Alice Springs and goes flying. That is a pretty high temperature and we had to do a lot of our testing, including the joints, at an elevated temperature in order to do the strength tests. The strength can go down to about a quarter of what it would be at room temperature, particularly the joints, rather than the Fibrelam itself. Any composite tends to be weaker at high temperature.

“PF” If you wanted to adapt this technology to a powered aeroplane, such as a typical kit-built aircraft, what would you have to do next?



**John Edgley** I would like to do a kit-built aeroplane in this material. It is ideally suited to kit building because you end up with a kit of parts which is rather like building a model aeroplane. All the parts are cut out and ready to go. A lot of the tangs and slots simply slot together, so you know where items go. Items can only go together right where you have tangs and slots. In fact, many of the assembly jigs are the same. Many of them are made of plywood and were also cut out on the Numerical Control routing machine and go together rather like IKEA flatpacked furniture. With this construction technique you don't need a full mould as you would with a wet lay-up cloth. You simply need assembly fixtures, typically a number of frames to hold the shapes.

**"PF"** You have adapted an existing aeroplane shape to new materials. You knew before you started that the basic design was satisfactory.

**John Edgley** The EA9 is modelled on the ASK-18. Most new aircraft are, in fact, modelled on an existing design. We have our own wing section and fuselage section, so it's a loose comparison. But I did want an existing wood glider as the target, from the weight point of view, because I wanted to show that we could build as light as wood.

**"PF"** How would you define the advantages of this glider as a kit?

**John Edgley** Compared with a wooden glider there are far fewer components — I reckon about one tenth (depending how you regard a wing rib). The material is obviously much more robust than wood, especially as you can leave it outside. It will not absorb moisture.

**"PF"** The aeroplane is now here at the University of Bath School of Mechanical Engineering. What part does the University play in the project?

**John Edgley** During the early test flying we found that there were one or two things about the stability and control that were unsatisfactory due to lack of stiffness. This is probably in the fuselage, though the conclusion that everyone came to was that it must be wing torsion, though I didn't believe that. The early indications we have from Bath University agree with my instincts. It is probably just a bit of flexibility in the fuselage which is causing slightly strange control effects in terms of stick force per 'g'; declining as you go faster. In any new design you can't expect to come out right first time unless you spend enormous amounts of money on the theoretical work. But Bath are doing a proper theoretical stability analysis of fuselage stiffness. You could argue that we should have done that, but the difficulty is that if you do everything you should, you would never finish... If we find out that it is just a question of fuselage stiffness, we can simply apply some carbon fibre tape to the Fibrelam and that should solve the problem quite easily.

**"PF"** Is there easy access to the fuselage interior?

**John Edgley** Yes. The fuselage boom can be detached with bolts from the forward fuselage at the wing trailing edge. We designed the aircraft that way because ground looping is quite a common cause of rear fuselage damage on a glider. If you smash the boom you can unbol-

and replace it instead of making a complex repair. (*The boom is attached to the forward fuselage by 30 bolts, and the fin is also bolted on.* ed) The wings are covered with traditional materials which now means Ceconite or Diatex. People can work easily with that and mend it when damaged. It's much easier to repair than fibreglass.

**"PF"** Is Fibrelam an easy material to repair?

**John Edgley** We haven't had to repair it yet. It is probably as easy to replace a panel of Fibrelam as one of aluminum. There is no reason why you should not cut out a hole and put a patch in. The skin of the Fibrelam is only 0.5 mm thick so that, provided you don't mind a slight discontinuity on the skin, there is no reason you should not in effect do a lap joint repair. It would end up slightly heavier than the original, but the change in weight would be very low. We did some lap joints of that kind on the original design.

**"PF"** Assuming that you solve these minor materials problems, what will your next step be? Will the EA9 go into production?

**John Edgley** We have looked at the market and are sure that it would sell. (*Preliminary work on a two-seater has also begun.* ed) If somebody else wanted to produce it in quantity, we would be glad to help, either as consultants or possibly as a joint effort. I would be very interested to hear from anyone with the necessary experience and potential commitment to kits or complete airframe production.

**"PF"** Do you believe that a single-seat glider can beat the German manufacturers on price or performance or both?

**John Edgley** I could certainly beat the Germans on price. On performance, it is a mid-performance glider and doesn't pretend to be anything else. The mid-performance machines are nearly all old machines which have been built or licence-built versions of old designs like the K13. Compared with a wet lay-up or glass, I am sure we can beat them comfortably on price.

**"PF"** Are you a pilot?

**John Edgley** No. All the test flying has been done by Derek Piggott. We built the prototype at Thruxton, but had to move workshops, so we were not able to get a great deal of time in the air. But in August last year, Derek entered for the regional gliding competition at Lasham, even though the EA9 had only done six or seven flights. Typically, he flew four hour cross-countries and came third in his class. So, although there are one or two aspects about the aeroplane which require development, the fact that it did so well in the competition shows that we got probably 95 per cent of it right.

**"PF"** There should be considerable interest from home-builders from the point of view of the structure and possibilities of kit production with this material.

**John Edgley** Yes. This kind of aircraft does lend itself very well to kit production, and I am inclined to think that compared with wet lay-up glass, even though you can't quite get the aerodynamic refinement out of it, you can potentially build a much more rugged aeroplane. Certainly it is lighter than wet lay-up glass. Because of the light weight, one can go for a slightly lower wing loading. There are definite trade-off advantages there. ❖

# Human Factors in Soaring

Ian Oldaker,

Chairman, Flight Training & Safety Committee

As long ago as 1940, three-quarters of all flying accidents were noted as due to human failure. At the 20th IATA conference in Istanbul in 1975, these numbers were reported as applying to the more recent accidents also. Since then, accident statistics for general aviation in the United States show human failures to be responsible for an equally high fraction of accidents.

At the 1975 conference there was little appreciation that "human factors" was important from an aviation safety viewpoint. However, this conference was perhaps the turning point in recognition of the importance of human factors in air transportation. A conclusion from that conference was that unless human factors was to be taken more seriously and implemented in the aviation community in general, a major disaster would occur. In fact, this was followed 17 months later by the double 747 disaster at Tenerife. This accident resulted entirely from a series of human factors deficiencies.

Accidents to gliders are a subject fraught with difficulties of interpretation and opinion and, in Canada, the yearly analysis varies considerably from year to year. Insurance premiums are on the rise due to recent large claims. Unless Canadian pilots reduce the numbers of severe accidents over several years in a row, insurance may be hard to obtain in future, and more onerous regulations and checking of pilots by the authorities may occur. Looking at numbers of fatalities internationally, the Canadian situation might appear to be acceptable. Analysis of the fatal accident statistics from 1976 to 1995 and comparing the results to many other gliding countries shows Canada to be at the wrong end of the list overall.

The numbers of pilots per accident, gliders per accident or launches per fatal accident show us to lag, generally well behind. For example, the Netherlands had over 145,000 launches per fatality in a 23 year period whereas Canada's number is about 34,000 launches per fatality in 19 years. Lack of Canadian flight statistics is a hindrance to making good comparisons, but attempts have been made to extrapolate from when we had much better records to work from. The average for the 12 countries analyzed is approximately 74,500 launches per fatality. A total of 59 million launches were recorded. Canada recorded one fatal accident per 1508 members in 19 years. Only Finland did worse with 1344 members per fatality in 22 years. Best performer was Norway with one fatal accident in 23 years per 9081 members.

Canada's standing in the international tables is also a measure perhaps of the overall accident situation in Canada, of our approach or lack of a positive attitude to safety matters, all leading to the recent high level of

insurance claims. Perhaps it is because our standards have not kept pace with the expectations of today's pilots, and indeed may have slipped so much that we have had some accidents that have had serious consequences. We certainly should not have had them in the first place, but having had them, we must now take action to prevent them from happening again.

We need to take positive action for two reasons; first to avoid having these accidents again, and second to prevent the insurance rates from increasing further. If more serious accidents were to occur soon, we may have great difficulties getting any insurance at all! It is for these reasons that our safety program is being enhanced and this paper is written to discuss where human factors can help us. Human factors are increasingly being recognized for their application to safety in all branches of aviation and indeed to other disciplines and industries.

## What are Human Factors?

This paper describes human factors as it may be applied to gliding and soaring, and suggests there are many areas where individuals, clubs, and national organizations can apply this relatively new technology to improving safety.

Human factors is about people and their relationships with, and how they interact with their environment, with machines and equipment, and with each other. Human factors study:

- increases our awareness of human limitations and behaviour
- reduces consequences of human error by better design of equipment and procedures
- improves the quality of leadership
- minimizes environmental effects on personal well-being and effectiveness
- modifies attitudes favourably, and
- enhances motivation

Human factors is concerned with human behaviour and performance, with decision-making and cognitive processes. Ergonomics is the study of people in their working environment, and the discipline can be traced to time and motion studies in the 1880s and 1890s. WW1 stimulated human factors work when women entered the work force and production methods had to be optimized. At the same time, recruits in the USA were given intelligence tests to help assign them effectively within the range of needed military tasks. From 1924 to 1930, studies at the Hawthorn Works of Western Electric in the USA showed people would be influenced by psychological factors unrelated to the work. Thus motivation was seen to be important to good performance at work, in addition to the man/machine interface.

Human factors, then, is a multi-disciplinary technology that relies on many sciences:

*Physiology and psychology* are important for our understanding of how we see the world and how we hear, feel and react to things around us.

*Biology* gives us information about our body rhythms that affect performance, and for our eating and drinking needs. Did you know, for example, that humans suffer from a reduced activity level around lunchtime, whether we eat lunch or not? Airline pilots know this well, as it is now included in their HF courses.

*Biomechanics* is the discipline used in cockpit design.

*Genetics* may explain why certain ethnic groups differ from others, and how they are expected to perform.

*Engineering* provides us with time and motion studies and of course with the designs of gliders that we fly.

*Statistics* come into the picture too, because we need to be able to knowledgeably review studies and surveys.

Human factors is the discipline that should be used to solve problems, in our case in our everyday soaring, and in our club operations and organizations.

To explain the scope of human factors, a simple model was first devised by Edwards in 1972 and refined later by Hawkins in 1984. It is the *SHEL* concept — each letter referring to the *Software, Hardware, Environment, and Liveware*. Take a look at the Transport Canada study guide for the glider pilot exam; section 8 is on HF.



#### Liveware

At the centre of this model is the human or Liveware. We are the most flexible component of the system, also the most valuable – but we have limitations. We know about many of these and can now

generally predict human performance. Note that the edges of the central square are rough — they are not smooth and simple — the interfaces between us and the other components are not as smooth as we would like! Hence there is a need to match the other components to the human if stress and breakdown are to be avoided. To obtain a good match we need to understand how we operate, to understand our performance capabilities and our limitations.

Humans vary in size and shape. We vary by ethnic, age, and gender groups, and we vary within these groups. The designer must understand these differences to make design decisions. All pilots must understand how these differences affect glider performance to maintain safe operations. In extreme cases these factors have been implicated in gliding accidents.

