

free flight • vol libre

3/02
Jun/Jul



Priorities

Air Cadets

I would like to start this column by offering greetings to the cadets enrolled in the 2002 Air Cadet Gliding Scholarship Training Course who are receiving this issue of *free flight*. *Free flight* is published by the Soaring Association of Canada (SAC), a volunteer organization dedicated to promoting the sport of soaring in Canada. Virtually all soaring in Canada, outside of the Air Cadets, takes place at SAC clubs. In a typical SAC club, more emphasis is placed on post-licence flying than on flight training and issuing licences. Most clubs have modern composite single seat sailplanes available for their members. Pilots are encouraged to soar, to fly cross-country and pursue FAI badges.

There are a couple of programs that SAC offers to assist Air Cadets who are interested in flying with a SAC club. SAC sponsors a number of continuing flying scholarships through the Air Cadet League. SAC membership is free for any active cadet who joins a SAC club.

Cadets interested in finding out more about SAC and soaring as it is practised at SAC clubs, can look at our website <<http://www.sac.ca>>. There you will find a list of clubs and their locations, back issues of *free flight* in electronic format that you can download, and other soaring-related pages. There is also some good information on <<http://edmc.net/soar/cadets/>>. SAC members who wish to learn more about the Air Cadet League of Canada can visit their website at <<http://www.aircadetleague.com>>.

Membership renewals

As you read this, no doubt, your soaring season is back in full swing. One task that is often overlooked by clubs in the spring rush is to submit SAC membership renewals promptly. Gliders insured under the SAC plan can only be flown by SAC members, so it's important that your treasurer submits renewals promptly. Renewals can be submitted by e-mail, mail or phone.

Volunteers

You may also wish to consider how you can contribute to the sport of soaring at the national level. There is so much work to do at the club level it is easy to forget that there is a national organization that also needs volunteers. There is much to be done at the national level and the beauty of working for SAC is that your effort is a benefit to far more pilots than it is at the club. So, take a look at the SAC committees and if one of them interests you, contact the committee chair — there is plenty to do. Enjoy your season, and fly safely!

Nous voulons souhaiter la bienvenue aux cadets de l'air qui se joignent à nous pour poursuivre leur progression dans le sport fascinant du vol à voile. Cette édition de notre revue, *vol libre/free flight* a été préparée pour vous dans le vue de vous présenter les avenues qui s'ouvrent à vous. Le vol voyage est l'essence même du vol à voile. En plaine, les cumulus vous porteront de thermique en thermique sur des centaines de kilomètres. En montagne, les vents vous feront voler aux ras des crêtes ou, suite à la création de l'onde, très haut au dessus des nuages. Vous aurez à choisir un club à poursuivre votre formation. Ce club est une organisation à but non lucratif qui vit pour et par ses membres. Tous collaborent et participent, autant dans la griserie du vol que dans le déroulement des opérations. Sans cet esprit de fraternité et de coopération, les clubs et leur atmosphère de camaraderie ne sauraient se développer.

Sur le site web de l'Association canadienne de vol à voile, <www.sac.ca>, vous trouverez une mine d'information. Sur le site, en plus de la liste des clubs, vous pourrez télécharger des articles de toutes sortes tirés d'anciens numéros de notre revue. La cotisation à l'Association canadienne de vol à voile vous est gratuite pour tous les cadets actifs dans les escadrilles de la ligue des cadets de l'air.

Howard Loewen
SAC vice-president

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“First rigging” of a newly acquired K-7 at Bluenose. There is a story to this which is explained on page 17.

photo: Trevor Lloyd

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Further Transport Canada freedom for Exhibition category and Amateur-built aircraft

Tony Burton

YOU MAY RECALL that in *free flight* 4/01, Paul Fortier, a member of the SAC Technical committee, wrote about new licensing regulations that were going to come into effect from Transport Canada. These would change the Exhibition and Amateur built categories of flight permits into the Limited and Recreational Certificates of Airworthiness respectively. This was in part to recognize problems arising in the way these flight permits were being used by owners. The estimate of the time until the regulations were changed was two years.

Now it appears that TC has decided not to wait for the passage through Parliament, but to introduce the changes immediately by issuing ministerial Exemptions from the current CARs until such time as the new regulations come into force.

As many glider pilots, including me, would want to know more about this since there are a good number of gliders in Canada operating under these two Flight Permit categories, I asked Paul to provide more information about the Exemptions for SAC members.

Paul responded:

"I don't think we have to worry too much about informing the owners affected by these changes. There is a campaign by TC to notify every owner who is likely to be eligible for the change in flight authority (in this case, all the owners of amateur built and all owners of the exhibition category who have flight permits). This campaign is conducted by each TC Region independently so the timing may vary (some Regions may only notify on the expiry of the flight permit).

The exemption that I have seen was to the owner of one glider at our club and was dated 15 March from the Ontario Region. Both exemptions are nearly identical save for the references to the standards for the particular aircraft. The exemptions are an opportunity for owners to trade a temporary Flight Permit for a permanent CofA before the changed regulations come into force. When the regs come into force, there will be no choice anymore.

This whole thing is part of an international movement to realign the types of flight authority in use by different ICAO countries. This is also a goal of the NAFTA partners (Canada, Mexico, USA). It must be said here that the flight permit was always intended to be a temporary document issued for a specific purpose but had become a catchall for all the misfit aircraft and was even issued as permanent in certain cases. TC sees this as an opportunity to move all the amateur-built and the exhibition aircraft to a permanent flight authority, thus reserving the flight permit document for its intended purpose.

A Certificate of Airworthiness carries a certain status within the international flying community that should facilitate cross-border activities. The C of A is a permanent flight authority issued for an aircraft, it is transferable to successive owners and should prove cheaper in the long run than annual renewals of flight permits."

In essence, the principle advantages to visiting your TC office (don't wait until a paperwork deadline arrives) and applying for either of these exemptions are:

- the application for a *Special C of A – Limited* removes the recent stricter requirements on holders of the Exhibition flight permit regarding annual flight permit renewal and log book proof of Exhibition category flight.
- the application for a *Special C of A – Recreational* allows the importation of home-built gliders and removes the "51% rule" (third party construction is okay). ❖



The SOARING ASSOCIATION of CANADA

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

free flight is the official journal of SAC.

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

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

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

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September, November

Towplane crosswind landings

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 aéroclubs nationaux. L'ACC a confié à l'ACVV la supervision des activités véliplanes aux normes de la FAI, telles les tentatives de record, la sanction des compétitions, la délivrance des insignes, 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 véliplanes bienveillants. Leur contenu n'engage que leurs auteurs. Aucune rémunération n'est versée pour ces articles. Tous sont invités à participer à la réalisation du magazine, soit par des reportages, des échanges d'idées, des nouvelles des clubs, des photos pertinentes, etc. L'idéal est de soumettre ces articles par courrier électronique, bien que d'autres moyens soient acceptés. Ils seront publiés selon l'espace disponible, leur intérêt et leur respect des normes de qualité du magazine.

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

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

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

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

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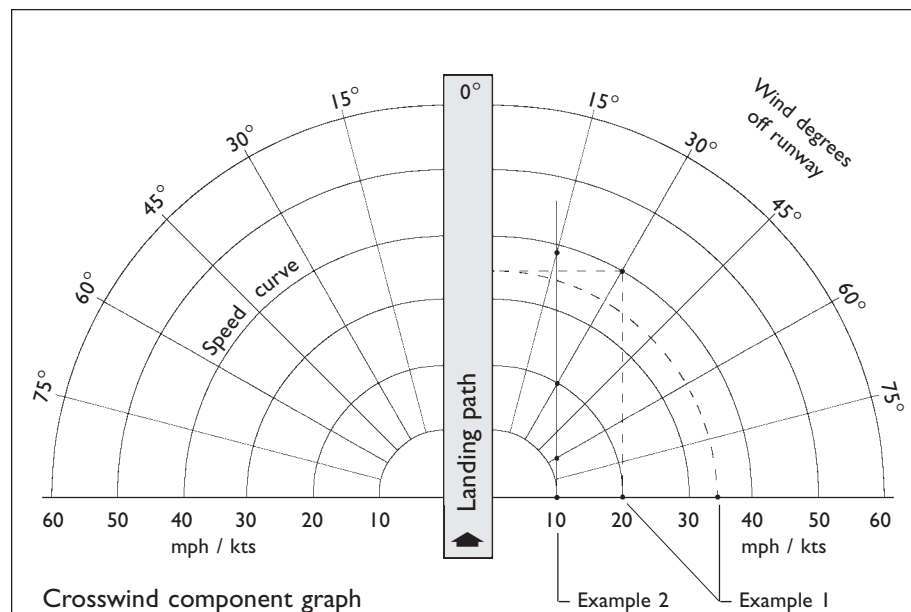
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Joe Gegenbauer, FT&S committee

LAST SEASON we had towplane accidents where crosswind was a factor. Let's review some aspects of crosswind operations with towplanes. Most of the towplanes used in Canada are tail draggers and they can be a handful to control on the ground. Power flying schools use tricycle gear aircraft and usually pilots convert to tail draggers later on. The pilots involved in the accident cases also did not have very much experience.

One has to familiarize oneself with the crosswind limitation of the particular model. It is a certification requirement that an aircraft be capable of safe operation in a 90 degree crosswind provided the speed of the wind does not exceed 20% of the stalling speed of the aircraft in question. This information, in conjunction with the known stalling speed of a particular aircraft, makes it possible to use the crosswind component graph.



Crosswind component graph

Given that a strong crosswind is within acceptable limits, one can determine from the graph the headwind and crosswind components. Say the wind is 30° off the runway at 40 kts (example 1). The intersection of the 40 kt "speed curve" and the 30° "wind degrees off the runway" is the starting point. Dropping a vertical line down from this point to the "mph / kts" line shows a crosswind component of 20 kts. A horizontal line from this point over to the "runway edge" then following the arc down along the speed curve shows a headwind component of 34 kts.

Example 2 For aircraft with a stalling speed of 50 mph:

Wind degrees off runway	permissible windspeed
90 degrees	0.2 x 50 mph stall speed
60 degrees	10 mph
30 degrees	12 mph
15 degrees	20 mph
	38 mph

During a crosswind takeoff in a single engine aircraft, the aileron control is held to the upwind side of the aircraft and the takeoff path held straight with the rudder. In tail wheel aircraft this may require significant pressure on the rudder pedal on the downwind side to compensate for the stronger weathercocking component in this type of aircraft. Use full aileron deflection initially, then as speed increases progressively reduce the amount of deflection to keep the wings level. During a glider tow the towrope will help to keep the aircraft in line with the runway as long as the glider is straight behind the towplane.

Flying with the Air Cadets

the best get a trip to Elmira

After the six week gliding course, the top cadet at each of the five Regional Gliding Schools across Canada (two from the Atlantic Region last year) is rewarded with a further one week trip to Elmira, NY, the birthplace of soaring in North America. These are their stories — do you remember when you were new to soaring?

Ben Hornett – 774 Sqn, St. Anthony, Newfoundland

On the 22nd of August, 2001 in Elmira New York, I found myself thermalling for the first time in my gliding experience. At 5700 feet agl, the highest I had ever been, I thought of where I had been four days earlier, the Atlantic Region Gliding School, where all 53 cadets had received their glider wings. I felt very grateful to be one of those cadets, finishing up one of the best summers of my life.

Each summer at the Regional Gliding Schools across Canada, approximately 320 Royal Canadian Air Cadets spend six weeks training to receive a Transport Canada Glider Pilot Licence. Cadets are selected for the summer course on a variety of criteria including entrance exam results, school marks, performance at the home squadron and an interview. Cadets who are selected attend the course at no cost to themselves other than the Transport Canada exam and licence fees.