We need fuelling with food, water, and oxygen. Deficiencies in any one of these can lead to serious problems in flying.

Data or information processing requires us to gather, process, and make decisions about the vast amount of information that is available. Hence, our decision making is to be followed by data processing. Input data processing output. I think you will agree that the output characteristics of individuals vary greatly. It is important in the aviation environment to understand how our memories

(short and long term) work, how stress affects us, and how we are motivated. This is because many human errors can be traced to the area of information processing. Our tolerance to the immediate environment affects how we feel, our well-being. Although we function best within a narrow range of light levels, temperature, noise, etc, we often fly in more difficult conditions. These can adversely affect our performance. Some of us have a fear of heights or claustrophobia, or we get bored easily. These affect a pilot's mental and physical performance.

Decision making is addressed in the SOAR technique that we have included in our Association's flying training syllabus for at least the past five years. If you are not teaching this, ask your CFI to teach it to you! It is interesting that the military and civilian flying training programs include similar techniques that are taught to cover pilot decision making! What could be simpler than SOAR?!

We can expect large variations in the performance of individual pilots. This is not so with the gliders themselves because it is possible to design a glider to a set of internationally accepted airworthiness standards. The gliders of each design will be very consistent in their performance. In air forces and airlines, unsuitable candidates can be rejected, but in typical gliding clubs we have to deal with the difficulty of large variations between individuals. This means that our overall system must be designed with procedures, administrative controls and even training programs to give us a safe operation.

The Liveware is central to the SHEL model of HF. The other components must be designed to match and to be adapted to the human.



#### Liveware / Hardware

Matching hardware to the characteristics of humans concerns tasks such as seat design. More complex is the design of displays to match the information-processing capabilities of humans (the Liveware). Positioning of controls, too, is important — we can all think of incorrect actuation of a control due to wrong movement, or improper coding, or poor location — all human factors considerations. Humans, too, can and must be taught to adapt to poor L / H matching. But this does not remove their existence; they will remain a potential hazard. Of course designers must be alerted to these problems. How do we do this?

In our training of new pilots and checking out of pilots on new types the above points need to be emphasized. We must point out the problems of the Blanik flap and spoiler handles for example, the reversed direction of operation of undercarriage levers from one glider to another, and so on. Making pilots, from the start of training, look at the divebrakes when they check them on downwind, and to look at the undercarriage lever pictogram that shows it is down and locked, sets them up for good habits for all their later flying. The positioning of instruments from one glider to the next in a club fleet should be *identical!* I have seen otherwise. A safety audit should pick up this problem. But don't wait until then, check this now! ⇨ p13



Charles Yeates

# Venturing down under

Charles Yeates, Bluenose Soaring

**K**ris and I hared off to the other hemisphere for four months this winter to visit friends and play tourist. Kris' being downsized from her federal job was the trigger. Of course we managed some flying ....

While touring in both OZ and NZ, I had chances to fly a lot of different machines and even qualified to fly both the Pawnee 235 and Callair A9A towplanes at Waikerie in South Australia. It was a great way to pass time while waiting for the weather to cook up, although it seemed tame there after a month of operating in New Zealand at Omarama.

You read in the last issue how Larry Springford earned himself a Diamond height at Omarama on 24 December. Our visits overlapped and it was pleasant to have Canadian friends next door. We lived in modern chalets on the airfield, two of a dozen built for the 1995 World Competitions, and awoke each morning to look through the glass sliding doors at the ever changing sky colouring Benmore mountain just beyond the airfield.

While the weather wasn't super cooperative, I did enjoy flying a Discus (owned by ex-Bluenoser Phil Dolan who is now based in Karachi) in the mountains and large wave systems — my first venture among the big rocks. Justin Wills, a master in the area, whose father I had flown against in Poland in the 1958 Worlds, offered to act as leader/guide to introduce us to the big, tricky and formidable terrain. This pair flying created *awesome* learning opportunities. The first serious day we flew

*An evening view of the New Zealand "long white cloud". This one formed too late in the day to use. It went N-S from horizon to horizon. The view is looking along the Omarama runway to the east.*

300+ kilometres O&R, northeast across the flat McKenzie Basin, across the end of Lake Tekapo and then along the Two Thumbs range, climbing from 6000 to 10,000 between and over the jagged rocks as we progressed toward the Dividing Range — always having an escape route to lower landable ground available just in case.

Clouds and rain kept us from approaching Mount Cook and so we returned down range at the edge of a sea-breeze front creeping in from the east. This made for a dramatic and easy run to the south, around the corner and west back toward Omarama. We found a weak wave up the face of a cu that took us to 12,500 feet, then casually dropped away and returned to Omarama after about four hours. Magic! The scenery that seemed scarcely touched by man made it a dream world.

Another memorable flight involved a slow, wrenching 40 minute climb from release, up the hills to a 7500 foot cloudbase in a mix of hill lift and wave rotor. Thermaling up a gully gives a special adrenalin rush when a gust reduces airspeed from 65 to 40 knots just when you are facing the hillside and must continue the turn. At cloudbase, I pushed ahead in the shaking air to the sunny edge of an obvious wave window to be rewarded with an initial 1400 ft/min smoooooth climb, contacted Christchurch Control at 17,500 feet and went on up. I stopped at 24,000 although a 3-4 knot climb was still available because I wasn't certain the canula constant flow oxygen system would be effective much higher.



I spent time running up and down the wave front maintaining altitude by varying the indicated speed between 85–100 knots. The temperature was -29°C and wind 70 knots outside but inside the sunlit cockpit it stayed comfortable. The Cambridge flight recorder later showed that running south into the quartering headwind yielded 123 km/h ground speed while the run north with tailwind component yielded an amazing 287 km/h. No wonder NZ pilots are making world speed records when the “long white cloud” covers South Island from end to end.

(The flight recorder data later clarified my image of the wave structure. The wave and associated clouds were parallel to the north-south mountain range acting as the trigger, as expected, but the wind was from the southwest. It had been my erroneous assumption that the wind would be perpendicular to the mountain range.)

Still mindful of the canula limits, and so deciding to descend quickly, I turned downwind and moved into the smoothly plummeting section of the system. Instinctively I pushed the stick forward to increase airspeed as one does when thermaling cross-country — and then realized that the resulting true airspeed (TAS) at 20,000 feet could be into the risky part of the glider's flight envelope. The thought of a gust load that could be created by hitting secondary wave lift or other turbulence caused me to slow down to an indicated 65 knots and open the air brakes.

A GPS bearing to Omarama enabled selection of an appropriate gap in the clouds to a landing in strong winds.

Flight recorder analysis later showed that just as this decision was made, the ground speed touched a startling 414 km/h! Deducting the known wind speed left a TAS of 295 km/h — well over the red-line of 220 km/h. This had been a serious error. Lesson learned. Before flying, pilots should think through potentially dangerous situations that can be encountered in mountain waves.

Back in Australia at Waikerie, with Kris aboard, we flew a couple of modest Canadian two-seater records in a Twin Astir, in great comfort over flat ground in 4–10 knot thermals rising to 10,000 foot cu bases. One afternoon there were spectacular views while running along the sunny side of a large, active but almost stationary front.

Just as marvellous were the many opportunities to mingle in both lands — a duplicate bridge evening, barbies on a Queensland beach, end of day tales at the pub, visits to Irishman Creek sheep station on the McKenzie Basin, horseback riding and a Christmas Day that included six friends sipping champagne and nibbling during an afternoon picnic at the end of a gravel road with glacial Lake Ohau on one side of our grove of ancient trees and with the opposite view showing mountains separated by a boulder strewn braided river. It seemed we were the only people on earth. Spectacular! ❖

## Human factors in soaring

from page 11



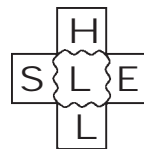
### Liveware / Software

Procedures, manuals and checklists, and their design are important in this interface. In the cockpit, symbols or pictograms are used to indicate control function and position, and are largely universal. But rules in gliding clubs are potential areas that need more attention to reduce the hazards from poorly conceived club procedures and rules. How many rules are unwritten for example? Think about it and you will probably come up with some... “we do it this way...” Take a look at your past incidents and look for operational factors. This may suggest some rules need to be amended. See Terry Southwood's excellent article in *free flight 2/98 p8*.



### Liveware / Environment

This interface was considered very early in flying, when pilots were fitted with special suits, goggles, etc. Oxygen systems and ‘g’ suits came later. In commercial flying today, the environment is controlled to suit the people, but in gliding this is not totally possible. Hence there is a need to adequately train pilots in the important areas of nutrition, health (and I include smoking and drinking here), the use of drugs, and the need for oxygen for high altitude flying. It is important too, to cover the effects of long exposures to the airfield environment at weekends (wind, sun, heat) by people more used to working in an office all day. Some aspects of human needs should be considered, especially how food and adequate water are needed to optimize our performance. Oxygen use and the regulations for its use are obvious areas for exam questions. Ground school courses should include discussion and presentation of these factors.



### Liveware / Liveware

Traditionally it is the pilot's performance that is questioned in this Liveware / Liveware interface. However we need to include consideration of leadership in clubs, and personality interactions. Student/ instructor and pilot/club management interactions are very important when training and guiding the pilot's responses under difficult circumstances, to most effectively solve his or her immediate problem in the safest manner. Of course, individual responsibility must continue to be expected of all pilots, and our training programs must be geared to achieve this. What I mean here is that on a first flight the instructor is fully responsible for all decisions and for the safety of the flight. On a first solo flight the student pilot is now responsible for all his or her decisions and the safety of the flight as well as others involved. Transferring this responsibility to the student is a gradual process and it takes a lot of care by instructors to be sure that the student, when solo, has the knowledge and skills to do this effectively.

This short paper will serve hopefully to introduce the reader to the subject of human factors in soaring. Having stimulated your interest, we can advance the cause of safety by more detailed study of each interface and by sharing details of training and other programs in each of our clubs. If you know of items that may be added to the above subjects, or you have a contribution, please let me know, and we can advance the safety of our sport. ❖

# SAC Awards Winners of 1998

Competition for SAC trophies was greater than usual in 1998. One of the reasons may have been that eastern weather was unusually good for soaring, while weather in the west was worse. It never is a level playing field but last season Easterners, at least, had a fighting chance.

Proving the point with the best flight of the year were joint winners *Nick Bonnière* and *Ulli Werneburg* for the **BAIC Trophy**. They jointly set a new Canadian record in their ASW-20s on 31 July. The flights, from the Gatineau Gliding Club at Pendleton airport, had three turnpoints: Brockville, Bonnechere, and Van-kleek Hill, landing back at Pendleton. The total distance was 560 kilometres, and the pilots gained 907 points to win the trophy.

The **Canadair Trophy**, for the best five flights of the season, was won by *Trevor Florence* of East Kootenay Soaring Club, flying down the Columbia River valley. Trevor's first flight was an out-and-return on 30 June from the Swansea hang glider ramp to Moberly Peak to the Canal Flats forestry bridge, to the Mount Seven hang glider ramp near Golden. He covered the 530 kilometre course at an average speed of 78.5 km/h. The second flight was the same as the first, except that it used the Mount Seven hang glider ramp twice as the northern turnpoint, and was completed at an average speed of more than 100 km/h. The third and fourth flights were over virtually the same course. Trevor's fifth flight started at the Swansea hang glider ramp, with turnpoints of Moberly Peak, Lakit Lookout, Harrogate Mill, Canal Flats forestry bridge and the Radium Hot Springs pool. But because of the weather, he made a turn at Harrogate and then added a standard 100 km triangle to the end.

Close behind in the race for the Canadair Trophy was Nick Bonnière of the Gatineau Gliding Club. George Wilson of London Soaring came in a very competitive third.

*Ted Chernecki* of Vancouver Soaring Association walked away with the **Stachow Trophy** for a net climb of about 16,900 feet. The barograph showed a low point of 6200 feet asl and a peak of 23,100 feet. The bad news was that the barograph drum stopped for a portion of the climb, so Ted couldn't claim a Diamond. The good news is that the irregular trace was, nevertheless, proof of the best altitude flight of the year. No other recorded flight came close to this achievement.

Winner of the **"200" Trophy** for the best five flights by a pilot with less than 200 hours time as pilot-in-command was Al Hoar of Cu Nim. Al, who had less than 100 hours P1 time at the beginning of the season, had widely varied flights. Two were in mountain terrain and three from his home field at Black Diamond, Alberta on three consecutive days.

The first flight on the Victoria Day weekend was 101 kilometres from Cu Nim to Nanton and return. The second was an 81 kilometres PST to Longview, High River airport and back to Cu Nim. The third, from Cu Nim to Chain Lakes north dam and return, was 96 kilometres. Al's fourth flight was at Golden, BC. Releasing at Mount Seven, he flew to Mummery and Donald, returning to Golden for a total distance of 96 kilometres. His fifth flight was at Cowley, Alberta on Thanksgiving weekend, where he gained 2624 metres or 8600 feet in weak wave.

I should mention that more than one OO and competitor had problems with the trophy scoring system. Most often, the "basic points" were added to the basic points multiplied by the bonus factors, resulting in a sort of "double-dip" of scores. We'll see if we can improve the situation by revision of the instructions on the trophy form.

I'd like to remind club leaders, and especially CFIs, that SAC presents **Certificates of Achievement** for flights that don't qualify for badges or trophies, but represent a personal achievement worth acknowledging, at any level of experience. They could be especially appropriate to mark a notable flight by a solo or newly licensed pilot.

David McAsey, Trophies chairman

## OTHER TROPHIES AND AWARDS

**Hank Janzen trophy** (*club or pilot with best contribution in the year to flight safety*)

Awarded by the FT&S committee to *Dan Cook*. He is the Safety Officer at the Gatineau Gliding Club as well as being the newly-appointed SAC Safety Officer. Not only has he continued to keep a keen interest in safety and instructing at his club, he has developed several innovations for the safety program of the Association. He is very interested in seeing how we can get more involvement by clubs to improve their safety culture and to reduce the numbers of accidents by continually working on safety. He is a worthy winner.

**Walter Piercy trophy** (*instructor of the year*)

Awarded by FT&S committee to *Paul Frigault* of the Cold Lake Soaring Club. From his busy schedule he devoted a large amount of time to club activities including instructing many towpilots and glider pilots. He also spent a lot of time compiling the ground school material and put it on the internet! Runners up were:

second, Keith Andrews (Prince Albert) and third, Gabriel Duford (Champlain).

Norm Perfect (York), Doug Moore (Albarni Valley), Walter Mueller (Grande Prairie) and Bill Roach (MSC) were also highly recommended by their clubs.

It was very difficult to choose the winner because most candidates had accumulated huge numbers of flights but also had taken part in non-flying activities and had held responsible positions in their clubs. To all candidates we owe a vote of thanks, for without their dedication the sport would not be where it is today. *Ian Oldaker*

### Ball and Chain trophy

(*accomplishment by a married pilot*)

Awarded by the SAC president to anyone, for anything. This year it was to *Heidi Popp* of the Vancouver Soaring Association.

*Pierre Pepin*

**Best Author certificate** (*for the best article to appear in free flight in 1998 by a Canadian writer*) Awarded this year to *Jörg Stieber* of SOSA for "Collision Avoidance". This article resulted in more requests for reprinting in other gliding magazines and newsletters than any other story that has ever appeared in *free flight*.

*Tony Burton*

### Roden trophy (*soaring skills development*)

The small (11 member) *Prince Albert Gliding and Soaring Club* was undisputed winner of the *Roden Trophy* for the club that, for its size, develops the soaring skills of the largest number of its pilots. The club awarded two "A" or "B" pins, two Bronze badges and three "C" badges last season, for a total score of 109. Runner-up for the trophy was Club de Vol à Voile de Québec.

*David McAsey*

COMPETITION TROPHIES awarded at the Nationals at Brandon, MB were:

#### MSC trophy

15m Class Champion *Jim Oke*

#### Wolf Mix trophy

Std. Class Champion *Ed Hollestelle*

#### CALPA trophy

Sports Class Champion *Hans Berg*

#### Dow trophies – best assigned task flown 15m class

243.0 km @ 58.5 km/h *Jim Oke*

#### Std class

227.3 km @ 65.9 km/h *Ed Hollestelle*

#### Sports class

220.4 km @ 61.8 km/h *Hans Berg*

#### Carling O'Keefe trophy – best Team

**SOSA trophy** – best Novice

*No awardees for these trophies in '98*

**Venez voler – Come fly**

# **Championnat Canadien de Vol à Voile National soaring championships**



## **Association de Vol à Voile Champlain St-Dominique, Québec – June 29 through July 8**

practice - June 27 and 28

### **Enjoy**

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- *On site swimming pool*
- *Fire rings & picnic tables*

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- *And many more attractions*

*For more information contact  
AVVC:*

*André Pepin  
616 Victoria Street  
St-Lambert  
Québec J4P 2J2*

*Phone: (450) 923-3631  
Email: [arcapep@cam.org](mailto:arcapep@cam.org)*

The Association de Vol à Voile Champlain has the privilege to invite everyone to our St. Dominique Airport contest site. Located 40 kilometres southeast from Montréal, this unique natural site in the most beautiful countryside is a playground covering the St. Lawrence river from Jay Peak, Vermont, to Thetford Mines and all the way from Joliet on the north shore of the St. Lawrence river to the Québec City soaring club.

There is a range of accommodations available: from camping, motels, to good hotels in St. Hyacinthe near the club. A 30 minute trip to Montréal will satisfy everyone who would like to visit hundreds of tourist attractions and experience the unique Montréal hospitality, activities and attractions.

Entry fee: \$250 if received before June 1, otherwise \$300  
Tow ticket: \$20 for 2000 foot tow.

Flight data recorders are acceptable (software should conform to Colin Bantin's scoring program – otherwise submit your software program to the contest committee.) *Note:* Flight recorders will be mandatory for this contest. They will be available for rent at \$50 for the duration of the contest for contestants who do not have their own. Please indicate on the registration form if you will need to rent a flight recorder.

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

For REGISTRATION FORM and latest updates see the Nationals homepage:  
<http://www.national99.com>  
(also accessible through the SAC website).

total, 48 were new members (49%), 9 former glider pilots, 23 new students pilots, 6 new towpilots, 6 new air cadets and 2 new spousal members. Of the 98 members, nine were women. We had five new women members in 1998 (+110%). The average age of our members is 37 years (the average age has declined by one year from last year). We raised the number of flights (normally around 1300 annually) to a record of 2239 flights. We had ten first solo and four new glider licence holders.

Now you want to know the recipe!?

In addition to the constant efforts and kindness of the members (see p6, "Not last", of the 6/98 *free flight*), myself, and especially the instructors, we put a special emphasis in recruiting student pilots.

In order to ease the entry of student pilots, we lowered the membership entrance level fees by 50% (SAC fee excluded). We thought that it could bring more students to our club to fly the gliders. In the long run, it would make more money. This year, we raised our income \$20,000 higher than 1997 (for the increase of 33 members). We lowered the membership fees of the student pilot because they are the ones who are using the gliders the most and because the biggest difficulty of recruiting new students is the high initial membership fees they had paid without knowing if they were even going to like our sport.

Another trick that I found to get more new members is the end of season trial membership. It is set at \$70 after mid-September (with no SAC membership fees to student pilots for this trial package). We have done this for the last two years. Before that, we usually had about two new members after mid-September. In 1997, we had 20 new members and around 30 this year with this special membership.

Why? When fall arrives, there are a lot of people that are searching for self-improvement courses. Glider courses are original and stimulating. The emphasis of the \$70 fee is to give a taste of our sport to potential new members. Seventy percent of the \$70 members (20) came back in 1998. Another good idea behind the \$70 fee is that when the cold days arrive and thermals have gone south for the winter, the average member is not coming often and is not using much of the equipment. The \$70 members are taking up the slack created by the fall days. We made 800 flights after mid-September when we usually had done 1300 flights per year!

The special end-of-year membership creates two advantages: newcomers will use the leftover equipment and will get addicted to our sport, and they will come back next year and pay a full season membership. Usually,

when mid-September has arrived, everything is paid off (insurance, avgas ...), so we are not losing money by offering low end-of-season membership. It's the opposite, our revenues have exploded and we have invested in the membership of the coming season.

When we tell people that it costs an average of \$1500 (at Champlain) to have a glider pilot licence compared to \$6000 for the airplane licence, we *are* cheating a bit. We are comparing oranges with apples. Have you ever calculated how much per hour a glider course costs in your club? In our club it is \$90/hour (average flight of 20 minutes at 35¢/min + \$18 for the tow + 1/20 of the \$276 club and SAC membership fees, with a free of charge instructor). It is almost the same price as renting a Cessna 150, including the \$25/hour instructor! The difference is that we have to build only 6 hours of flight time to get the glider licence instead of the 45 hours for the power licence. \$90/hour is a high cost for lessons in a motorless airplane with a free of charge instructor, but that is what it really costs and we cannot go lower than that (the \$90/hour rate already includes the 50% discount of the regular membership fees). Before, it was costing \$100/hour when we were charging a regular membership to the student pilots.

Try to find how much it is costing a student to pursue a glider course at your club and perhaps you will find the reason why the soaring community is having a problem recruiting new pilots.

I hope that sharing this information can help the soaring community grow, can get more SAC members and, indirectly, reduce the SAC membership fees. My motto is: the more we give, the more we get. It's working for Champlain, it could work for your club also.

Sylvain Bourque  
president, AVV Champlain

### On being invisible

Re: Ian Oldaker and Tom Coulson's page 21 article in the last issue of *free flight* regarding the 1998 Transport Canada Recreational Aircraft Seminar. They wrote, in part, "We were surprised to learn that the other sports know very little about soaring..."