Our daily schedule was very intense. The day began at 0600. By 0700 we were on our way to the field at Debert. At 0815 the first glider was in the air. On most days we would run a six glider / three towplane operation. We would spend until 1300 flying and pushing the gliders

back to the takeoff area as we were all overshooting fairly often. I was amazed at how quickly we all progressed. In slightly over two weeks and about 22 flights into the course, we began to go solo. After each day at the field in which somebody went solo, we made a ritual trip to the nearby river where everyone celebrated by helping to throw the soloist in.

From 1400 to 1700 we had ground school classes. There was much to be learned and it was often very challenging. For the first four weeks we had about two tests per week in preparation for the Transport Canada exam. Throughout the training I was amazed at how smoothly the operation ran. This was due to a group of officers and staff who were completely devoted to helping the cadets to be successful on the course. They did a remarkable job. I guess when you love what you are doing as much as these people do it's not like work at all.

As I sit and think of how lucky I am to have been able to gain this wonderful skill, the ability to fly, I wonder how many of us would have learned if not for this program offered by the Royal Canadian Air Cadets. Perhaps many of us would have in years to come. In any case I am so happy to have a head start on something that I will love for the rest of my life.



David Rancourt – 14 Sqn, Shawinigan, QC

Throughout all of last summer, I had the chance to receive my glider pilot licence from the Air Cadets at the Eastern Region Gliding School at St-Jean, Quebec. During my course, I learned how to fly a 2-33A training glider and to become a pilot. Mostly, they taught us how to glide but not how to soar due to the fact that we had to do about 1800 flights in one summer, so we did not have the chance to do flights over 15 minutes. At our graduation parade, they gave a prize called "La Bourse Elmira" which is intended for the best student of the summer for each region and I won that prize for Eastern region. This prize is a one-week soaring trip to Elmira, visit museums, meet Paul Schweizer. This is where it all began.

Every morning (or almost) we went to visit museums. At the Warplane Museum we saw some not really common airplanes, like a B-17G that flew circuits in front of us! Also, we visited the National Soaring Museum.

They earned their week in Elmira. Posed next to a 1-26 at the Schweizer Soaring School, left to right: Flight Sergeant David Parker, Sgt Ben Hornett, FSgt Jeremy Bruns (kneeling), Sgt Andy Ernewein, FSgt Scott Elgert, and Sgt David Rancourt.

That for me was the best one. We saw a lot of different gliders from all different times. I was so impressed! During one visit, we had the chance to meet Mr. Paul Schweizer and his wife. He told us some funny stories that happened during the 30s that were really interesting.

Now, let's go for something different — flying. In Air Cadets we fly only the 2-33A. At the Schweizer Soaring School we had the chance to do two solos in a 1-26. This was really stressful because we didn't have an instructor behind it, it is a one-seat glider. Also, we had a flight with an instructor in the SGS 2-32. Wow, it's so fast compared to the 2-33! We also had some lectures on how to soar that were useful for staying in the air a long time. I was aloft for 58 minutes on my first solo flight at Elmira!

Finally, I can say that it was the best trip I have had so far in my life. It gave me so many experiences to share with other cadets. So, if you have the time to go to Elmira, NY, at least one time in your entire life, you should try ridge flying or thermals at the Schweizer Soaring School.

Jeremy Bruns – 604 Moose Sq, Calgary, AB

The Canadian cadet program trains more than 320 glider pilots each year in five regional gliding schools during the summer. This year I became one of them. In order to obtain enough flights for each of about 65 cadets in each region, our flights are short (8-15 minutes). Each cadet is required to do at least 28 dual and 20 solo flights to satisfy Transport Canada and Air Cadet requirements. Finishing that many flights in six weeks is difficult, so we don't have time to teach soaring.

Training started for me last October at my home squadron when we started ground school. I went to scholarship boards in February where candidates are chosen, and in May I earned my scholarship. I spent six weeks in Gimli, Manitoba getting my licence at the Prairie Region Gliding School. Thanks to a unique relationship in between National Defence and the Air Cadet League of Canada, the summer is completely sponsored.

We had a lot of fun and worked hard in a team atmosphere that can be found in few other places. At the end of the summer and flight training, all the work was rewarded for everybody when they obtained their wings and licences.

I write this from Elmira, New York, where one cadet from each region is sent on a one-week soaring trip after the summer camp is over. On this trip, my peers and I were introduced to soaring. Although we had a few short classes on the subject beforehand, I didn't realize how exciting it could be before I tried it. We were allowed to stay up in the air for more extended periods of time. Elmira is an awesome place to soar. A combination of ridge lift and thermals here can allow a pilot to stay up for hours. It was a great opportunity to increase our hours and gain some experience while visiting new locations and meeting new people and instructors. On top of our flying, we got to tour the National Soaring Museum, the Warplane Museum and the Corning Glass factory. A major highlight for us was a meeting with Paul Schweizer where we learned about the roots of gliding flight at Elmira. It was special for us since we operate the largest fleet of

2-33s in the world with 62 sailplanes. It was a unique trip and an amazing introduction to soaring.

I believe that a soaring background is beneficial to anyone, and being exposed to it this early in my life, I know that even going on to fly commercially, I will never forget about soaring and I hope that others can have the same discoveries that I have had.

Scott Elgert – 819 Skyhawk Sq, Delta, BC

I wanted to be a pilot ever since I was a child. My first experience in a glider was at Fort Langley airport when my father and I went out to visit a friend. The smooth lines and large size of the glass ships owned by the Vancouver Soaring Association left me awe-stricken. Soon after joining cadets, I did everything that I could do to become a pilot. It was after an eventful familiarization flight in a glider with a friend that I realized how much fun it could be. Up to that point the previous flights in cadet gliders hadn't been that interesting. Now I knew that I wanted to be a glider pilot not only for the experience but for the challenge and the opportunity to fly in silence among the clouds.

My bags were packed and by the door. In six weeks, assuming I knew what I was doing, I would become a glider pilot. It was the same old grind — I had been on summer course before. But this time I was going to be a pilot. For six weeks I and my friends from around the province trained on the Schweizer 2-33A at the Pacific Region Gliding School at Comox, BC. Because we flew at an operational base we had to fly in the early mornings and late afternoon but we wouldn't have it any other way. For the summer your instructor would be your tutor, your guide to flight. Completely oblivious to the other cadets in other regions, and out of touch with the civilian world, we became pilots. If you didn't achieve your wings at the end of the summer, you at least made friends. It's hard not to make friends, when so many of us concentrate together to achieve one thing. My solo flight was followed with the traditional dunking, flight suit and all. Six weeks after the course began, the TC exam was written, the flight test was done, and it was over.

All that was left was the wings parade to receive the coveted and hard-earned wings, and a trip home to relax. Or was it? With the award presentation underway I discovered that my hard work and diligence had paid off. I received a total of three awards not the least of which was the coveted and totally unexpected CO's award for Top Glider Graduate.

Being the top glider graduate in my region, my summer was not over. For another week I would join the other top glider graduates from the other regions and travel to the Schweizer factory in Elmira, New York for a priceless soaring experience. Since the Cadet program does not teach soaring it was totally new ground being covered. The eight of us, six cadet graduates and two officers, enjoyed four mornings of tours and four afternoons of flying with the Schweizer Soaring School.

It was here that I knew that what I had learned in the past six weeks would not be forgotten. I now knew that I would be a glider pilot for the rest of my life. There is pleasure received from the knowledge that you ⇒ p21

The evolution of competition soaring

a 40 year overview

George Moffat,

from the National Soaring Museum *Historical Journal*

ONCE UPON A TIME ... isn't that how all good stories begin? Once upon a time I entered the Nationals, the 1962 Nationals, going on 40 years back, and it was a different world. What I'd like to do is a quick review from then until now with maybe a bit of a look into the future for a chaser. Using various Nationals across the years we'll have a look at changes and transitions in the three major sailplane classes.

Meanwhile, back in 1962, entering the Nationals was easy. All I had to do was show up, waving my newly-minted Gold C distance, and I was in, with loud cries of joy on the part of the organizers, who were scouring the El Mirage landscape for any warm-blooded contestants. They ended up with 32 entries, flying a motley assortment of mostly 15 metre ships — 1-23s, 1-26s, several of Dick Schreder's HPs and a bunch of others, mostly wood and fabric, one-third metal. No glass, since the first glass ship had yet to fly. Spans were generally right around 15 metres, with Dick Johnson's *Adastra* the only 17 metre glider. Only a handful of ships were over five pound wing-loading, with my HP-8, at 7.5 lbs, the heaviest. Water ballast was a few years down the line, as were electric variors, decent total energy, etc. Radios were in short supply since they were expensive and unreliable. Most of us did without. Average age of the contestants was 46, not so different from Nationals today.

George Moffat, of Marion, Maine, delivered the 29th annual Ralph S. Barnaby Lecture on 3 November 2001 following an evening dinner at the Wichita, Kansas Marriott Hotel. He took the 48 attendees on a 40-year tour de force of competition soaring as he has known it: the ships, the pilots, and the rules.

These lectures honour the late Captain Ralph S. Barnaby, USN, one of the founding fathers and former president of the Soaring Society of America. He was an honorary vice-president of the National Soaring Museum until his passing in 1986. Barnaby was a member of "The Early Birds", American pilots who flew before 1916. He broke Orville Wright's 1911 soaring record with a 15 minute, 6 second flight at Corn Hill, Cape Cod, MA, in 1929. The following year, he was glider-launched from the Navy airship "Los Angeles", testing the feasibility of flight from a dirigible. He headed the Navy's WWII glider program, and had a life-long commitment to the advancement of motorless flight in America.

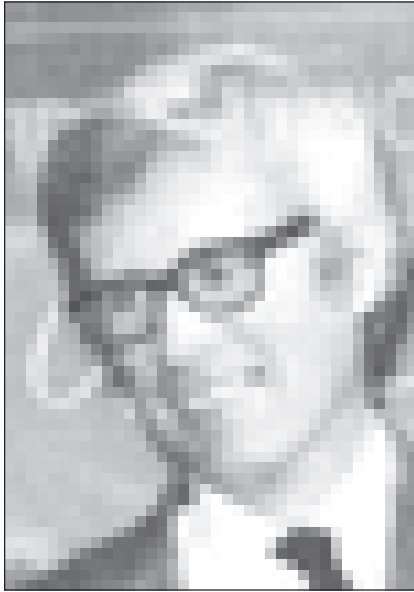
George Moffat is one of America's foremost competition pilots and has been soaring since 1958. Aside from winning several Nationals dating from 1969, and setting three triangle speed records, he won the World title in 1970 and 1974. He is an enthusiastic sailor, winning the Eastern High Point Trophy three times, and the Douglass Trophy for match racing against Canada. He has written about 85 articles on soaring and sailing in publications such as "Yachting", "Soaring", "Sailplane & Gliding", and "Popular Science". In 1974, he wrote "Winning on the Wind". He placed first in the 1975 Smirnoff Transcontinental Sailplane Race, and won the Coupe d'Europe European Sailplane Championship in 1977 at Angers, France. He holds an MA from Penn, taught at Rutgers Prep. School, Rutgers University, and was head of the English Dept. at Pingry School.

So what was a contest day like, way back when? Like today, it was evenly divided between speed and distance tasks. Distance missions were generally out and returns or triangles followed by a pilot choice last leg, ensuring a landing at or well after sunset a long way from home plate. There was one free distance, with the leaders ending up in Utah, putting about 1000 miles on their crew cars. Air conditioning was a rarity; 100 degree plus temperatures were not.