This does not surprise me in the least. If the aviation community is ignorant about soaring, try to imagine how informed the average Joe or Jane on the street is. There is much work yet to be done to raise the profile of our sport within aviation itself as well as the non-flying public. Let us recognize that fact.

Recently (Jan 1999) there has been some discussion about this on the SAC Roundtable website. I think these kinds of efforts are long term processes, and that, as a group, we

need to recognize that ongoing publicity, media relations and marketing efforts are needed. In the end, this could have very positive results.

Terry McElligott

### Some views on international competition

Why support our participation in any international soaring competition?

- To send potential winners – Mmmm? (see comment #1 below)
  - who will raise awareness of the sport back in Canada? – No, see comment 2.
  - who will bring back enhanced and transferable skills? – Yes, comment 3.
- To maintain Canada as an internationally recognized part of the sport? ?? - note 4.
- To reward pilots who have spent a bundle rising to the top of the Canadian competition ladders? – Mmmm? comment 5.
- To help glider manufacturers market their newest exotic machines? – No, note 6

1. The World Gliding Championships provide an opportunity for the best soaring pilots to test themselves against their peers – winners are champions. Unfortunately, as Nick Bonnière directly stated during a luncheon speech at the SAC AGM following the competitions in France, "You cannot win if you are flying an ASW-24 against others flying the LS-8". Other than making a clear case for the concept of the World class, Nick was indicating that a chance to win this year in Germany depends on having one of the 'best' sailplanes at hand – today an LS-8 and an ASW-27. Historically our pilots have placed in the top ten at the WGC when they have had the 'best' sailplanes to fly.

Should SAC financially support a team only if pilots can get the right equipment? If you want to support potential winners, the answer is yes. The corollary is that if winning is the objective of sending a team, the funding is wasted if team members cannot obtain the 'best' machines for the competition.

2. International soaring competitions receive zero media coverage in Canada today. Forty years ago (I have been around a looong time!) the events seemed unusual enough that our Team pilots were covered in the weekly papers – photos and text – days before the ho-hum attitudes of today, eh?

3. Bringing back enhanced and transferable skills has been the main benefit of having our pilots compete in past WGC events. The Canadian Advanced Soaring group's programs ensure such skills are transferred very effectively. However, other than pair flying, what new techniques have shown up at the WGC recently? New instrumentation, yes,



## SAC AGM notes

The 1999 SAC AGM and seminars were held in Edmonton 26-28 February. There were only 42 people registered to attend, with 37 attending the actual general meeting.

SAC had a good year financially last year, showing a small budget surplus due to the ongoing efforts of the Board to keep costs down. SAC operating expenses have levelled off and are about as low as they can be. Use of e-mail and the competition in long distance telephone rates has contributed to the savings. Wise investments saw significant capital growth in our various funds.

We finally saw a resolution of our dispute with the Aero Club over our FAI contribution, which has been reduced significantly from previous expectations.

A Board motion raised at the meeting to require 90 days notice for any motions to be raised at future AGMs was narrowly defeated. The intent of the motion was to try and avoid the situation where a motion raised from the floor of an AGM that was not in the best interests of the association could be passed without proper representation from the rest of the organization. With the movement of the AGM around the country, and the relatively low attendance, it would be possible for those in attendance to give direction to the Board that was contrary to the wishes of the member clubs at large. The motion allowed time for circulation to the clubs, and to allow the clubs to prepare representation at the AGM by person or proxy.

Discussion from the floor centered on the difficulty in making any decisions at the AGM if no motion from the floor could be considered. Discussion ensued about how to achieve the intent of the motion without restricting the business of the association. No solution was determined, and it will be up to the Board to decide if they wish to introduce something else in the future.

but spreading this information doesn't require participation in the WGC. As well, most SAC members fly for fun, not to compete.

4. Our attendance at the IGC meetings ensures this more cheaply than supporting team pilots.

5. Pilots who love competition flying get a super adrenalin rush from being at international soaring competitions to mix and test their skills against the best in the world. They have the passion and continuing drive to hone their skills until they are at the top of the Team Seeding list. They spend a bundle

At meeting end, the Board was recognized and given applause for a job well done.

At our lunch, Denny May, the son of Canadian WWI and bush pilot, "Wop" May, gave us some personal and humorous insights about the aviation career of his famous father.

The afternoon safety sessions, delivered by Ian Oldaker, Dan Cook, and Terry Southwood were well received by the audience. Ian concentrated on the human factors that can affect our flying abilities (attributing an accident to "pilot error" just looks at the surface of the event); Dan talked about some of the issues and considerations about setting up a club safety program and the role of a club Safety Officer. He has written a new manual for club Safety Officers which is available from SAC. Terry ran an excellent workshop on incident analysis. As opposed to "accidents", Terry termed "incidents" as anything that provides "a cheap learning experience". He showed a process on how to recognize the factors involved, and how to communicate the lessons learned.

At the awards banquet, Mike Glatiotis gave us an enjoyable presentation on his transition from being a flatland to a mountain pilot, with slides of spectacular flying in the foothills and mountains of Alberta and British Columbia. A report on the SAC awards and trophies is given elsewhere in this issue.

The Sporting committee meeting on Sunday morning discussed the process for distributing (the very limited!) funding for world competitions, which world contests were eligible for funding, and the new rules for GPS-only national competitions.

Hal Werneburg presented a new proposal for a computer generated competition task to eliminate the dangers and inequities of gaggle and team flying in world competition — he will deliver the idea at the IGC meeting.

The weekend ended with the Edmonton International being fogged in for the first time this winter, likely preventing some attendees from getting home on schedule!

John Broomhall

to achieve their goal — ever newer more expensive sailplanes plus equipment and all the costs of attending our national competitions year after year. No sour grapes here. We competition pilots enjoy this arena and choose to spend accordingly. The emotional reward comes from being chosen, not from SAC financial support of a team entry.

6. We do not enter teams in the WGC to help glider manufacturers market their newest exotic machines but there is no doubt that this is the venue that manufacturers do and must use to promote their new products. Hey, nothing wrong with this.

## International competition funding

The international competition scene is in a period of rapid change. This year there are three world-level events, with prospective Canadian participation in two of them (Bayreuth, Germany, and Leszno, Poland). More international events are on the horizon. Only a short-time ago there was one world-level soaring contest every two years.

Through its World Contest and Wolf Mix funds, SAC has provided some financial assistance to Canada's national soaring team in the past. Since SAC has not received government financial assistance for many years, this support is only possible through the generosity of donors. In consultation with the competition community, SAC is currently devising guidelines for this support, which will recognize both the evolving nature of the international competitive scene and underlying financial realities. In this transition year, unless otherwise specified by the donor, donations to the World Contest Fund or Canadian Team will be allocated in proportion to the number of Canadian competitors participating in each world level event. In order to qualify for tax receipts, donations must be at arm's length and not directed to a specific individual. To facilitate banking, contributions should be made payable to SAC.

Pierre Pepin

## SAC annual reports now on web

In the recent past, SAC has fulfilled its obligation to provide annual reports to members by printing them as the insert you have received in *free flight* each year. (Before that, the annual reports were distributed in a general mailing to members which cost SAC about \$3500.) The incremental production, printing, and postage costs of the magazine insert was about \$1000, a significant saving. Now that the SAC website is active, and a growing percentage of members have email and web access, the annual reports will now be posted on the SAC "News and Events" page. Printed copies are available from the SAC office on request.

Tony Burton

**What to do:** Have a wide discussion — SAC members, Sporting committee and Board.

**Objective:** A thorough review of international competition policy.

**Question:** To what extent should SAC financially support international soaring team pilots — WGC, World class, Junior, Women's, and Club class competitions?

Charles Yeates

See the comments by Pierre Pepin in SAC News (above) on the short term situation regarding funding this year. Tony

## Potential problem on the PW-5

In preparation for the tow in one of our two PW-5s, the pilot pulled on the tow release T-handle to attach the tow rope, and the T-handle pulled free from the release cable. An examination indicated that the T-handle had unthreaded (about five turns of a right hand thread) from its cylindrical cable attachment barrel of about 3/8" diameter. There was no positive locking device at that threaded joint and apparently the T-handle had been coming loose for some time.

The other club PW-5 was checked and was found to be only finger tight at that joint. It appears that this joint needs some sort of positive locking device. Club personnel added a Locktite cement to that joint as an interim measure. The other PW-5 still remains in the as-delivered condition.

It would likely be difficult for the pilot to pull on the release cable once the T-handle separated because the remaining 3/8" diameter cylindrical barrel is only connected to the 1/8" diameter cable by a 1/4" diameter U-shaped washer, and it easily falls free. Despite a long search, we never could find the U-washer in the cockpit and we had to fabricate a new one.

... The same thing has happened with our Puchacz. Last summer, while giving a check-flight to a pilot, the yellow handle fell on the floor during takeoff. So, Puchacz (as well as PW-5 or 2-33) pilots must pay attention to the release handle while doing their checklist — and maybe it is a good idea to secure them with Locktite.

*from the Internet*

## Canadian Advanced Soaring news

I would like to echo Pierre Pepin's remarks in the last issue. I think one of the best ways to retain new pilots in our sport is to challenge them. Cross-country soaring is the biggest challenge we have in this sport. CAS has been introducing pilots to this aspect of the sport through our cross-country clinics, and more recently through our winter soaring seminar. Held in Hawkesbury, the seminar attracted over 100 people from as far away as Toronto and Quebec City. For more details visit the SAC Roundtable to see what you missed. We plan to make this an annual event and will probably hold a seminar in the Toronto area next year.

The contest flight recorder project is progressing well. Nick brought some completed units to the seminar. Each unit is about the size of two cigarette packages stacked on top of each other. Wire connections are made

via a four pin phone jack for power and a six pin computer network jack for the GPS signal (only two wires are used in each connector). The units will be supplied for rental with about four feet of cable attached to each jack. You will be responsible for providing the plug for your specific GPS unit and for connecting the recorder to your GPS unit and battery.

Nationals competitors can indicate on the registration form if they require a recorder. Once CAS has confirmation of your registration, you will be able to rent one of the recorders from 1 June until the end of the competition for \$50. This will allow you to set it up in your cockpit and practice with it prior to the contest. Note that the rules for the Nationals allow only GPS verification for the contest. There are no provisions in the rules for cameras.

**Dave Springford**

## International Gliding Commission

This year's IGC meeting took place in Seattle, Washington, USA on 12-13 March. It was sponsored by the SSA, the Grant County (Ephrata, WA) Chamber of Commerce and the Seattle Glider Council. 26 countries were represented at the table and the meeting was chaired by the IGC president, Mr. Tor Johannessen of Norway. Canada was represented by myself as delegate, Tony Burton as member of the Sporting Code rewrite working group and George Dunbar as observer. All three are members of the Cu Nim Gliding Club of Calgary, Alberta.

The IGC operates on a very limited budget with most income being generated from contest sanction fees and GNSS FR approval fees received from equipment manufacturers. Expenses mostly relate to out of pocket costs of volunteers. IGC receives no financial assistance from the FAI.

Below are some highlights, with a more detailed report being made available at a later date once the official meeting minutes have been published.

This year's meeting dealt in large part with upcoming world and continental championships; the number of which seems to be increasing every year. Some time was spent defining new aspects of record flying requirements (*see following article*).

Short reports were received from organizers of various championships with indications that preparations are well underway for the:

*Junior Worlds* – Terlet, Netherlands, 1999  
*World Champs* – Bayreuth, Germany, 1999

*World Class Champs* – Leszno, Poland, 1999  
*Club Class Champs* – Gawler, Australia, 2001  
*Feminine World Champs* – Lithuania, 2001  
*World Gliding Champs* –  
Mafeking – South Africa, 2001  
*FAI World Air Games (World Class Champs)* –  
Lillo, Spain, 2001

After a spirited bidding process between the USA and Italy, Rieti was chosen for the 2003 World Gliding Championships. A bid was accepted from France for the 2001 World Junior Champs at Issoudun.

The Lilienthal Medal (highest honour the IGC can bestow) was awarded posthumously to Oran Nicks of the USA for his lifelong dedicated involvement in aviation matters.

GNSS issues continue to occupy the time of several very dedicated individuals who spend untold hours with the testing and approval of GNSS FR units. It was estimated that if this work were done on a commercial basis, over US\$1,000,000 would have been spent so far.

An interesting and potentially important report was received outlining environmental concerns regarding aviation sports and gliding activities in particular. It is felt that the gliding community would be wise to be proactive in this area in order to forestall possible action from concerned citizens. A draft code of conduct for gliding is available.

The re-written Sporting Code (courtesy of Ross Macintyre, New Zealand, and Tony Burton, Canada) was accepted and will become effective on 1 October of this year. Discussions took place related to specific operational and competitive matters for several of the above listed championships and were generally resolved to the satisfaction of everyone.

Elections of officers were held and the following persons were elected :

President – Tor Johannessen, Norway  
1st VP – Richard Bradley, South Africa  
VPs – Eric Mozer, USA; Tapio Savolainen, Finland; Åke Petterson, Sweden; Terry Cubley, Australia; Brian Spreckley, UK  
IGC secretary – Ms. Angela Sheard

**Hal Werneburg**, IGC delegate for Canada

## IGC introduces more freedom to "free" distance records

At the IGC meeting in Seattle, two major changes were approved relating to the FAI Sporting Code for gliders.

First, the rewrite that has been proceeding over the past two years was approved. I am sure that you will find the new format much more readable and user-friendly. When the agreed upon changes and amendments have

## Ontario Soaring Ladder results - 1998

Pilot	Club	Glider		Flts	Tot km	Pts	Place
Nick Bonnière	GGC	ASW20	ST	11	3774.2	2086	1
Ulli Werneburg	GGC	ASW20b	MZ	10	3814.3	1987	2
George Wilson	LSS	Libelle	JK	4	1449.3	1933	3
Tracie Wark	SOSA	ASW20	LN	4	1550	1395	4
Jörg Stieber	SOSA	LS4	JS	3	1299.1	1234	5
Doug Bremner	SOSA	SZD55	XT	6	1736.5	1213	6
Ian Grant	GGC	LS4	ZT	4	435	413	7
Alain Berinstain	GGC	Jantar/1-36		2	275	327	8

Winner of the Ontario Soaring Ladder for 1998 is Dominique Bonnière with 2086 points, closely followed by wingmate Ulli Werneburg in second place with 1987 points. Nick and Ulli's flights included a successful Canadian 3TP Distance record of 560 kilometres from GGC in July. Nick set another kind of record also by claiming 3774 cross-country kilometres, the most by any entrant since the Ladder began in '94. Other worthy flights include a successful 500 kilometre

Diamond badge leg by George Wilson, who flies a Standard Libelle out of London Soaring Society. As the list of past Ladder winners shows, the winning standard is consistently high, although the number of entrants has hovered around only ten each year.


Yr	Winner	Club	Glider		# Flts	Km	Pts
96	Dave Frank	RVSS	ASW20	SR	5	1690.9	1573
97	Ian Spence	SOSA	ASW24	WW	4	1759.0	1841
98	Nick Bonnière	GGC	ASW20	ST	11	3774.2	2086

Jörg Stieber, past-president of Canadian Advanced Soaring, has proposed developing the Ladder into a national event. Several successful precedents exist in Europe. For example, the BGA Ladder boasts a hundred entrants or more each year (see <http://www.personal.u-net.com/~blotuk/BGA/ladder.html>). In Canada, the long travelling distances to contests should only add to the popularity of this form of competition, so the potential for growth seems to be there.

Ian Grant, Ladder administrator

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been incorporated, this new Code will be placed on the SAC webpage for downloading and use. Second, with strong argument from the Austrian delegate over the past two years, there will be a redefinition of the Straight (free) Distance, Free O&R Distance, and 3 Turnpoint Distance record categories to make them completely free. That is, there will be no requirement to predeclare any turnpoint(s) or any remote start/finish points that may be used on the flight. This rule change *does not* apply to badge flights.

The pilot will now be able to launch, fly to a remote start (if wished), fly to any available location accessible during the flight and name it as a turnpoint later, fly to a remote finish point (if wished), and land (either at a desired airfield or to a safe landout area). All waypoints must be correctly photographed or later identified in the flight recorder data. A pre-flight declaration is not required to be entered into the GPS or be photographed.

The chief argument for the task had been made by Hans Werner Grosse in the Euro-

pean gliding press. He said that, on long distance tasks, the current requirement for pre-declaring TPs that would actually be reachable during the flight did not test any soaring skill, but was a matter of pure luck. Secondly, motorgliders can now make use of remote start and finish points by virtue of their recorded motor-off and motor-on times while sailplanes cannot.

Dropping the requirement to pre-declare these tasks has obvious gains in mountain soaring areas — one will be able to fly to a good ridge location behind the intended course line before the official start, choose turnpoints in areas of good lift during the flight, and finish in an area which adds to the distance but is locally unlandable. Flatland record attempts will still be greatly assisted in the case of the 3-turnpoint distance task. Besides free choice of turnpoints if, for example, one got back to the club with height and thermals still available at the end of the day, you could overfly the airfield to add distance before turning back for home. With study of the maps of your local flying

area, no doubt other opportunities and possibilities will present themselves.

The new Code and task definitions will come into effect on 1 Oct 99. Between now and then, updated FAI record forms will also be completed and posted, and Ross Macintyre (UK) and I will be drafting a new Official Observer's guide to the Code.

Tony Burton

### Corrections to editor's bloopers

Here are a couple of corrections to errors which crept into recent issues. In 6/98, the sailplanes in formation on the front cover are not quite "a Cirrus sandwich" as 54 is a Mini-Nimbus (can you see the differences?). That's a minor error though, compared to getting an author wrong in 1/99 — the story, *Flying the Gap*, was written by Wolfgang Thiele of Rideau Valley Soaring. It turns out that both he and Frank Pennauer had send me articles on their travels and for some reason I got them switched. My apologies to Wolfgang.

## Request for pilot training in the safe use of FRs and GPS

The August 1998 meeting of the OSTIV Training & Safety Panel (TSP) in Ållberg, Sweden discussed with some concern the potential for accidents when people weren't properly trained in the use of GPS. Pilots had their head down in the cockpit too much trying to make the systems work. The TSP had reports of near mid-air collisions which were attributed to such situations. The TSP adopted the following:

*OSTIV recommendation on implementing GPS, flight computers, and other advanced instruments in gliders.*

"Despite the fact that GPS and flight computers are relatively new to gliding, we have experienced that this kind of equipment directly or indirectly has led to several accidents and dangerous situations. The main concern is that this type of equipment attracts the pilot's concentration into the cockpit, and distracts the pilot from keeping proper lookout. OSTIV TSP fears that improper construction and wrong operation of such equipment clearly increase the risk of mid-air collisions. The main problems with this type of equipment are:

- Handling and operating the equipment is often very complex.
- The data presented is often complex and in a form that needs close attention from the pilot.
- The data presented is not only necessary information, but also information that are "nice" to have.
- Many pilots are not properly trained in use of the equipment.

Especially a lot of hand-held equipment can be very complicated to use and the display is very small. An example can be the procedure needed for changing the trackpoint time on a GPS when approaching a turnpoint. For many GPS receivers this has to be done manually through the menu systems. Ideally this should be done automatically by the GPS or at least with one button.

Microprocessors and modern technology give almost an unlimited opportunity to implement new features and present various data. Some data are essential, but others are not essential, just nice to have. A recent example is an advanced variometer that shows the direction to the core of thermals. OSTIV TSP consider this to be very dangerous as it attracts the pilot's concentration into the cockpit almost all the time

The OSTIV TSP fully recognize the needs for useful and advanced equipment in gliders,

but will strongly urge the constructors and manufacturers to keep in mind the effects their equipment have on the pilot's concentration and awareness for the world outside. Output should be given in audio form when possible, and visual output limited to essential data. Pilots must be given proper education and training before flying with the equipment and the TSP strongly recommends that manufacturers make some provisions for training, such as computer simulation programs."

**Whoever thinks,  
while strapping into the cockpit,**

*"I wonder what the accident  
rate is in gliders this year?"*

**Take no consolation in statistics  
when you fly. On this flight,  
your accident rate will be  
either 0% or 100%.**

**Assure the 0% by flying within  
your own personal limits –  
you know what they are.**

### OSTIV TSP recommended practice for

## Lookout to avoid collisions

LOOKOUT must be emphasized from the beginning of training.

### Background

There has been an increase in the number of mid-air collisions in recent years, possibly due to poor lookout and/or inadequate training of pilots. This recommended practice is addressed to all instructors and pilots and offers suggestions for improving pilots' lookout practices and for the training of new pilots.

### Teaching lookout

Use the first aerotows to do this — to teach the technique while the student is not flying. For winch launches, the lookout technique is to be taught, step by step, on the first and subsequent flights. During the first stage of teaching, emphasize the use of the horizon for attitude and hence speed control. This is also very useful for judging the turn rate and angle of bank. This assists the student to get used to keeping the eyes out of the cockpit and to refer to the instruments a minimum of the time.

Subtle ways of teaching pilots to look out:

- ask students if they have seen any other aircraft, to count them, and ask that they report to the instructor whenever they see another aircraft.
- the above technique can be varied in intensity by the instructor; for example, take control to avoid an "apparent" aircraft.
- ask students to fly towards a real object (not just a "north" direction for example) especially when turning (look out before turning).

### Technique for a good lookout

Scanning technique is to be used. Winch launches: pilots to scan ahead, above, and to the sides immediately before the start of the launch. Aerotow: first tows should be used to teach the scanning technique while the student pilot is not flying.