Let's take the first day as typical. The pilot meeting was nine o'clock and went on for a long time, as there were no photocopied handouts. Weather briefing was by a genuine, government supplied weatherman who might or might not know anything about soaring. The task, set in concrete, was announced at the end of the meeting, in this case a 236-mile triangle to the east, followed by a pilot selected open final leg. Start time was pilot selected, no great problem with only thirty entries, but due to be a huge one as contests grew to sixty and eighty ships later in the decade.

I crossed the start line — still three thousand feet in those days — at about one o'clock, making pretty good time to Twenty-Nine Palms, what with bases at 12,000 agl and a good tailwind. Of course, finding the turnpoint was anything but easy in those days of eyeball navigation. Next it was northeast to Amboy, crosswind, and then a long upwind slug to El Mirage. Feeling sorry for the light wing loading ships, I rounded at five thirty, in weakening lift, very tempted to land, but set off northeast toward Las Vegas. The sun was getting low — and so was I — as the Baker grade of the highway climbed up under me near the California border, and I just skinned across the five thousand foot pass thirty feet above the cars. Then it was a long nervous final glide to the Jean airport for a downwind landing on a narrow, rock bordered strip close by the highway. Fingernails got mighty short on final glides in those pre-computer, pre-GPS days.

Luckily there was a café at the end of the runway where I called in at dusk. It was at least a four-hour drive for my crew, so I had a leisurely dinner. It was pitch dark when I walked back to the ship. Suddenly I heard a scraping noise, looked up and saw a glimmer of white approaching. It turned out to be Graham Thompson in his Ka6. He had made the same dicey downwind final leg as I, landing at the unlighted airport, which he had only seen once before. As I took his canopy and started to help him out, Graham, a WWII Spitfire pilot, said, "Just let me sit here awhile." We got back to El Mirage about 5 am. The pilot meeting was at nine.



Nineteen sixty-nine

Let's fast-forward to the end of the decade, 1969, the last of the single class Nationals before the SSA belatedly organized a Standard Class Nationals a year later. Marfa in 1969 was also the largest Nationals ever to be held, the 82 contestants swelled by twelve foreign entries, as this was a sort of informal pre-Worlds for the American-hosted World Championships the following year. Notable were three past World Champions from Poland and Austria, and our own AJ Smith.

What else was new there? Practically everything: 45 of the 82 entries were glass, including the top six finishers. There were ten HPs of various models, and the

Schweizers, one quarter of the entries in the '62 contest, were down to a single ship. The serious competitors were all 18 metre except for two Cirrus-Bs on which I had extended the tips to 19 meters. Water ballast was common but in limited quantities. The Cirrus carried about 216 lbs and needed 500, minimum. Wing loadings were seldom over 7.5 lbs/ft² even with ballast. The superb ASW-12 was easily the best ship in the contest but hamstrung by its lack of water ballast and sole reliance on an unreliable tail chute for landing. The unflapped, under-ballasted Open Cirrus lacked penetration.

Designers were feeling their way slowly with glass, especially leery of early tendencies to flutter. On the instrument front, electronic variors were ubiquitous and reliable total energy was possible due to PZL diaphragm compensators. Radios were universal.

Tasking had changed radically thanks to Paul Bikle and his Area Distance task, commonly called the Cat's Cradle or the "Bikle basket". This grandfather of our present PST task allowed distance flying within a fairly limited area with the possibility of landing back at the contest site. In practice, the smart money elected to land at the farthest downwind point of the task area. Paul and his Southern California Competition group had also come up with a new turnpoint recognition system of tetrahedrons displaying dots, which was not so successful and would soon be replaced by cameras. Free Distance was still with us and would cost the loss of two flying days when Jan Wroblewski of Poland went 527 miles, dictating two rest days — naturally the best two of the contest. The foreign pilots who had come so far to fly were especially outraged, free distance having been long since abandoned in Europe.

Perhaps the most noteworthy change of the sixties was the arrival of new blood. MacCready, Johnson, and Schreder had dominated the fifties. The new decade saw the emergence of Allemann, Beltz, Byrd, Greene, Moffat, Scott, AJ Smith, and Striedieck, all of whom would become at least US Team members. Two would win a total of three World Championships. Most would be contributors to the invaluable Byars-Holbrook seminars, which were so instrumental in raising the level of US soaring.

Let's take a look at the free distance day, that dinosaur of a task soon to become extinct. The weatherman noted an impassible east-west front hanging about 200 miles north of Marfa with a 15-20 knot southerly leading into it. Going west offered no joy, but east looked possible for flights of up to 400 miles in weak, crosswind conditions. As it happened the day developed much earlier than the 1:30 predicted by the weatherman, and people with early start times made out. The weakness of the old pilot-selected takeoff time was clearly apparent, pilots stuck with late choices being almost an hour behind, fatal on a distance day. The Europeans had been using designated starts and a start gate for years.

The day was difficult, with lots of cu-nim to dodge. During the last two hours I hardly averaged 30 mph and finally found myself down to 800 feet above a small airport. Landing was tempting, but I kept going for another seven miles, plopping into a plowed field for 374 miles. I felt it was a good flight. And so it was, beating all the pilots like Scott, Johnson, and Greene with their years of local experience. What we didn't know was that the supposedly impassible front to the north had turned into a highway, allowing Wroblewski to exceed 527 miles and the top ten for the day to exceed 480. Strangers to Marfa, they all went where none of the smart money would have thought possible. For a soaring camp it would have been a fascinating day; for a Nationals task it seemed heavy on long distance driving and luck, not to mention the loss of two excellent subsequent days of flying.

For those interested in knowing more about the 1969 Nationals, see Bob Drew's superb hour and a half documentary film, *The Sunship Game*, available in video format from Direct Cinema, (310) 636-8200 for US\$30. For another view, try Joe Lincoln's 30 page account of the contest, which appeared in the September 1969 SOARING, and is, by far, the best Nationals write-up ever.

The seventies

The major change in American soaring in the seventies was the recognition of two new classes: the Standard in 1970 and 15 Metre in 1976, each with their own Nationals. This had the advantage of smaller Nationals and more competitive racing but cut down on the sense of fellowship among racing pilots. By the end of the decade few Standard class pilots knew many of the pilots in the other two classes and vice versa. Another major change, brought about by the mid-decade fuel shortage, and the subsequent banning of relights after off-field landings, was the role of the crew. Gone were the wild 100 mph chases. More and more crews just sat at the field, fighting off boredom, waiting for the pilots to return. Tasking became shorter to ensure that return.

In the ships, design improvements came rapidly. At the end of the sixties only a couple of the Open ships had spans above 18 metres, with max L/D usually in the low 40s. By the end of the decade nothing below 20 metres was a serious contender, and Dick Butler's beautifully improved 22 metre 604 dominated the class. Gross weight was up to 1450 lbs, 400 lbs heavier than the Cirrus I had flown in 1969. Best L/Ds were around 50. The new 15m class was, at first, ruled by the Pik-20, but by 1978 the new Schleicher ASW-20 dominated the class. In Standard class, no less than eight types of ship won the decade's Nationals, most with L/Ds right around 40.

New and notable pilots included Dick Butler, Eric Mozer, and Ray Gimme, who would become the first USA pilot to win Nationals in all the FAI classes. All would do well in World Championship competition.

The eighties The beginning of the eighties showed another technological jump, largely made possible by the widespread use of carbon fibre in construction. This super-strength material allowed increased span and much thinner wings. The new Nimbus 3 had a span of 24.5 metres, which I increased to 25.5 m on Dick Brandt's ship. This, along with a gross weight increased to 1930 lbs, produced a very carefully measured L/D of 62.5, up some four points from the 24 metre factory version. Schleicher, not to be outdone, came up with the ASW-22, which, tweaked by Dick Butler, reached similar gross and performance. Fortunately for the class, the 750 kg gross (1656 lbs) rule was invoked before the World Champs in 1983. Dick Brandt and I had had plans to up the gross to 2150 lbs ...

In the 15m class, the new Ventus, with considerably better high-speed performance, superseded the ASW-20, although the handling left a lot to be desired. Late in the decade the LS-6b showed similar high speed performance, better climb and far better handling to become the sailplane of choice. All of these ships had max L/Ds in the 43 range.

The coming of the Schempp-Hirth Discus in 1985 was a breakthrough in Standard class, using a swept wing design approach, which had been inaugurated by America's Wil Schuemann some years earlier. The result was outstanding performance coupled with equally fine handling. The ship dominated National and World competition for ten years.

An important development came toward the end of the decade with the advent of two-place performance sailplanes such as the ASH-25 and the Nimbus 3D. These ships offered the opportunity for two-place competition flying as well as advanced training. Woody Woods, with George Moffat as navigator-tactician, flew successfully in the '87 and '88 Nationals.

A highly notable new pilot was Doug Jacobs, who won the 15 Metre Nationals in '82, '84, '88, and '90, together with the Worlds in Rieti in 1985. Also looking promising were westerners Bill Bartell and Gary Ittner and Texan Ron Tabery. Keep in mind that there were a lot of promising newcomers, but I am limiting mention to those who made the US Team and came in at least in the top half of their class.

The POST task was the successor to the old Cat's Cradle, offering a prescribed area distance task with a landing back at the contest site. This task has gone through many manifestations as its fans attempt to cure its many problems. In the '80s it was all too often called when weather was so iffy that the Contest Director had no idea where to send the fleet. This increased the already high luck factor, often making the POST days the ones that decided the contest. Its big fans tended to be in the east, led by Karl Striedieck, who abhors gaggle flying; its many opponents, Bill Bartell among the more vociferous, were westerners. Up until 1999 these tasks were only used in World Championships if they were held in the United States.

Gagging, virtually unknown in the sixties since there was such a disparity in ship performance, became an ever-increasing plague in the seventies and eighties. A tendency

to undercalled tasks during the eighties to limit landouts increased the problem, as did the traditional start line. Let a Doug Jacobs or Karl Striedieck announce a start and a cloud of glass would surely follow.

The nineties Surprisingly, ship performance in the nineties increased only marginally, mostly by the addition of increasingly effective winglets. What *did* increase markedly was handling. Many of the older ships, especially in the Open class, varied from poor to abominable in the handling department. With the stiffness of carbon fibre and the pressure of the marketplace, the new ships such as the Nimbus 4 and Ventus 2 were not only even better in performance but also very easy to fly. In Standard class, the new LS-8 offered near 15m class performance in all but the strongest weather and, toward the end of the decade, the Discus 2 was even better. All three of the new Schempp-Hirth ships showed their ability when they won all three classes at the 1999 World Championships.

The nineties saw a proliferation of new classes such as the Sports class, the Motorglider class, the World class and the 18m class. These often thinly populated groups developed their own Nationals, frequently sporting ringers from the traditional classes hoping for a spot on the US Team for the World Championships. In turn, the many World Championships put great strain on the already limited team funds contributed by SSA members.

Perhaps the most significant change in contest flying came with the legalization of GPS in 1994. At a stroke, the navigational skills that many of us had built up for years were as dead as dinosaurs. So were many of the computer/varios we had used for ten years, such as my trusty Cambridge M-Nav, which couldn't accept flight recorders. Speaking for myself, I was dragged kicking and screaming into the new age. I used to like looking out the window at the landscape. Along with the new GPS came new computer/varios, ever more complicated and expensive. Starting in the 80s, these computers had begun to develop arrogant ways, demanding PULL and PUSH to the accompaniment of strident whistles and squeals.

It was only slowly that we began to realize that the GPS not only did away with navigation skills but also the very need for turnpoints, in the classical sense. Any ant hill, anywhere, could now be a turnpoint, no need for turnpoint books with photos and sketches or observable features such as airports. Indeed, why not have a pilot create his own turnpoint wherever he wanted. Unfortunately, the correct pronoun was still "he" 99% of the time as far as competition was concerned.