### Conditions leading to difficulties in seeing other aircraft

- clear, good visibility — many objects can be seen clearly so other aircraft are not easily distinguished;
- hazy conditions when the eye focusses nearby (about two metres) and not at a far distance required to see other aircraft easily;
- glare and dirty canopy causing reflections in canopy from bright clothing and maps;
- effects of polarizing sunglasses leading to occasional blind areas;
- the use of baseball caps and similar large-peaked hats,
- poor positioning or poor ergonomic design of instrument installations such as GPS and cameras.

### Rules for collision avoidance

Every student, before first solo and when practical, must be briefed and have demonstrated to them the rules for collision avoidance and overtaking. This should be emphasized again before first solo and at each subsequent dual flight.

### Thermaling

All student pilots shall be taught according to the standard thermaling rules. In addition they should practice thermal entry and thermal flying while maintaining separation from other aircraft before first solo. They shall also attempt to match their speed to the speeds of other gliders when at the same height.

### Ridge Flying

Pilots shall be well briefed and familiar with all rules specific to the ridge to be flown. ❖

## **The Book of the Best**

*by Ursula Wiese*

*the complete history of soaring achievement in Canada is now freely available on the SAC documents webpage.*



**Bon vol Pierre!**

À quelques jours de Noël, le Club de Vol à Voile de Québec vient de perdre un de ses bons membres. En effet, Pierre Rochette n'est plus. Il y a à peine deux printemps, Pierre faisait partie de l'équipe de négociation qui rencontrait NavCanada pour la sauvegarde de notre espace aérien.

Bien connu pour son rire communicateur, Pierre était un mordu du vol à voile. Son optimisme et son dynamisme manqueront à plusieurs.

Pierre a été par le passé président du CVVQ durant 4 saisons. Il a été parmi les pilotes qui ont découverts au fil des ans le potentiel du vol d'onde dans Charlevoix et a toujours été depuis un promoteur de cette facette du vol à voile.

Cette ascendance qui vient d'emporter Pierre ce 23 décembre sera sans doute la plus forte qu'il aura rencontrée de toute sa carrière de pilote. Bon vol Pierre!

Président du CVVQ, **Denis Pépin**

**Silverstar Soaring**

Located at the north end of the Okanagan Valley, our club of a dozen members is made up of eight glider pilots, an airline captain who provides the C-182 towplane, a teenager student glider pilot, and our Mr Fixit who loves the occasional ride.

Several flights of 2-5 hours have been made and Silver Star Mountain generally produces good lift. Malcolm Rhodes (LS-4) has ventured away to Kamloops and back (250 kilometres). The club Blanik is heavily used on Sundays and our 'Discovery Flights' and 'Silverstar Special' ride to 6500 feet is popular at \$100.

Selling flights through mall displays and media promotion has helped the treasury. However, new members seem hard to find. An evening at the Kelowna recreation centre featuring an introduction to gliding had 29 people enrolled.

Our combined fleet consists of a Blanik, 1-23, Monerai, LS-4, and a 2-22 — no shortage here, and membership growth is our most urgent task.

Visiting pilots are welcome and you will find us on the south side of the Vernon airport. You will marvel at the unequalled beauty of Kalamalka Lake, the lake with the multiple shades of green.

**Hans Kruiswyk**

**Alberta Soaring Council – the case of the theft of funds concluded**

The continuing saga of John Barry Woods came to a conclusion with his final sentencing in Court of Queen's Bench in Calgary. After pleading guilty in December, and then given leave from the court in January to obtain a psychological assessment pertaining to his alleged gambling pathology, Woods was unable to get an assessment prepared, so the hearing proceeded to sentencing on 15 March.

In sentencing, the judge spoke to the breach of trust of the fellowship of the Alberta Soaring Council, and of the significant theft from that position of trust that Woods held. He emphasized that this was a "betrayal of trust" at the highest level, and that this extended beyond the monetary loss. The judge reflected that the loss represented some twenty years of effort on the part of the ASC and all its present members. It also effected a loss in trust held between towpilot and glider pilot, upon whose actions each other's lives can depend. The thought and eloquence behind the ASC's Victim Impact Statement carried considerable weight in the judge's deliberation (he quoted from it).

Mitigating the judge's decision was the fact that Woods had no prior record, a good employment record, provided no impediment to investigators, and plead guilty at his initial hearing.

Woods was sentenced to 2-1/2 years in a federal penitentiary, and ordered to pay complete restitution to the Alberta Soaring Council. (The order of restitution survives any claim of bankruptcy.)

Cu Nim president, **Mike Glatiotis**

*Woods was elected as ASC treasurer in March 1997 and over the course of six months gambled away most of ASC's funds (almost \$100,000) in an attempt to pay his personal debts. The hard lesson here is to never have single signing authority on club checks.*

**Coming Events****Toronto Spring Glider Pilot Ground School**

Tues or Wed evenings 7:30 - 10:30 pm for 8 weeks, preliminary starting date, 7 or 8 April. Contact: Ulf Boehlau: days (416)410-3883, eves (905)884-3166, <ulf@problem.tantech.com>, <cm855@torfree.net>

**Eastern SAC Instructors' Course** 17-21 May  
SOSA. Course fee \$150. Contact: Tom Coulson (519) 651-2779 <tcoulson@istar.ca>

**Invermere Soaring Camp** 22-30 May  
East Kootenay Soaring Club and the Alberta Soaring Council are happy to revive the annual Mountain Soaring Camp at the Invermere Airport. The event will be run and attended by experienced Rockies soaring pilots who are available to coach mountain soaring techniques and micrometeorology, give checkflights, and promote a safe transition to flying at this exceptional site.

East Kootenay Soaring also offers glider rentals and checkflights. Camping available at the airfield, and the lake is very inviting! Soak your weary bones in the hot springs. Don't be shy, come fly. Questions? call event coordinators: Mike Glatiotis, Cu Nim, (403) 282-6121 <mglatiot@cadvision.com>; Don Miller, East Kootenay Soaring Club, (250) 342-3201 or, Matt Kazakoff, (250) 342-3006 <kaz@rockies.net>

**Canadian National Soaring Contest**

28 June- 8 July  
AVV Champlain, Saint Dominique, QC. Further info available by the next issue. Contact: André Pépin (450) 923-3631, <arcapep@cam.org>

**Western SAC Instructors' Course** 4-10 July  
Cu Nim Gliding Club, Black Diamond, AB. Minimum experience – 125 flights, 20 hours P1, CFI recommendation. We will be flying Blaniks on aerotow. Registration \$150, flying cost about \$200. Existing instructors welcome to attend as a refresher (no registration fee required). Known attendance is low at this point so call soon to reserve your spot and get info. Contact course director, Terry Southwood (403) 255-4667.

*Come and soar with the bald eagles!*

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- camp at the airport, B&B, or stay in Whistler
- area offers a wide variety of summer activities

**Glider rentals: L-13 Blanik, L-33 Solo**

**Instruction: glider pilot courses or book a number of lessons**

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404 Moray Street, Winnipeg, MB R3J 3A5  
email: [dhengr@mb.sympatico.ca](mailto:dhengr@mb.sympatico.ca)

The following record claim has been approved:

Date of flight	24 Jan 1999
Record type	3TP distance, citizen
FAI category	DOG[M] 3.2.5.5
Pilot / Crew	Charles Yeates / Kris Yeates
Sailplane type	Twin Astir, VH-IKU
Distance claimed	391.7 km
Task completed	Waikerie, S Australia to Loxton A/F to The Gums
Previous record	Unclaimed

It's time to go. After serving as Records committee chairman for five years it is time to hand on the task. At the time I assumed the post the use of a computer was convenient but not essential. Presently a reasonably high standard of computer literacy is needed to complete all record claim details. Another option would be the appointment of a "Qualified Person" to provide analysis of GPS flight recorder data files in support of the Records chairman. The work involved has generally been interesting and only occasionally frustrating. Some claimants still do not follow the procedures laid out in the *Badge and Record Flying* guide or comply with the requirements of the FAI Sporting Code. The upcoming rewrite of the Code should make its contents easier to digest. Please contact the SAC office if you are interested in the job.

### Walter tops the US "old farts" competition

Raise your glasses — Walter Weir defended his title at the US Seniors Championship in Florida by winning it for the second year in a row! Says Walter: "Under-age pilots (55), or those "cheating" by team flying were disqualified, so the US Team of Striediek, Byrd, Bowman and Bartell were *hors concours*. Guests who are "aliens" but otherwise OK qualify to win the trophies but are not recorded as winners by the SSA; you have to be an American. It was not the total triumph that last year was — I squeaked the contest win after Knauff got zero one day for an airspace violation and Mockler lost 100 points for exceeding the 6000 foot start gate lid and then not waiting below 6000 for five minutes. It's a very popular contest — people were being turned away. The field is only big enough for 50 entrants. Ray Gimmey is running an unsanctioned Western Seniors this year."

Tony Burton

### CAS winter XC soaring seminar a huge success

On 6 March, Canadian Advanced Soaring ran a winter cross-country seminar which was held at the Hawkesbury Golf Club. Despite the worries of travel with a lot of snow on the ground or falling, 103 pilots were present! John Bisscheroux stated that it was the biggest and best soaring seminar he was privileged to attend in his long gliding career.

**Svein Hubinette (MSC):** With record attendance, we also set another record — we ran out of some food. The caterer had never seen such a hungry lot — we had ordered food for 115 and even this was not enough so we got a refund on our meal charges! The location worked very well as we had the whole building for ourselves with ample bar/toilet/quiet corner facilities. After a delay due to the volume of participants, the seminar progressed roughly to schedule with most people staying until the end at about 7 pm. In addition to the seminar we had brief presentations on the SAC AGM, Nationals, and the Canadian World Team.

Pierre Pepin presented Ulli Werneberg and Nick Bonnière their "Best Flight of the Year" (BAIC trophy) plaques and record certificates for

their joint "free distance around three turnpoints" flight in 1998. Pierre then honoured two participants of long distinction in Canadian soaring: Bernie Palfreeman at 44 years and Jim Carpenter at 43 years, and then introduced the '99 Canadian Worlds Team Golf shirt with a pretty logo designed by Ron Walker. *Contact SAC (with size/quantity) to place your order at \$35 ea shipping and taxes included.* Although busy with the running of the seminar, I personally learned a lot and realized how much more I don't know — what an appetizer! — can I have seconds?

**Roger Harris (Guelph Gliding):** I certainly thought the seminar was very worthwhile. I found especially valuable the impromptu story of one fellow's first outlanding, two days after he had been soloed. It definitely made the point that you don't want to be hugging the field when you're flying your improvised circuit (there's no way I want to have to do a 360 turn [to lose height] on final!).

Not surprisingly, the open discussion about why more people don't pursue FAI badges was inclusive. There is no doubt that the clubs have to shoulder their share of the blame; many (most?) are not doing enough to make new solo pilots aware of the badge system's existence, let alone providing mentoring or (at least) holding up the more senior badge-holders as examples to follow. That said, my sense is that it is really the individual pilot's responsibility to drag him or herself up the badge ladder. I found the excuses offered at the seminar to be completely unconvincing:

1 "The paperwork is too difficult" There is some superficial merit in this argument, but no more. The forms required are not particularly difficult to complete, especially for badge legs where no turnpoints are involved. Anyone who can handle a job which produces enough income to be able to afford a sport like soaring is perfectly capable of properly documenting badge legs; you just have to be willing to spend a couple of hours to do it properly. Walter Weir is always willing to provide helpful advice and otherwise work with pilots in a constructive fashion.

2 "I don't understand the badge requirements, and no one will help me learn what they are or what I need to do" Wrong: Tony Burton has already helped out, you just have to read his guidebook carefully. It's available — free — on the SAC website [www.sac.ca/page12.htm](http://www.sac.ca/page12.htm), so you have no excuse!

3 "The standards are too easy in modern gliders" It is impossible to take this contention seriously. If it were argued that the standards are too high (eg. the large jump between Silver and Gold distance), I suppose you might be able to make a case, although I believe most pilots would take a lot of convincing. But too easy? This intuitively doesn't make any sense. Anyway, if someone owns a super-performance sailplane which they believe makes the FAI standards too easily achievable, I say use club equipment and try to complete all of your Silver C legs in a 2-33. That should address the "problem".

4 "I have completed some of the requirements but didn't document them because a badge won't do anything for me"

This misses the whole point of the badge system. Admittedly, a badge on the hat will not impress many people, even fellow soaring pilots; nor does it result in any money. But the pursuit of the badges itself almost always results in experiences and challenges which are their own reward. If you don't understand this, try reading Lincoln's book, *Soaring for Diamonds* (1968). If you still don't get it, all I can say for you is, "too bad, I feel sorry for you, you are truly missing out!"

In closing, a quotation from Iggulden's book, *The Clouded Sky* (1964): "You can have the best sailplane ever built; you can fly with the spiritual grace of an angel and the instinctive and thoughtless skill of a bird; but unless you can keep that secret fire burning in your heart and guts that won't let you admit you're down until your skid is rubbing on the hard ground, then you might as well settle down to Sunday flying over the airfield. You're not going very far cross-country". Thanks to the seminar organizers and speakers for working hard to ignite that secret fire in our bellies this season! ❖

### 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 7-12 ordered through FAI awards chairman – see Committees list</i>		
<i>Items 10, 11 not stocked – external purchase approval given</i>		
10	FAI GOLD badge 10k or 14k pin	
11	FAI DIAMOND badge, 10k or 14k pin and diamonds	
12	FAI Gliding Certificate (personal record of badge achievements)	\$10.00
	<b>Processing fee</b> for each FAI application form submitted	<b>\$15.00</b>
13	FAI badge application ( <i>download from SAC website forms page</i> )	n/c
14	Official Observer application ( <i>download from SAC website forms page</i> )	n/c
15	SAC Flight Trophies application ( <i>download from SAC website forms page</i> )	n/c
16	FAI Records application ( <i>download from SAC website forms page</i> )	n/c
17	Flight Declaration ( <i>download from SAC website forms page</i> )	n/c

Please enclose payment with order; price includes postage. GST not required. Ontario residents, add 8% sales tax. Items 1-6 and 13-18 available from SAC 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 en tissu, 3" dia.
Insigne FAI ARGENT, écusson en tissu, 3" dia.
Insigne FAI OR, écusson en tissu, 3" dia.
Insigne FAI 'C', plaqué argent
Insigne FAI ARGENT
Insigne FAI OR, plaqué or
<i>Les articles 7-12 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 DIAMAND, 10k ou 14k et diamands
Certificat FAI de vol à voile (recueil des insignes)
<b>Frais de services</b> pour chaque formulaire de demande soumis
Formulaire de demande pour insignes
Formulaire de demande pour observateur officiel
Formulaire de demande pour trophées de vol de l'ACCV
Formulaire de demande pour records FAI
Formulaire de déclaration de vol par feuille

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 13-18 sont disponibles au bureau de l'ACVV.

## CURRENT CANADIAN RECORDS (as of 24 Jan 99)

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

RECORD TYPE	OPEN	CLUB	MULTIPLACE (OPEN)	FEMININE
<b>DISTANCE (km)</b>				
3.2.5.1 <b>Straight distance</b>	Marsden/Apps 1093 1984		C Zwarych (R Adam) 495 1986	U Wiese 607.0 1986
3.2.5.2 <b>Distance to goal</b>	Marsden/Apps 707 1984		Zwarych (H McColeman) 310 T 1984	A Williams 305.0 C 1975
			J Proudfoot (G Fitzhugh) 304 C 1981	
3.2.5.3 <b>Out &amp; return</b>	T Burton 652.3 T 1993		D Marsden (E Dumas) 421.5 1979	U Wiese 328.0 1984
	W Weir 1032.1 C 1993			
3.2.5.4 <b>Triangle distance</b>	H Werneburg 803.7 T 1982	all unclaimed	John Firth (D Webber) 510.4 T 1986	J Midwinter 317.6 1988
	P Masak 1007.0 C 1987		C Yeates (K Yeates) 510.2 C 1989	
3.2.5.5 <b>3 TP distance</b>	Bonnière/Werneburg 559.7 T 1998		C Yeates (K Yeates) 391.7 C 1999	S Eaves 508.7 1995
	B Milner 1394.0 C 1993			
3.2.5.6 <b>Free out &amp; return</b>	W Weir 519.4 C 1995		not claimed	not claimed
<b>SPEED, Δ (km/h)</b>				
3.2.5.7 <b>100 km</b>	K Bennett 131.1 T 1989		D Marsden (M Jones) 98.1 1975	A Williams 54.5 C 1976
	P Masak 141.4 C 1985			
not FAI <b>200 km</b>	J Firth 110.6 T 1984		L Bungey (T Burton) 76.0 T 1983	M Barritt 68.7 C 1970
	C Yeates 116.3 C 1994		C Yeates (K Yeates) 79.5 C 1987	
3.2.5.7 <b>300 km</b>	K Bennett 113.1 T 1988		D Marsden (E Dumas) 69.9 T 1975	U Wiese 55.6 1983
	P Masak 148.9 C 1985		I Spence (J-R Fallu) 128.5 C 1991	
not FAI <b>400 km</b>	J Firth 99.0 T 1987		not claimed	not claimed
	C Yeates 119.7 C 1994			
3.2.5.7 <b>500 km</b>	W Weir 105.7 T 1991		J Firth (D Webber) 88.8 1986	not claimed
	P Masak 151.2 C 1985			
3.2.5.7 <b>750 km</b>	W Krug 108.8 1982		not claimed	not claimed
3.2.5.7 <b>1000 km</b>	P Masak 106.5 C 1987		not claimed	not claimed
<b>ALTITUDE (m)</b>				
3.2.5.9 <b>Gain of height</b>	D Mercer 8458 1995		Shirley (Campbell) 7102 1961	D Duffy 6575 1991
3.2.5.10 <b>Absolute altitude</b>	B Hea 10485 T 1981		Shirley (Campbell) 9083 T 1961	D Duffy 8986 T 1991
	W Chmela 12449 C 1974		Chmela (VanMaurik) 10390 C 1975	A Czervenka 9772 C 1969
<b>SPEED, O &amp; R (km/h)</b>				
not FAI <b>300 km</b>	H Werneburg 115.2 T 1983		Chmela (Rominger) 65.0 C 1976	U Wiese 59.6 1984
	W Weir 191.3 C 1989			
3.2.5.8 <b>500 km</b>	K Bennett 126.3 T 1992		not claimed	not claimed
	W Weir 150.9 C 1996			
not FAI <b>750 km</b>	W Weir 145.0 C 1994		not claimed	not claimed
3.2.5.8 <b>1000 km</b>	W Weir 142.6 C 1993		not claimed	not claimed
<b>SPEED, GOAL (km/h)</b>				
not FAI <b>100 km</b>	K Bennett 118.7 T 1985		W Chmela (R Zimm) 47.0 1971	not claimed
	W Weir 147.7 C 1992			
not FAI <b>200 km</b>	K Bennett 125.9 T 1992		not claimed	not claimed
	W Weir 143.0 C 1995			
not FAI <b>300 km</b>	W Mix 108.6 T 1966		Proudfoot (Fitzhugh) 70.2 C 1981	not claimed
	W Weir 145.9 C 1994			
not FAI <b>400 km</b>	T Burton 81.5 1990		not claimed	not claimed
not FAI <b>500 km</b>	D Marsden 97.1 1970		not claimed	not claimed
	W Weir 138.4 C 1993			



## Book Review

### **Only Seconds to Live: Pilots' Tales of the Stall and the Spin**

by Dunstan Hadley, Airlife Publishing Ltd., 1997, 208 pp. including index. £19.95

This rather dramatically entitled volume is a compilation of previously-published writing on spins and spin recovery technique (mere stalls receive scant attention). The contents are a wide range of magazine articles and book excerpts, chronologically organized into five parts commencing with "The Beginning of Spinning" (featuring the Wright brothers' adventures and the historic "spiral nosedive" of Lieutenant Wilfred Parke, RN) and concluding with "Into the Nineties" (discussing current training doctrine). Sandwiched in between, we find "Spinning in the Twenties and Thirties", "The Forties, Fifties, Sixties and Seventies", and "The Pros and Cons of Spinning and Stalling".

A retired physician with a background in aviation medicine, Dunstan Hadley is an active hang gliding enthusiast and former Fleet Air Arm pilot. Although he is not an instructor and makes no claim to any particular expertise in the subject, Hadley is quite sufficiently familiar with spinning to permit him to edit the various essays. Personal experiences with inadvertent spins in a Fairey Barracuda II and a Rogallo-type hang glider are detailed, and his initial spin training in a de Havilland Tiger Moth and a Grob Twin Astir are also briefly discussed.

The selections range from relatively technical articles, often complete with diagrams, to anecdotal accounts of particular incidents. The nice thing about an anthology is that one can dip into it without having to read the

entire book or follow any particular order. Each passage is intended to be complete and readable without reference to any of its fellows. If you have a daily bus/train commute, this might be a good book to take along.

Stalling and spinning are situations common to all fixed-wing aircraft, and *Only Seconds to Live* may be profitably read by both power and glider pilots. Yet the subject is of particular concern to the latter, since sailplanes so often fly close to high angles of attack and are thus especially vulnerable. Hadley has accordingly included a good selection of materials dealing specifically with soaring, featuring contributions by Maurie Bradney, Mike Cuming, Lou Frank, Derek Piggott, Bill Scull, and Philip Wills.