The twenty-first century Technologically speaking, the first breakthrough — and only one so far — was the *Eta*, 101 feet of span worth of *Eta*, the prototype of a new German series for the Open class. A year later we still haven't seen any reliable performance figures, but it's safe to guess that the max L/D will be in the low to mid-sixties. The max gross of the new two-place powered sailplane is 2029 lbs, some 380 lbs above the allowable gross for World Championship flying. All records will doubtless fall, especially in the hands of initial owner Hans-Werner Grosse, but what about the high speed performance at the legal gross and eight pound wing loading? The Germans have fiddled the gross for two-place motorgliders

up to 1880 lbs, but will the rest of the world buy this figure and thus outmode all existing Open class ships?

Otherwise, there seems little reason to expect any great performance or handling changes in normal span sailplanes unless some unforeseen new material allows the kind of improvement carbon fibre offered in the eighties. In the late eighties and nineties manufacturers belatedly began doing the kind of sealing that once owners had to do for themselves, so now that avenue to improvement no longer exists. The enormous cost and high risk of little or no gain will tend to discourage manufacturers although not designers, those incorrigible optimists.

Tasking ought to become much more innovative as we start to use more and more of the capabilities of GPS. Already the Turn Point Area Task with its variable radius TPs has been tried and seems promising.

Instruments seem bound to get more and more complex and expensive as they take more and more of the decision-making away from the pilot, just as GPS took over all navigational skills. Are thermal finders all that far in the future? Couldn't the finder direct the stick and rudder, bypassing the so often fallible mind of the pilot? Remember Ed Kilbourne's marvelous song about the LS-22 — no stick, no rudder pedals, just a pair of fibre-optic cables that plug into the brain? Or, come to think of it, why get into the sailplane at all when we could virtually direct it from the ground? It sure would cut down on accidents, and safety is always a major concern ...

So how does four decades worth of development change the look of a contest day? Let's take a look at the last day of the Senior Nationals in Florida last March. Why the Seniors? This contest brings together pilots from all the major classes and usually sports winners of many Nationals as well as US Team pilots. The day started with a brief pilot meeting at 9:30 for operational details and the weather. The task was to be announced from several possibilities at the 12 o'clock grid meeting, using the latest weather updates and selected by the CD together with two highly experienced contestant/advisors. The actual task could be modified in the air if necessary, one of the many changes brought about by Charlie Spratt, all-time, best ever Contest Director.

At the tie-down area, something different could be seen. Gone were the innovative and often imaginative home-built trailers — the only game in town in the early '60s. In their place were sleek, \$10,000 factory fibreglass jobs. You could have bought two new Ka6s for that in 1962. Gone also were a lot of the crews as at least a third of the fifty pilots were going crewless, a new development made possible in recent years by short tasks with few landouts and excellent, factory supplied tow-out equipment for the ships. Assembly was quick and easy, with most ships equipped with automatic control hook-ups. One non-improvement was weight. The new 15m ships averaged 100 pounds heavier than the Ka6s and 1-23s of yore.

At the windy grid meeting, delayed by a slow developing day, an Assigned Area Task of 77 miles with a one and one half hour time limit was declared, a first for the use of this task in the USA. Since each TP was assigned a radius of five miles and the actual turn was anywhere

a pilot chose within the circle, the actual distance flown could vary from 50 to 100 miles. Launch was nominally twenty minutes after the end of the meeting, but considerably delayed by weak conditions on this day. Charlie kept sending up sniffers, waiting until one could maintain 2500 feet — no more of those premature launches with half the fleet soon back on the ground.

Once aloft, I found the wind was 25 knots some 15 degrees off the first leg of the course; no guesswork here, thanks to GPS. Lift was about 2–3 knots to 3500 feet and rising, with cumulus and evidence of streeting. Charlie announced the last takeoff, giving 20 minutes to the opening of the GPS start. No more redline plus 20 knots, white knuckled starts to get the adrenaline pumping. At five minutes Charlie made one last check with his airborne advisors and the task was a go. No longer the situation of setting off on an impossible mission just because the CD had announced it four hours earlier.

Since bases were still climbing, I chose to wait 25 minutes before starting. Mistake. At 20 minutes the sky was looking mighty empty, and I was milling around at 2300 feet in a nothing type thermal. I finally struggled up to 3200. Where was that 4200 feet I'd had fifteen minutes earlier? I set off, cursing, but made fairly good time under tattered streets, with windblown clouds offering uncertain lift and the ground a bit too thrillingly close.

Since there seemed no percentage in bucking 25 knots winds longer than necessary, I turned as soon as we reached the edge of the area. Problem. How far would I have to go into the second area so as not to finish under the minimum time? Decisions, decisions. Some things haven't changed. All down the final leg, the computer was telling me the distance to the tenth of a mile and the required altitude to the foot, all optimized to the wind and MacCready setting dialled in; a far cry from the old fingernail chewing days. So was the finish, at a sedate, rule-required 100 feet. Gone were the dramatic 150 knot wormburners a foot off the deck we used to scare ourselves with.

So what perspective have I gained from nearly four decades of contest flying? In the beginning most soaring pilots were in love with the romance of flying, the feel of being at one with the sky. Yes, there were technical types and they tended to win, but they hadn't reached anything close to critical mass. But somewhere along the years as the ships grew better, the instruments fancier, and our knowledge greater, perhaps the love of flying, the romance of finding our way around the invisible geography of the sky, began to be replaced with a love of technology. Of course each of the gadgets — radio, computer variors, GPS, just to name a few, made flying more efficient and usually safer. But they all cut down on the variables and mystery that made soaring so intriguing in the first place. Have we gone too far? Will we? I hope not.

For me, soaring (and the kind of peak moments that competition brings, together with the wonderful assortment of soaring friends from many countries and backgrounds) has made up one of the richest parts of my life. They still do. I feel vastly fortunate to have competed in so many countries over the last four decades, which can be considered the formative years of modern soaring. ❖

Team flying and gaggles in soaring championships

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THIS PAPER deals with two particular aspects of soaring championships: team flying and gaggles. The purpose is to describe their mechanisms, how they have developed, and the impact on soaring as a sport. The paper is the result of personal observations as a competitor in soaring championships since 1966, including 14 World Championships from 1970 to 1999. Some observations originated from reports of World Championships from 1960 and onwards.

Team flying and gaggles are two fundamentally different aspects, but they are interrelated in some ways, and it feels practical to cover both aspects in the same paper.

History of Team Flying

WGC 1960, the birth of team flying. Soaring started as an individual sport. Strong teamwork was necessary to support the pilots before and after the flights, but in the air, the pilot was on his own, fighting the elements and his fellow competitors.

In the WGC 1960 in Cologne, Germany, the Polish team entered a new generation of sailplanes, the Open class Zefir and the Standard class Foka. These new sailplanes were greatly admired, and so were the new team-flying tactics of the two Open class pilots, Edward Makula and Jerzy Popiel. They flew close together and communicated closely. When the Standard class and Open class shared the same task, the Standard class pilot Adam Witek joined his Open class comrades and flew with them. At that time, use of radio was prohibited in the Standard class, but the excellent co-operation within the team enabled Witek to take part in the team flying anyway. The architects of the Polish team flying were the leaders Tadeusz Rejniak and Josef Dankowski.

In spite of the excellent Polish effort, the winners in 1960 were individuals. Rolf Hossinger (Argentina) won the Open class and Heinz Huth (Germany) the Standard class. Witek was second.

WGC 1962, Argentina, success for team flying. The Polish team continued the team flying, and had a great success, with Makula winning and Popiel second in their Zefirs. Huth won the Standard class, again an individual effort.

WGC 1965, England The Polish team flying tactics were again successful, with Jan Wroblewski winning the Open class in a Standard class Foka and his team mate Franciszek Kepka in third place. Rolf Spanig in the D-36, the forerunner of the new generation of GRP gliders managed only second, despite the superior performance of his next generation sailplane. There were some reactions about whether or not team flying was fair in an individual competition, but no measures were taken by IGC. Similar reactions have been aired at times ever since.

WGC 1968, Poland National pride demanded victory, but this time the Polish team machine did not work out. No other country had yet mastered the team flying, but the wooden Polish gliders were now surpassed by German made GRP in the hands of Austrian Harro Wodl, winning the Open class in a Cirrus, and Swiss-crafted wood, an Elfe flown by American AJ Smith, both of them individualists by all means.

WGC 1970, USA By 1970, the advantage of team flying was well known, but still only the Polish pilots were proficient at it. Others tried it, often with disappointing results, because the pilots were on their own without proper coaching, lack of strong leadership and lack of opportunities for training together. In Texas, the Polish pilots entered with wooden gliders inferior to the GRP that was now flown by almost every other country. In spite of this, Wroblewski managed second place in the Standard class. The winner, Helmut Reichmann of Germany said he practised loose team flying with his teammate Gerhard Waibel. The Open class winner, George Moffat, praised the very good and sometimes close co-operation with Wally Scott, although the two flew gliders of different performance.

WGC 1972, Yugoslavia The contest suffered from poor weather. A lot of cloud flying took place, which limited the opportunities for close team flying. Loose team flying and cooperation via radio was practised by many teams. The Polish pilots again had success, with Wroblewski winning the Standard class and Kepka third. The Soviet pilots Kusznetzov and Rudensky were also close team flyers with high placings. Also in the Open class, high placings were taken by Polish pilots Kluk and Muzsynski. But the top two in the Open, Ax from Sweden and Viitanen from Finland, were individual flyers.

WGC 1974, Australia The 1974 event was not won by team flying, but it nevertheless had an impact as IGC decided on a rule change following the Polish tactics on the last day. The Polish team captain sent out one of his Open class pilots, Mariusz Pozniak, to lead for the Standard class pilots on their task. In his 19 metre Jantar, he could mark the best thermals for the Standard class pilots, and Kepka won the day heavily and advanced to third place overall. Other pilots who noticed what was going on managed to hang on to this very fast group, and this helped Helmut Reichmann to advance to first place overall ahead of Ingo Renner, who was flying on his own and had a poor day. Renner had led the field for several days. Pozniak subsequently took off again and completed the Open class task.

The Polish tactics on this day were seen as unsporting by the IGC, and the rules were changed. After 1974 a pilot was no longer permitted to fly along the task of another class than his own.

WGC 1976, Finland The close team flyers did not do well in the Standard class, but the Polish pilots Julian Ziobro and Henryk Muzynsky scored well team flying in the Open class.

WGC 1978 France Close team flying was now also practised by the French Standard class pilots. There was no success for close team flying in this WGC, and Poland did not take part.

WGC 1981 Germany Sweden had great success in the 15m class, Ax and Pettersson placing first and second, and France had a similar success in the Standard class with Schröder first and Chenevoy third. It is well known that this success was not possible without cooperation between the pilots. Schröder even publicly gave his teammates credit for his victory. The successful pilots did not fly closely together, but were in continuous radio contact and reported the ever-changing weather conditions, thus helping each other to stay aloft and complete the tasks in the difficult conditions.

WGC 1983 USA Hobbs did not show any advantage for team flyers. The pilots who had great success in Paderborn by loose team flying tried to do the same, but it did not pay off in the very strong Texas soaring conditions, so the winners were individual flyers.

WGC 1985 Italy Mountain flying in Italy, where the top pilots were individualists.

WGC 1987 Australia Again a WGC dominated by individualists. But things were to change. France now had a new coach in the team, Jacky Clairbeaux, who was observing closely what was going on in gliding championships. A country with great resources to spend on gliding and excellent soaring pilots, France had had its share of success, but this was now to improve and make France the top country. The road map to success was strong coaching and team flying that was almost forgotten following the success of individuals in 1983-85.

WGC/EGC 1989-1998 The French team, using team flying, won more medals in gliding championships than any other country. This resulted from team flying controlled by strong coaching. CFHN, the new centre for high level competition in St. Auban, became the hotbed for the success. Jacky Clairbeaux managed to bring forward several pairs of pilots, for example Lopitiaux/Lherm, Napoléon/Gerbaud, Napoléon/Navas, and Caillard/Lopitiaux. In the WGC 1992, a first was recorded as Napoléon and Gerbaud shared first place with the same score for the 11-day championship. Teams of three were also tried. Sometimes the number three pilot was allocated to hang on to the fiercest contender among the competing pilots/teams and report their progress. In 1997, the French pilot Regis Kunz was seen following the German leader Michael Grund for a large part of the championships and reporting Grund's progress to his fellow teammates.

The Germans also developed team flying tactics during this time. This seems to have resulted more from the choice of the pilots than by the coaching efforts on the management level. In the EGC 1994 in Rieti, three German Standard class pilots managed to share first place by cooperation to obtain the same score. Ulli Schwenk and Robert Schröder cooperated trying (but failing) to beat Ray Lynskey in Omarama 1995. Successful team flying was also developed by Michael Grund together with Werner Meuser in the 15m class, resulting in first and second places in the 15m class in the 1997 WGC. In the EGC 1998, Grund led a team of four 15m pilots, using a special method. Grund was apparently flying in the lead,

and Hans Obermeier was trailing to pick up anyone who happened to fall behind.

Being a flying coach is not without risk, as Grund found out as his teams successfully produced a World Champion, Meuser, and an European Champion, Obermeier, while Grund placed second on both occasions. Nevertheless, Grund declared that team flying with his friends was an essential part of competition flying for him, and that he would quit if it was banned (*statement of Grund in an open discussion on collision risks in Bayreuth 1998*). Other pilots who he has coached in championships have given enthusiastic support for this kind of flying, and it seems to be a means to promote the interest for competition flying among young pilots in Germany.

WGC/EGC 1999-2001 More teams became proficient in team flying. Great Britain formed several teams who had overwhelming success in many international championships in the Club class, Women's and Junior's. A team from Italy, Galetto, Ghiorzo and Gostner placed 1st, 2nd and 4th in the WGC 1999.

Measures taken by IGC against team flying In the IGC, team flying has been an ongoing issue. Countries that are proficient in team flying and those working on improving their team flying skills do not want IGC to take action. The countries that don't have the resources to develop team flying would like to have a change.

The following measures have been decided or discussed but have not been carried through:

1. A decision was taken, on the initiative by IGC president Tor Johannessen, to reduce the number of participants per class to one per country. The number of classes in one WGC would be increased to four or five so the total number of participants would remain unchanged. This decision has *de facto* been overruled by other decisions that now allow even more than the previously allowed maximum of two per class per country.
2. FAI vice-president Alvaro de Orleans Borbon suggested that team flying, like cloud flying, be prohibited.
3. Use of multiple startpoints. This is a new method in WGCs. Reports indicate that it has been effective in reducing gaggles in national championships (Australia), but it has not been efficient in reducing team flying (WGC Australia 2001) because the pilots quickly learn to adjust their start times so they can get together after their starts.

Use of radio Some countries allow only one radio frequency for all competitors in their national championships. As continuous radio communication is necessary for team flying this rule minimizes the possibilities to team fly.

The current Annex A (Sporting Code championships rules) has a rule that limits radio communication for purposes other than safety, but it has not been possible to enforce this rule.

It is not clear if the way VHF aircraft radios are used to facilitate team flying by competitors is legal. The proce-

dures for identification when calling and responding are certainly not complied with by the competitors, who tend to use their names or recognize each other solely by voice.

There are other possible potentials for lawsuits if collisions occur between gliders on different radio frequencies, in particular if third party liability becomes an issue. This could happen if property damage or personal injury occurs to people on the ground from falling wreckage if a collision can be attributed to lack of communication because the colliding gliders were on different radio frequencies.

Arguments for Team Flying	Arguments against team flying
Team flying helps young pilots to get into competition flying and makes it more fun. <i>Statements from Michael Grund (Bayreuth '98), Axel Reich and Fred Gai (Lausanne 2001).</i>	By definition in the Sporting Code, champions are <i>individuals</i> .
Other sports, for example bicycle racing and Formula 1 car racing, use team techniques to produce individual winners. <i>Axel Reich, Lausanne 2001</i>	There are no championships for teams, and IGC has several times rejected team scoring for assigning champions.
If the nations are prohibited from forming teams, they will appear anyway, as pilots will form "teams" between nations. This already takes place, for example German and Italian pilots team flew during the WGC in St. Auban. <i>Axel Reich, Lausanne 2001</i>	An excellent pilot flying on his own stands a poor chance to win against a pilot of a lower standard who participates in a competent team. Team flying elevates the performance of a pilot above his actual ability. <i>Justin Wills, 1997</i> Team flying favours pilots from economically strong countries against pilots from small countries.

Gaggles and Leeching

A gaggle is the term for a number of gliders sharing the same thermal. Leeching means that a pilot follows another pilot. Gaggles often form through one, or a few, pilots leading and the rest leeching on these leaders.

Slow gaggles When the author begun competition flying in the 60s, gaggles were usually formed when thermals were weak and unpredictable. More often than not, a gaggle was an indication of weak soaring conditions. Some skilled pilots took detours around gaggles because they felt they would do better on their own rather than by struggling in weak lift in thermals filled with other gliders.

Small, fast gaggles In the early and mid-80s, the author on several occasions noted that a few skilled pilots, usually 5–6 of them, could get along faster than one skilled pilot on his own. If anyone in such a group gained an altitude advantage and tried to pull away from the group, he would soon find himself somewhat lower and see the group disappear ahead of him. With some luck he would be able to rejoin the group again. Often such a group was formed by pilots from different

countries, who were competing against each other but took advantage of each other to gain points on those who did not take part in a fast group.

Big, fast gaggles In the Pre-worlds 1986 and WGC 1987 in Australia, big and fast gaggles appeared. The size of such a gaggle could be 30 or more sailplanes. It appeared that leeching had become an art of itself. A pilot could score well just by hanging on to the big gaggle.

IGC has tried to reduce the number of participants per class to reduce the gaggles, but in reality, the number of participants has remained at 35-50 per class, and the member countries often try to get in more participants, so these attempts have failed.

Basic leeching An early leeching strategy was to stay near the departure point and listen to the start gate frequency. When a good pilot announced his start, the leech tried to start immediately behind him and hang on.

IGC recognized this problem early, and while many methods were tried to get away from the problem, most of the methods were not efficient. The following methods have been tried:

- Silent start* The need for announcing the start in advance by radio was eliminated when ground clocks and later camera clocks allowed the competitors to provide the start evidence by photography instead by timing from the ground. This proved inefficient in reducing gaggles, because all pilots keep hanging around the start point and as soon as the best pilots left, the leeches observed and followed. The result was the opposite to the objective — larger gaggles than ever.
- Start time interval* The rule specifies that there must be 15 minutes between starts. This means that a pilot can shake off leeches by making a fake start and then a real start a few minutes later. The leeches then have to proceed or to wait for 15 minutes. This method has sometimes been efficient, but is somewhat complicated to apply. With GPS starts, an event marker is necessary to indicate the real starts, and the pilots have some problems in remembering to use it in the sometimes complex situation involving monitoring of speed and altitude when crossing the start line.

Advanced leeching tactics Skilled pilots often use the strategy of starting late and using the earlier starters as thermal markers. By this strategy, they usually manage to catch up and form a fast gaggle. Being the last to start, the skilled pilot can have a rest and let the gaggle do the work until the final glide or until the last climb before final glide, where the final element of success is achieved by managing to beat the gaggle home. This can be done by staying slightly behind the bulk of gliders and observing where the lift and sink is on the way home, and avoid the sink and use the lift to gain an altitude advantage that is converted to speed for the last 10–20 kilometres of final glide.

A problem with this strategy is that all of the best pilots want to be the last one to start. This delays the starts considerably. Usually it means that flying the task takes place somewhat later than the best soaring conditions.

It has even happened that all pilots on a task landed out because everybody wanted to be the last one to start.

Another advanced method is to carefully keep track of the progress of other pilots. On a poor day, if some of the best competitors have had early outlandings, a wise strategy is to invite other pilots to join together and make as much distance as possible by using the invitees to help getting a high day-factor for the day.

A new idea... It is well known that many pilots use leeching to elevate their performance. Leeching is considered unsporting, but there has been no way to measure the effect or to control it. A new idea that could be discussed within the IGC is to analyze the flight logs for leeching and make the result public. It would even be possible to give a bonus to the leaders who find the thermals and penalize those pilots who use the lift found by others. Example: every pilot who uses a thermal found by another pilot would have to pay a penalty, say 5 points, to the pilot who found that thermal.

Such a system would, no doubt, change the behaviour of pilots and the way flights are conducted. It would reduce the urge to be the last one to cross the start line,

and using a thermal found by another pilot would no longer be tempting. A published penalty of just one point per thermal found in this way would probably be sufficiently embarrassing for the leeches.

Safety in gaggles Debates in IGC have often focussed on the safety aspect of gaggles. It would appear that some thirty gliders in one thermal would incur a high collision risk. In practice, the few fatal accidents that have occurred in WGCs and pre-WGCs happened during cruising flight (Uvalde 1991) or when only a few sailplanes were thermaling together (Bayreuth '98). Although there have been a few additional instances of collisions with only minor damage, it seems that pilots on this experience level are proficient in gaggle flying and that it is not as unsafe as one might believe.

Still, most pilots feel there is a large risk in gaggles, and some pilots even stop flying in competitions because they are scared by the collision risk in gaggles. This means competition gliding is likely to be more popular if we can reduce gaggles.

Further Ideas

Idea Have separate Team Champions and Individual Champions for the Standard and 15m classes. One Team and one Individual entry to be permitted per class and country. Separate tasks to be set for the Team and the Individual Championships, but they would be parts of the same venue.

Comment This would solve the problem that many countries want to enter more than just two pilots per class. The number of teams/individual pilots flying the same task would be less than in current championships, probably about 20 teams and 20 individuals per class.

There is no easy method to completely prevent pilots from assisting each other. The current continuous communication on dedicated frequencies is the key to successful team flying. Therefore, the use of a single contest frequency is likely to be the most efficient method to obtain more individual flying. It also enhances safety because a pilot can warn another pilot of a danger without having to search for a radio frequency.

Idea Use an imposed start time.

Comment If one imposed start time is used, the winner needs to be the first finisher (for the Assigned Speed Task). This method is unfair in handicapped competitions, because the lower performance gliders will take advantage of the higher performance gliders. (This could be the case already today; the team uses gliders of slightly different performance, and the pilot chosen to win flies the glider with poor performance and lets team-mate(s) with better performance lead for him.)

Idea The start times for each individual pilot could be imposed, say at one minute intervals. The leading pilot could be the first to start with the others following according to their rank.

Comment Similar methods have been tried (for example timing from the release) but were not popular, and were deemed unfair. ❖

Summary of tried and untried methods to counter team flying and gaggles

Method	Comment
Prohibit a pilot in a class from flying the task of another class.	Successfully prohibited by the IGC after occurrence in the 1974 WGC.
Silent start (ground clock or camera clock or GNSS clock/event marker to mark the start).	Tried without success.
Use only a single frequency.	Discussed in IGC but not tried in international championships. Seems to be efficient on national level.
Prohibit team flying.	Suggested by Alvaro Orleans de Bourbon, but never taken to vote.
Limit participants to one per class in individual competitions, with a separate "Class" for team flying.	Decided by the IGC for deployment completed by the year 2007, but other decisions are now working against this decision.
Limit the possibility to use VHF radio for tactical communication.	A rule in Annex A, but the rule has not been possible to enforce, except by using a single frequency.
Use of multiple startpoints.	Reduces gaggles but not team-flying.
Every pilot who uses a thermal found by another pilot would have to pay a penalty, say 5 points, to the pilot who found that thermal.	A new idea to be discussed. A complex method that needs clear definitions/specifications, a new computer program and a careful balance of penalties.
Bonus <ul style="list-style-type: none"> • for early starts • being first at turnpoints • being first home. 	Tried in some Masters competitions.

hangar flying

New angle on passenger flying

A New Zealand club has cancelled all its public passenger "one-off" intro flying. You would think that would be a big financial loss, but not so. Instead, interested people have to buy a \$300 training package which gives a half year club membership and two aerotow and three winch launched flights.