It may come as a surprise for Canadian pilots to learn that spin instruction is no longer a compulsory part of the Private Pilot Licence curriculum in the USA and the UK, having been replaced by 'awareness training'. Hadley provides a balanced assortment of the arguments for and against actual spinning practice, but his own views are clearly stated: "There is a risk involved in spin training. But there is a risk in any kind of flying, whether as a pilot or as a passenger on a regular scheduled airline flight, and a pilot who is competent in spin recovery is best placed to combat this risk. If an aircraft stalls inadvertently, or spins, there may be very little time to decide what to do and to do it successfully". SAC members would likely subscribe to that position.

The book is not indispensable. As indicated, all of its contents are previously published and, if you are lucky enough to possess an extensive library on flying matters, you may well already have access to at least some of them. That said, Hadley has done an admir-

able job of bringing together a representative collection of writing on spinning theory and practice, all of it well-edited and conveniently packaged in one attractive volume. *Only Seconds to Live* is an interesting and informative read for the soaring pilot.

Roger Harris, Guelph Gliding & Soaring

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# SAC Soaring Stuff / Articles de l'Air

March 99

	Price Prix	Size Taille	Qty Qté	Amount Total	T a x
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
8 SAC bow tie • blue with white gliders	20.00				✓ Nœud papillon • bleu avec des planeurs blancs
10 SAC pen, blue or burgundy with glider	7.50				✓ ACVV style bille • bleu ou bourgogne avec planeur
11 Tost ring (5 for \$99)	22.00				✓ Anneau de remorquage Tost (5 pour \$99)
Books from international authors					Livres des auteurs internationaux
20 SOARING CROSS-COUNTRY – ed. 2 Helmut Reichmann	58.00				SOARING CROSS-COUNTRY – ed. 2 Helmut Reichmann
21 FLYING SAILPLANES • Helmut Reichmann	42.00				FLYING SAILPLANES • Helmut Reichmann
22 SILENCE ON THE WIND • Helmut Reichmann	45.00				SILENCE ON THE WIND • Helmut Reichmann
23 SOARING WITH THE SCHWEIZERS Bill Schweizer	30.00				SOARING WITH THE SCHWEIZERS Bill Schweizer
24 UNDERSTANDING GLIDING • Derek Piggott (autog.)	40.00				UNDERSTANDING GLIDING • Derek Piggott
26 SOARING ACCIDENTS THAT ALMOST HAPPENED • Steve Dupont	12.00				SOARING ACCIDENTS THAT ALMOST HAPPENED • Steve Dupont
27 SOARING METEOROLOGY FOR FORECASTERS • SSA	16.00				SOARING METEOROLOGY FOR FORECASTERS • SSA
28 WINNING ON THE WIND • George Moffat	3.50				WINNING ON THE WIND • George Moffat
29 SOAR SIERRA • Jon Joss	3.50				SOAR SIERRA • Jon Joss
30 FROM THE GROUND UP, ed 27 • Isabel Pepler expanded & revised	32.00				FROM THE GROUND UP, ed 27 • Isabel Pepler
SAC crests, pins, cards					Ecussons et epingles de l'ACVV
40 Crest "SAC•ACVV", embroidered	3.50				✓ Ecusson "SAC•ACVV", brodé
41 "SAC" lapel pin	3.50				✓ Epingle "SAC"
42 Lapel pin • Glider	10.00				✓ Epingle • Planeur
43 Postcards (set of 5 sailplane photographs)	1.25				✓ Cinq cartes postales (photos des planeurs)
✿ 44 Postcards (set of 25 sailplane photographs)	5.00				✓ Vingt cinq cartes postales (photos des planeurs)

### 25 Words or Less

Susan Snell, who maintains the SAC Supplies page of the SAC website, would like to add a *very* short description of each of the books that are for sale above. This is to aid members who are considering a book purchase. Those of you who have read any of the books on the sales list, e-mail Susan a description <sps@lark.gawd.mb.ca>. Can you do a book review in 25 words or less!

### New product – free flight magazine binder

The SAC office has new sample binders for *free flight* and they look quite attractive. They are a marbled blue with the SAC logo and the name of the magazine on the spine. Each binder will hold 12 issues. The price is \$12.95 per binder (plus applicable taxes and a \$4.25 shipping charge).

	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)
52 Student progress book (10 for \$39)	4.50					Carnet de vol d'entraînement de l'élève pilote (français) (10 pour \$39)
54 French instruction manual	6.00					Manuel d'instructions de vol à voile rev. jan 80 (français)
55 <i>SOAR AND LEARN TO FLY GLIDERS</i> ed. 1993	19.95					Revision française en préparation
56 Air instruction notes (for instructors) (10 for \$40)	5.00					Instructions en vol – notes (pour instructeurs) (français) (10 pour \$40)
60 CISTRSC (green) / SWAFT (red) cockpit checklist (12 for \$12)	1.50	set			✓	CISTRSC (vert) / SWAFT (rouge) liste de vérification (12 pour \$12)
62 <i>AWARE</i> • Gagnon et al (weather manual) (5 for \$40)	10.00					<i>MÉTAVI</i> • Gagnon et al (manuel de la météo) (français)
64 Medical Facts for Pilots (10 for \$50)	6.25					Facteurs médicaux à l'attention des pilotes (français) (10 pour \$50)
✿ 65 Glider DI booklets (10 for \$25)	3.00					
FAI supplies • certificates, badges	see page 19 for complete list					Articles FAI • certificats / insignes
70 FAI 'A' badge, silver plate pin	6.00				✓	Insigne FAI 'A', plaqué argent
71 FAI 'B' badge, silver plate pin	3.00				✓	Insigne FAI 'B', plaqué argent
72 SAC Bronze badge, pin (available from your club)	3.00				✓	Insigne ACVV bronze (disponible au club)
74 FAI 'C' badge, cloth, 3" dia.	6.00				✓	Insigne FAI 'C', écusson de tissu, 3" dia.
75 FAI Silver badge, cloth, 3" dia.	12.00				✓	Insigne FAI argent, écusson de tissu, 3" dia.
76 FAI Gold badge, cloth, 3" dia.	12.00				✓	Insigne FAI or, écusson de tissu, 3" dia.
77 Flight Declaration form (available from your club)	n/c				✓	Formulaire de déclaration de vol (disponible au club)

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# Trading Post

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

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

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**Ka6CR**, fibreglassed trailer, portable aircraft radio, 28 foot chute. Call Eric Durance days at (519) 973-2728 or evenings at (519) 969-7889.

**Jantar Std 2**, #1207, 383h, basic instruments + PZL mech. vario, Rico elec vario with electronic TE, T&B, Dittel 720 ch. radio. Annualled and no damage history, enclosed all-alum trailer, tail dolly, wing covers. Contact: Paul Yardy, (905) 863-5728 (W) <[Paul.Yardy@nt.com](mailto:Paul.Yardy@nt.com)>

**Jantar Std 2**, C-GGEA, 747h, excellent cond, alum enclosed trailer. Rico, g-meter, EdoAire radio, chute. Asking \$26,500. Réjean Dallaire (514) 449-6333 (W), (514) 635-3470 (H) <[rejean@cegerco.com](mailto:rejean@cegerco.com)>

**Pilatus B4**, C-FHES, 1400h, standard instruments, alum Minden-type trailer. \$22,000. Heinz Portmann (403) 720-0262 (W).

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

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

**PIK20D**, this is the model with both flaps and spoilers, high performance yet docile. Chute, water, good basic instr package, factory trailer. US registered. \$32,500 firm. Brian Hollington (604) 467-0020.

**SZD-55-1**, brand new, to be registered as C-GENQ. Spring delivery. Trailer available. Ed Hollestelle, (519) 461-1464 ph/fx, <[solairecanada@compuserve.com](mailto:solairecanada@compuserve.com)>

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**Read the fine print in the Trading Post box above. Often the ads on this page are out of date or an ad is dropped although the owner wants it to continue. Note also that SAC maintains a For Sale page on its website.**

## Solaire Canada

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## wanted & misc

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**ILEC SB-7** variometer, 2 **SB-7** varios, good condition, working order, with manuals, no flask needed, asking \$US500 each. One 57mm **averager readout for SB-7**, \$US150. Kevin Clifton, (306) 978-1832, <[kev@envistatech.com](mailto:kev@envistatech.com)>

**Radio trade** - a panel mounted radio for an ICOM IC-A2 handheld. Mike Cook (250) 427-5471

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**Barograph**, Winter, ink and smoke, 12 km scale, \$250 Gilles (450) 377-5737.

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## suppliers

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**Flying High** Parachute sales, repairs, repacking, custom containers. Al MacDonald (403) 687-2225.

**LD-200**, variometre, hi-performance pressure transducer based varios with audio. No bottle required. Peter Masak (610) 738-9792, [masak@ix.netcom.com](mailto:masak@ix.netcom.com)

**MZ Supplies** Dealer for Schleicher sailplanes and parts, CONFOR foam, Becker radios, most German instruments. Ulli Werneburg, 1450 Goth Ave, Gloucester, ON K1T 1E4, ph/fax (613) 523-2581 [mzmz@aqua.com](mailto:mzmz@aqua.com)

**Solaire Canada** SZD-55-1, Krosno, PW-5, trailers, GPS and other sailplane stuff. Ed Hollestelle, ph/fax (519) 461-1464, <[solairecanada@compuserve.com](mailto:solairecanada@compuserve.com)>

**XU Aviation** Glider repairs in all materials. Chris Eaves (519) 452-7999, fax (519) 452-0075, <[xu-aviation@sympatico.ca](mailto:xu-aviation@sympatico.ca)>

## magazines

**SOARING** - the monthly journal of the Soaring Society of America. Subscriptions US\$43. Credit cards accepted. Box E, Hobbs, NM 88241-7504. (505) 392-1177, fax 392-8154. <[74521.116@compuserve.com](mailto:74521.116@compuserve.com)>

**NEW ZEALAND GLIDING KIWI** - the bimonthly journal of the New Zealand Gliding Association. Editor, John Roake. US\$32/year (seamail). Private Bag, Tauranga, NZ. <[john@roake.gen.nz](mailto:john@roake.gen.nz)>

**SAILPLANE & GLIDING** - the only authoritative British magazine devoted entirely to gliding. Bimonthly. BGA, Kimberley House, Vaughan Way, Leicester, LE1 4SG, England. £17.50 per annum. fax 0116 251-5939 <[bga@gliding.co.uk](mailto:bga@gliding.co.uk)>

**AUSTRALIAN GLIDING** - bimonthly journal of the Gliding Federation of Australia. \$A40.50 surface mail, airmail \$A55. Payable by cheque on an Australian bank, Bankcard, Visa, Mastercard. Box 1650, GPO, Adelaide, South Australia 5001. fax (03) 9379-5519. <[AdminOfficer@gfa.org.au](mailto:AdminOfficer@gfa.org.au)>

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For prices on all the fine products above as well as the Filser LX4000 and the LX5000 GPS Flight computers/recorders, the LX20 FAI flight recorder, radios, Winter instruments, LD100 varios etc, call Ed Hollestelle for more information. We offer a Canadian-built clamshell trailer by "Crown Trailers" at competitive prices.