From keeping one in a hundred from their earlier policy, they average 10% who stay on to become good club members. And there is a bonus provided by those who never use all five of their paid flights.

from *Gliding Kiwi*

Youth Flight Canada assists owners who donate sailplane time

Youth Flight Canada was created by pilots in the power community to enable them to offer 'Young Eagles' type flights to disabled and disadvantaged kids, and earn tax receipts while doing it. I approached them for assistance in setting up a bursary at York Soaring by issuing tax receipts for donations. In 2000, they also gave me receipts for two trailers donated by construction companies, one a large "bunkhouse".

The recipient of the first bursary, Mary Dalli, received further support in 2001 and qualified as an instructor. There were two bursaries at York in 2000 (which pay all but \$50 of the membership fee, and all but \$5 for a flight (incl. tow and rental), and six in 2001. The financial support, the bunkhouse, car pooling, and the message they send to graduating Air Cadets at York has collectively increased the club's youth contingent to over 45 active members last year.

Dave MacKenzie, one of York's senior member, is an active supporter of the youth contingent; he drives them to the field and events, feeds them his trailer, and often feeds them. He owns a PW-5 which does not get heavy use. He volunteered the use of 50 hours time on the PW-5 to our kids, and Youth Flight Canada will give him a tax receipt for \$2500 (50 hours @ \$50/hour) representing the "fair market value" for the donation. He has offered to increase that if the hours are all used.

In practice at York, that means pilots between 16 and 22, with experience in the club's 1-23 and a checkout from a qualified instructor (including rigging, cleaning and derigging), will be permitted to fly it, and will receive their transition to glass, their first audio vario experience, and a private owner's maintenance ethic.

I contacted Charles Yeates to tell him of this. I reasoned that he might encounter a poten-

tial buyer who needed a partner to afford a PW-5, and the donation of time to young pilots at the buyer's own club, through Youth Flight Canada, might enable such a buyer to afford the plane by sharing use instead of ownership. Charles and his associate Dan Dawson have done more than just that. They have become associated with Youth Flight Canada as Advisory Board Members for Nova Scotia, and are donating the use of a PW-6 to a program they have initiated at Bluenose Soaring. In it, they will raise the money and administer the funds to offer two Air Cadets (already licensed) a bursary that will give them membership and flying at the above rates, and give them conversion to winch, conversion to glass, and preliminary cross-country. YFC is working with Charles and Dan to fund and extend this program, and we salute their initiative, imagination and enthusiasm.

YFC will cooperate with other clubs and/or pilots with similar initiatives. Anyone wishing to explore this or an alternative idea should contact me at:

Home (416) 231-9361, cell (416) 992-0100
e-mail: <cfpeter@total.net>

Details on Youth Flight Canada are on the website at <www.youthflight.ca>

Charles Petersen

International border doesn't measure up

As every schoolchild knows, the 49th parallel marks the boundary between the USA and western Canada, right? Well, not quite. Contrary to popular belief, the 49th doesn't mark the border in Alberta and BC, according to Winston Smith, senior engineer of the Ottawa-based International Boundary Commission.

Due to surveying errors made between 1872 and 1875, the border along Alberta's southern edge actually was set at between 61 and 244 metres south of the 49th.

"You can be sure the boundary isn't going to be changed now," says Smith. He said that the gravitational pull of the Rocky Mountains offset the bubble level of the type of equipment then used to determine the location of the 49th by measuring the angle between the horizon and certain stars. "They were aware at the time that they would be off," Smith said.

While the Alberta/Montana border is south of the 49th, the BC/USA border is north of the 49th by as much as 274 metres south of Vancouver.

Spin Haiku

*I approach to land
Controls are crossed and I'm slow
Reincarnation*

Del Ogren

a Russia pilot flying at Sylvania Soaring Adventures, WI <<http://n-lemma.com/ssadventures/>>

Cover photo has a story

On the face of it, this looks like a photo of a typical group of gliding club members rigging a glider in preparation for a day's flying. But there are stories behind this picture.

The first story starts with one of the club's K-7 gliders landing slightly short of the runway and colliding with a tree. Happily, the pilot and passenger escaped without injury. The glider, however, was a write-off.

Over the following winter, some of our members did some extensive searching and eventually located a possible replacement at Aero Club Furth in Germany. Not wishing to buy a glider "sight unseen", the chairman of the search committee volunteered to go and have a look at it. As he is an airline pilot, he was able to do this at minimal cost and I think his expense claim for the trip came to \$75! He was very impressed with the glider and recommended that we buy it.

He was also very impressed with the hospitality he received from the members of Aero Club Furth. When the time came to ship the glider to us, one of their members drove it to Bremerhaven where it was loaded onto a container ship bound for Halifax. Clearing the glider through Customs and obtaining the necessary documentation from Transport Canada proved to be something of a challenge but eventually it arrived at Stanley airport ready to fly. This happened on 24 May 2001 during our "Fly Week" so we had a large crew eager to rig it and get it into the air. The photo was taken as we were just about finished putting it together and, shortly afterwards it took its first flight piloted by our CFI, Karl Robinson.

Although this was an exciting event for us, it was also an occasion tinged with sadness. It was only a year earlier, during "Fly Week 2000", that George Graham was killed in a gliding accident. George was a founding member of the club and a real driving force. So, it was suggested that his initials "GRG" be incorporated into the aircraft registration. His widow, Hope, who is now our club president, agreed to this and we now are reminded of George every time we fly this glider.

Every picture tells a story and those are the stories behind this one.

Trevor Lloyd

To power pilots: why do you soar?

Marty Vanstone wrote that a member at VSA is making soaring presentations for various public groups and, in preparation for the question, he asked other members to try to express their reasons for flying gliders rather than power. Here is one reply:

"What initially attracted me to gliders is quite different from what keeps me addicted to soaring. First it was just the pure, minimalist, utterly functional beauty of the sailplanes themselves. They are stripped down to the bare essence of a flying machine. They have an appeal similar to a racing yacht or bike. Even our trainers are high performance machines compared to the powered aircraft any of us is likely to fly! You put on a chute and sit down reclined under a streamlined canopy with the wings out behind you and an unobstructed field of view, and it's not unlike the jets many of us dream of flying. A sailplane, however, has *no* purpose other than to allow its pilot the sheer exhilaration of flight.

After that there was the strangely addictive rush I felt each time I found lift and felt that upward acceleration. Not unlike the rush a surfer feels when catching a wave. There is the fact that the flight itself is the journey and destination. There's no need for a "\$100 hamburger" to give you a goal. Particularly entrancing is the feeling that the sky itself is welcoming you and allowing your play. The constant improvisation needed in the changing conditions to allow flight is most engaging. A great deal of a soaring flight cannot be planned ahead — as a result I find it takes up all of my mind and allows me to exist in the moment and (this only time this ever happens to me except sometimes when playing music) forget all of my other worries and problems. Actually I find soaring to be like playing jazz or other improvised music in many ways.

For something more down-to-earth, if any of your audience happen to be dedicated motorcyclists, just tell them that the difference between soaring and powered flight is the difference between riding a bike and driving a car. They'll understand."

Youth soaring scholarship at Gatineau

Several clubs have established scholarships or bursaries to assist younger members cover the costs of learning to soar. The Adam Sneyd Soaring Scholarship is such a bursary which was initiated and financed at the Gatineau Gliding Club (GGC).

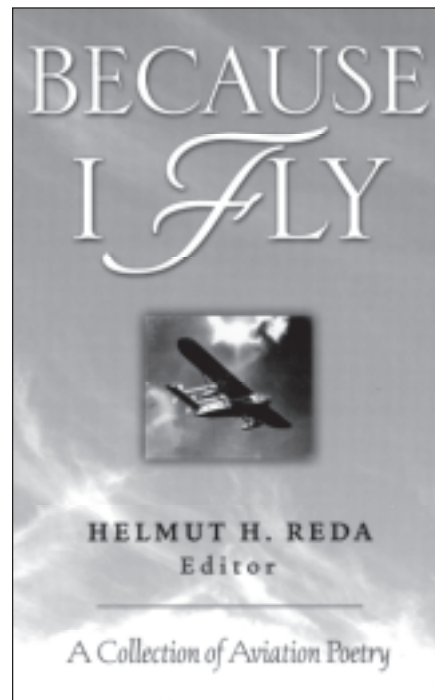
Adam Sneyd was a young glider pilot and a popular member of the GGC who tragically lost his life to Hodgkin's Disease in 1996 at the age of 16. Impressed with his courage, as well as kindness and thoughtfulness towards others, the club members established a flying scholarship in his name. This bursary, valued at between \$750 and \$1000, is awarded annually to a young person between the ages of 15-1/2 to 25 who has proven interest in the field of aviation, who has had no previous instruction in flying or gliding, who would like to obtain a glider pilot licence, but who has limited financial means.

The memorial fund is established through investment earnings on capital, through private donations and by special fund-raising events within the club. For example, in 2001 a Gourmet Pot Luck dinner was held; all the food was donated, and a charge of \$20 for adults and \$10 for teens was levied for the privilege of tasting the specialties of others. The dinner, together with a raffle (here again the prizes were donated), generated well over \$1000 for the fund in a relatively easy and enjoyable way. Currently the fund is valued at approximately \$10,000.

Club members have also found other ways for a bursary recipient to boost his or her flying time, such as washing or polishing gliders, trailers and cars, or taking over someone else's field duties, in exchange for tows.

To date there have been three recipients of the Adam Sneyd Scholarship, and at least one candidate intends to pursue a career in aviation. The fund has an excellent chance of providing qualified young people with glider training at GGC for many years to come.

Pat Robinson



Because I Fly is a "best of the best" aviation poetry anthology that contains 176 poems written by 75 poets covering a time span from 1869 to 2001. The book is divided into fifteen topic areas so readers can quickly find poems that interest them. There are sections on soaring, the beauty of flight, pilot's personality, war, military service, death, astronauts, classics, and even a special section for children. McGraw-Hill went all out and published a beautiful book that would make the perfect present for those who love aviation. Further book details can be found at <www.geocities.com/becauseifly/>.

Lt. Col. USAF Helmut H. Reda is assigned to the US Mission in Geneva. He is a graduate of Embry-Riddle Aeronautical University and of the USAF Test Pilot School. "After starting collecting, I discovered there were no current, all-encompassing sources of aviation poetry readily available. Previous books were hard to obtain, outdated, and sometimes difficult to understand. I collected and studied over 115 books and magazines and other sources from the USA, UK, Canada, France, and Australia."

I was happy to assist the author in his poetry search for the book, and three appear from *free flight*, two from Tom Schollie of ESC.

In his book, Reda exposes readers to the experiences of flight through poetry. "Pilots are a special breed of people who uniquely experience more than most people do. This book describes those experiences in a medium that does justice to flying's eloquence."

Because I Fly, 231 pages, ISBN 0-07-138085-X, US\$16.95, available at most major bookstores and also at www.bookstore.mcgrawhill.com or Amazon.com.

reviewed by Tony Burton

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SAC Scholarships

Peter Corley Scholarship

This scholarship, which currently has a value of \$2300, is aimed at assisting younger SAC members finance their post-secondary academic pursuits. The principal requirements for candidates are: SAC membership, flown a glider solo during the past 12 months, and be attending a post-secondary academic institution (university, etc.) or accepted for admission to one. The 2001 winner was Neils Petersen, who is studying aeronautical engineering at Ryerson University and who is a member of York Soaring. Application forms and additional details are available on the SAC website: <www.sac.ca>.

SAC Air Cadet Flying Scholarships

Beginning in 2002, SAC will finance five continuing flying scholarships for recent graduates of the Air Cadet League of Canada's cadet glider pilot training program. SAC would like to offer thanks to Frank Woodward, a former member of Canada's national soaring team and close friend of the late Barrie Jeffery, for the active encouragement and financial support that he has provided to this initiative.

The scholarships have a cash value of \$300 each, which will be paid to gliding clubs for credit to a cadet's account. To enhance the program, club's are strongly encouraged to provide a matching grant to scholarship recipients. The successful candidates will be selected by the Air Cadet League of Canada. The scholarships will be awarded at the Cadet's graduation ceremonies in August.

Encouraging badge flying by young pilots

One of the more interesting SAC trophies is the "Silver C-Gull Trophy". This is awarded to the youngest SAC member, under 21 years of age who is awarded an FAI Silver badge. This trophy was not awarded in 2001, as no one qualified for it.

To encourage more badge flying by younger pilots, SAC has waived all badge application fees for junior and air cadet members for 2002. Included are: the application fee, the cost of the FAI certificate, and the badge itself. Additionally, in 2002 the winner of the Silver C-Gull trophy will be reimbursed for the cost of tows and glider rental charges for the badge flights directly related to qualifying for the trophy.

It should be also remarked that SAC has reduced the cost of A, B and Bronze badges by 50%. These badges are now available to clubs for \$3 each.

Jim McCollum

Basic flying rules

1. Try to stay in the middle of the air.
2. Do not go near the edges of it. The edges of the air can be recognized by the appearance of ground, buildings, trees, the sea, or interstellar space. It is much more difficult to fly there.

thanks to the
Western Canada Aviation Museum

Jim pleads: please **DO NOT** mail badge claims to the office – they are to be sent directly to the Badge chairman. See Walter's address on page 20.

Unknown article close to home

Alex Upchurch sent me this e-mail: "I got my *ff 2/02* and upon reading the 'unknown' article on page 14 about a gear-up Blanik landing, I immediately recognized it as having appeared in *free flight* before. Flipping through my back issues I found it on page 15 of 3/93, credited to Peter Hewitt in *Australian Gliding*" ...

As editor, I had a very senior's moment with that one! The article had been sitting around as a good back-up space filler for some time and I completely forgot where it came from after the source and author got accidentally stripped off. I was convinced it was from the *Gliding Kiwi* or *Sailplane & Gliding* magazines and was going through all their recent issues to find it, without success.

Tony Burton

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Coming Events



26 Jun - 5 Jul **Canadian Nationals**

Practice 24-25 June. All classes, Hawkesbury.
Info and registration on SAC website.

7-13 Jul **SAC Western Instructors Course**

Hope, BC. Director, Ian Oldaker, *Course application form on the SAC Documents page – contact SAC office for signing up to receive materials ahead of the course, etc.*

15-19 Jul **CAS (Eastern) Cross-Country Clinic**

Club de Vol à Voile de Québec at St. Raymond (close to Quebec City). For information about clinic, go to CVVQ clinic website at <www.cvvq.net>. Info: Bruno Bégin <bruno.begin@hospitalite.com>.

27 Jul - 5 Aug **Cowley Summer Camp**

The biggest and best soaring camp in Canada. Provincial soaring contest held midweek. Hosted by ASC. Tony Burton, <free-flt@agt.net>, (403) 625-4563. Details on Cowley at <www.souaring.ab.ca>.

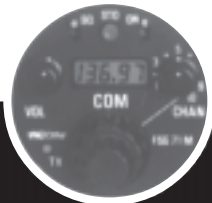
12-16 Aug **CAS (SW Ontario) Cross-Country Clinic**

SOSA hosting, Spencer Robinson, <contactcas@netscape.net>.

5-14 Oct **Cowley Fall Wave Camp**

Camp has been extended this year to increase the odds for long distance visitors. General Cowley info at <www.souaring.ab.ca>. Tony Burton, <free-flt@agt.net> (403) 625-4563.

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Roger Hildesheim

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(613) 838-4470, <Lucile@istar.ca>

The following Canadian records have been approved as of 9 May 2002:

Pilot	Tracie Wark
Date/Place	18 January 2002, Tocumwal, Australia
Record types	100 km speed to goal, Feminine & Club, citizen
FAI category	SAC only
Sailplane type	LS-4, VH-CXP
Speed claimed	106.4 km/h Fem. (101.1 km/h Club)
Task completed	Start: 35° 36.212 S, 145° 50.271 E Goal: 34° 52.679 S, 146° 36.734 E
Previous Record	Not claimed
Pilot	Tracie Wark
Date/Place	18 January 2002, Tocumwal, Australia
Record types	Free out & return, Feminine & Club, citizen
FAI category	DOF 3.1.4b
Sailplane type	LS-4, VH-CXP
Distance claimed	320.2 km Fem. (304.2 km Club)
Task completed	Tocumwal to 34° 34.904 S, 146° 46.293 E and return
Previous Record	Not claimed
Pilot	Tracie Wark
Date/Place	20 January 2002, Tocumwal, Australia
Record types	500 km O & R speed, Feminine & Club, citizen
FAI category	DOF 3.1.4g
Sailplane type	LAK-12, VH-GDE
Speed claimed	99.6 km/h Fem. (86.1 km/h Club)
Task	Tocumwal to West Wyalong, and return
Previous record	Not claimed
Pilot	Tracie Wark
Date/Place	20 January 2002, Tocumwal, Australia
Record types	Out & return distance, Feminine & Club, citizen
FAI category	DOF 3.1.4e
Sailplane type	LAK-12, VH-GDE
Distance claimed	510.3 km Fem. (441.4 km Club)
Task	Tocumwal to West Wyalong and return
Previous record	Not claimed
Pilot	Spencer Robinson
Date/Place	24 January 2002, Tocumwal, Australia
Record type	200 km triangle speed, Club, citizen
FAI category	SAC only
Sailplane type	Standard Cirrus, VH-GZR
Speed claimed	81.6 km/h
Task completed	Tocumwal, Urana, Wood Park, and return
Previous Record	Not claimed
Pilot	Tracie Wark
Date/Place	25 January 2002, Tocumwal, Australia
Record types	400 km triangle speed, Feminine & Club, citizen
FAI category	SAC only
Sailplane type	LAK-12, VH-GDE
Speed claimed	95.0 km/h Fem. (82.2 km/h Club)
Task	Tocumwal, Yanco South, Walla Walla, and return
Previous record	Not claimed
Pilot	Tracie Wark
Date/Place	26 January 2002, Tocumwal, Australia
Record types	200 km speed triangle, Feminine & Club, citizen
FAI category	SAC only
Sailplane type	LAK-12, VH-GDE
Speed claimed	99.9 km/h Fem. (86.4 km/h Club)
Task completed	Tocumwal, Bundure SW, Daysdale, and return
Previous Record	Marion Barritt, 68.7 km/h, 1970 (Club, S. Robinson)

FAI badges

Walter Weir

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

The following badge legs were recorded in the Canadian Soaring Register during the period 6 Nov 2001 to 2 May 2002.

SILVER BADGE

943 Todd Benko Central Alberta

DIAMOND GOAL (300 km goal flight)

Patrick Templeton SOSA 304.5 km LS-4 Tocumwal, AUS

DIAMOND ALTITUDE (5000 m gain)

Pierre Brousseau Quebec 5400 m Std Cirrus Baie St-Paul, QC

GOLD DISTANCE (300 km distance flight)

Patrick Templeton SOSA 304.5 km LS-4 Tocumwal, AUS

GOLD ALTITUDE (3000 m gain)

Pierre Brousseau Quebec 5400 m Std Cirrus Baie St-Paul, QC
Heinz Kaun Beaver Valley 3180 m 1-26 White Sands, NM

SILVER DISTANCE (50 km distance flight)

Todd Benko Central AB 101.1 km Dart 17 Cowley, AB
Remy Knoerr Gatineau 58.9 km L-33 Pendleton, ON
Michael McKay Gatineau 57.8 km Jantar Pendleton, ON
Michael Groh Gatineau 58.9 km L-33 Pendleton, ON

SILVER/GOLD DURATION (5 hour flight)

Jacques Faribault Outardes 5:20 h Pilatus B4 Bromont, QC
Alan Grant SOSA 5:10 h 1-26 Rockton, ON
Stirling Ward Vancouver 5:04 h L-13 Hope, BC
Allison David Scott Bluenose 5:20 h K-7 Stanley, NS
Yves Bastien Montreal 5:06 h PW-5 Hawkesbury, ON
Chris Lowe Cu Nim 5:10 h Jantar Cowley, AB
Francis Miquet Montreal 5:25 h PW-5 Hawkesbury, ON
Todd Benko Central AB 5:35 h Dart 17 Cowley, AB
Remy Knoerr Gatineau 5:23 h L-33 Pendleton, ON
Brian Davies Central AB 5:09 h Duster Cowley, AB

SILVER ALTITUDE (1000 m gain)

Robert Toupin Outardes 1640 m L-13 Bromont, QC
Jacques Faribault Outardes 1470 m Pilatus B4 Bromont, QC
Alan Grant SOSA 1930 m 1-26 Rockton, ON
Allison David Scott Bluenose 1190 m K-7 Stanley, NS
Chris Lowe Cu Nim 1400 m Jantar Cowley, AB
Pierre Lavoie Quebec 1400 m Puchacz St-Raymond, QC

C BADGE (1 hour flight)

2698 Robert Toupin Outardes 3:05 h L-13 Bromont, QC
2699 Pierre Couture Outardes 1:55 h L-13 Bromont, QC
2700 Eric Michalski SOSA 1:12 h L-23 Rockton, ON
2701 Jean-Pierre Foucault Outardes 1:30 h L-13 Bromont, QC
2702 Alan Grant SOSA 5:10 h 1-26 Rockton, ON
2703 Daniel Weinkam Vancouver 1:34 h Grob G102 Hope, BC
2704 Allison David Scott Bluenose 5:20 h K-7 Stanley, NS
2705 Joe Holmes Vancouver 1:11 h L-13 Hope, BC
2706 Chris Lowe Cu Nim 5:10 h Jantar Cowley, AB
2707 Francis Miquet Montreal 5:25 h PW-5 Hawkesbury, ON
2708 Remy Knoerr Gatineau 5:23 h L-33 Pendleton, ON
2709 Michael McKay Gatineau see Silver distance
2710 Michael Groh Gatineau see Silver distance
2711 Mario Fiset Quebec 1:15 h Grob G102 St-Raymond, QC
2712 JF Le Houillier Quebec 1:30 h L-23 St-Raymond, QC
2713 Thomas Moss Quebec 1:38 h L-23 St-Raymond, QC
2714 Brian Davies Central Alberta 5:09 h Duster Cowley, AB

... the air cadets

from page 7

can soar among the clouds and remain up there all day. It's a feeling unequalled by flight in a powered aircraft. Although, due to time restraints, our flights in Elmira were limited to forty-five minutes, a sense of accomplishment is received when you are able to stay up that long while ridge soaring. A greater sense of achievement is bestowed when you release off tow at 2500 feet and climb to 5000. It might seem comparatively small but when it's your first time that you are able to put an entry in your logbook over twenty minutes, it means a lot. We were given the opportunity to fly the Schweizer 1-26 and 2-32, both a step ahead of the 2-33.

The time in Elmira was superb. Harris Hill and the surrounding area was beautiful and truly a great soaring environment. The memories and the people I met there will forever occupy a place in my mind. It truly was a priceless experience. For now, I return to flying the cadet gliders while searching for a place to soar; this it seems, is just the beginning. Something tells me that no matter how many licences or endorsements I receive, the pleasure and pure self-achievement gained by soaring will forever keep me with the sport, wherever my life leads me.

David Parker

742 National Capital Sq, Ottawa

Last winter, after a series of difficult exams and interviews, I received word that I was to be a candidate for the Royal Canadian Air Cadet Glider Pilot Scholarship program. My summer began in early July. I left my home in Ottawa on a Friday morning on the bus; my destination, the Regional Gliding School

(Atlantic) in Truro, Nova Scotia where I was to spend the next month and a half. The course began the following Monday, after a weekend of getting to know the 52 other cadets I would be sharing everything with for the duration of the course.

Our instructors threw the book at us. For the first week of the course, weather kept us away from the airfield, so we were kept busy learning the specs of our gliders (the 2-33), briefing on what we would be learning each flight with our flight instructors, and studying the "From The Ground Up" cover to cover. Luckily for us, the pace relaxed somewhat when the weather broke and we took our first trip to the field.

The average Air Cadet Regional Gliding School runs an operation more complicated than an aircraft carrier. Most days, we ran six gliders and three towplanes simultaneously. As we became more proficient at moving the gliders, we stepped it up to eight gliders and four towplanes. The only way this can be done is through an amazing amount of teamwork and uniformity of procedures. We were like a well-oiled machine: crews pushing gliders back to the runway, instructors briefing students, climbing in and out of gliders, and the endless circuit of L-19 towplanes.

Although it was a lot of work, most of all, gliding was fun. There are few joys in life greater than flying, and there are fewer 16 year olds who can say they fly airplanes. After all the flight tests had been completed, and the dreaded TC exam had been written and passed, on graduation day we all took a deep breath, turned around, looked back, and realized that the last six weeks of our lives had been more incredible than anything else we

had ever done. We had all made friendships that would last forever, and had experiences we would never forget, and best of all — we were all pilots!

Andy Ernewein

201 Dorchester Sq, Innerskip, ON

Throughout the 2001 summer I had the opportunity to receive my glider pilot licence through the Air Cadet program. Upon completing the course I received the award that entitled me to participate in a one week trip to Elmira to experience the thrill of soaring. During our training, soaring was strictly prohibited to maximize the amount of flights for each cadet. But in Elmira, instead of having a ten minute time limit we were allowed up to 45 minutes. In Elmira the 45 minute mark could easily be surpassed.

Our day would normally consist of lectures and tours in the morning and soaring in the afternoon. Also, when we visited the soaring museum we got a chance to speak with Paul Schweizer about gliding in the 1930s.

Soaring in Elmira is a different experience from what we as cadets are used to in Canada. For instance, in Elmira there is an enormous amount of traffic arriving and departing from the airport all day. Sometimes we were even on final beside a B-17G, a bomber that the Warplane Museum operates. The museum was even nice enough to give us a tour through it.

Elmira is a beautiful airport with the Schweizer factory and soaring school on the field. All in all, the trip was amazing, and I suggest that if you are planning a trip in the near future, consider going to Elmira, NY. ❖

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... crosswind landings from page 5

Crosswind landings are normally somewhat harder to manage than crosswind takeoffs. This is mainly due to the difference in the difficulties presented in maintaining control over the aircraft while speed is decreasing instead of increasing, as in the takeoff. During takeoff, as the speed of the aircraft increases, aerodynamic control of the aircraft becomes progressively more positive. As the aircraft's speed decreases following touchdown, the effect of this control decreases. Unless you have absolutely no doubt as to the safety of the proposed maneuver, consult the Crosswind Component Chart.

There are two basic methods for counteracting drift while executing a crosswind landing; a third procedure evolves through combined use of the two basic methods and is employed by experienced pilots when unusual or special circumstances prevail.

The sideslip, or wing down method, of counteracting drift is probably the most popular of the two basic methods. It affords the important advantage of continuity of general flight control positioning, from before touchdown to the end of the landing roll, and will compensate adequately for acceptable crosswinds under most conditions. When using this method, avoid initiating the slip into wind too far back on the final approach unless there are other reasons for slipping. As you approach the landing area and drift becomes apparent, sideslip into wind sufficiently to counteract this drift. Keep the longitudinal axis of the aircraft aligned with the centre line of the runway by using rudder. On touchdown devote all possible attention to keeping the aircraft rolling in a straight line to forestall any tendency of the aircraft to groundloop. The aileron should be held toward the upwind wing after contact with the ground to prevent it from rising out of control.

When the sideslip method is used, the upwind main wheel will make contact with the surface first. However, when this occurs the downwind side of the aircraft is still airborne and under normal circumstances the upwind wheel is not subject to undue weight or impact stress.

The second basic method for eliminating drift when landing in a crosswind requires much skill, excellent timing and a great deal of practice and experience. For this reason it is seldom used in elementary training. With this method the aircraft is maintained on a heading (crabbed) into wind, so that the flight path of the aircraft is aligned with the runway centre line. This means that the longitudinal axis of the aircraft is not aligned with the intended landing path and if contact with the surface is allowed in this condition, there is a risk of damaging the landing gear or subsequent difficulty in controlling the aircraft. Therefore, at the precise moment prior to touchdown the longitudinal axis of the aircraft must be swung into line with the runway, primarily by coarse use of rudder. This method requires prompt and accurate rudder action to line up the aircraft exactly with its direction of travel over the ground at the instant of contact. If contact is made too soon the aircraft will land with crab; if contact is too late, it will land with drift. Either will impose side loads on the landing gear and impart ground looping tendencies. Since the safety factor of the upwind wing being low is absent, a gust at the wrong moment can easily cause trouble.

The L-19 tow-pilot's notes state: In crosswind conditions a preferable landing technique to full-stall is a "wheelie". In this landing configuration, touchdown occurs while the aircraft is still a few knots above stall and in a flying attitude. Immediately on touchdown the control column is checked slightly forward to ensure the aircraft remains on the main wheels. As the speed falls off, the control

column is eased back and to the upwind side. This brings the tail in contact with the ground and ensures that the upwind wing is held down. Directional control is maintained by use of the rudder. The control column must be held full back until the rollout is completed and the aircraft is stopped. During the landing roll do not divert your attention from the rollout itself, or a groundloop is very possible.

Another consideration is the towrope — it should be dropped prior to landing with a strong crosswind. The rope will be on the downwind side upon landing and will pull your tail in that direction, making it more difficult to keep on the runway centre line and may also snag a runway light.

After considering all technical aspects one has to look at psychological factors as well. It does happen quite frequently that the ongoing operation puts pressure on the tow-pilot to continue towing when he or she really should stop towing due to gusty crosswind conditions or exceeding crosswind limits. Past accidents tell us to be vigilant and to keep an eye on those limitations and pressures, particularly if the tow-pilot is new or inexperienced.

If you are the tow-pilot, admit it if you have difficulties with the crosswind and your landings and stop towing until the situation improves. Other situations develop when one glider pilot wants one more tow but the tow-pilot is tired or dehydrated. In our club, the Chief Tow-pilot's recommendation is to get out after ten tows to have a rest.

Checking out new tow-pilots may put some pressure on the experienced pilot to complete the checkout in the required time. Make sure that you the checker or you the new tow-pilot are 100% sure that you are comfortable with the performance and the experience flying the towplane. We do endeavour to have a 100% safety record. ❖

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www.gatineauglidingclub.ca

GREAT LAKES GLIDING

NW of Tottenham, ON
Richard (416) 385-9293 (H)
Longhurst (416) 540-3132 (cell)
www.greatlakesgliding.com

GUELPH GLIDING & SOARING ASSN

W of Elmira, ON
Paul Nelson (519) 821-0153 (H)
www.thinkage.on.ca/~GG&SA/

LONDON SOARING SOCIETY

between Kintore & Embro, ON
Sue & Chris Eaves (519) 268-8973
www.lonet.ca/res/mkeast/soar.htm

RIDEAU VALLEY SOARING

5 km S of Kars, ON
club phone (613) 489-2691
www.cyberus.ca/~rvss/

SOSA GLIDING CLUB

NW of Rockton, ON
Pat O'Donnell (519) 753-9136
www.sosaglidingclub.com

TORONTO SOARING CLUB

airfield: 24 km W of Shelburne, ON
Alex Foster (905) 773-4147
www.aci.on.ca/~boblepp/tsc.htm

YORK SOARING ASSOCIATION

7 km east of Arthur, ON
(519) 848-3621 airfield
(416) 250-6871 info
www.YorkSoaring.com

Prairie Zone

PRINCE ALBERT GLIDING & SOARING

Birch Hills A/P, SK
Keith Andrews (306) 249-1859 H
www.soar.sk.ca/pagsc/

REGINA GLIDING & SOARING CLUB

Strawberry Lakes, SK
Jim Thompson (306) 789-1535 H
(306) 791-2534 W
www.soar.regina.sk.ca

SASKATOON SOARING CLUB

Cudworth, SK
Brian Galka (306) 652-7966 H
(306) 956-7200 B
www.ssc.soar.sk.ca

WINNIPEG GLIDING CLUB

Starbuck, MB
Susan & Mike Maskell (204) 831-8746
www.wgc.mb.ca

SWAN VALLEY SOARING ASSN

Brian Tigg (204) 734-5771

Alberta Zone

ALBERTA SOARING COUNCIL

Tony Burton (403) 625-4563
free-flt@agt.net
Clubs/Cowley info: www.soaring.ab.ca

CENTRAL ALBERTA SOARING CLUB

Innisfail A/P, AB
Brian Davies (403) 318-4577 H
ve6ckc@ccinet.ab.ca

COLD LAKE SOARING CLUB

CFB Cold Lake, AB
Tim Woods (780) 594-2215
club: (780) 812-SOAR
twoods@cablerocket.com
www.clsc.homestead.com

CU NIM GLIDING CLUB

Black Diamond, AB
Al Hoar (403) 288-7205 H
(403) 569-4311 B
www.soaring.ab.ca/free-flt/cunim

EDMONTON SOARING CLUB

N of Chipman, AB
John Broomhall (780) 438-3268
www.freenet.edmonton.ab.ca/soar/

GRANDE PRAIRIE SOARING SOCIETY

Beaverlodge A/P, AB
Terry Hatfield (780) 356-3870
www.soaring.ab.ca/free-flt/gpss/home

Pacific Zone

ALBERNI VALLEY SOARING ASSN

Port Alberni A/P, BC
Doug Moore (250) 723-9385

ASTRA

Harry Peters (604) 856-5456
petersh@uniserve.com

BULKLEY VALLEY SOARING

Smithers A/P, BC
Leif Jorgensen,
newpro.elec@telus.net

CANADIAN ROCKIES SOARING CLUB

Innisfail A/P, BC
Don Miller (250) 342-3201
Ernst Schneider (250) 342-7662
ews@soartherockies.com

PEMBERTON SOARING

Pemberton A/P, BC
Rudy Rozsypalek (604) 894-5727
www.mountain-inter.net/soaring/

SILVER STAR SOARING ASSN

Vernon A/P, BC
Malcolm Rhodes (250) 547-9507
mrhodes@workshopbc.com

VANCOUVER SOARING ASSN

Hope A/P, BC
David Clair (604) 739-4265 H
club phone: (604) 869-7211
www.vsa.ca