

free flight libre



2009
Spring



Priorities

David A. Collard Pacific Zone Director

THE 2009 SAC AGM WAS HELD AT THE CANADIAN WARPLANE HERITAGE MUSEUM in Hamilton and was well attended. There were a number of questions regarding the status of SAC's trust funds, specifically with interest in what the stock market downturn has done with their performance. The market value of the funds, a diversified mix of equities and bonds, were down 30%. Jim McCollum drew to everyone's attention that the bulk of the trust funds have come from donations of a very few individuals over many years and the historical rate of return has been good. The financial report was unanimously accepted.

The complete minutes of the AGM (and the 2008 committee reports) will be on the SAC web site for everyone to see.

The SAC bylaws are being redone and when completed will be posted on the SAC web site for everyone's examination and for membership approval at the 2010 AGM at Silver Star Mountain, Vernon, BC scheduled for 27 and 28 March.

Of importance to all was the motion at the AGM to provide matching funding of \$10 per SAC paying member up to \$10,000 for the World Team and an equal amount in off-years to the Junior World Team. Rocky Mountain Soaring's amendment to this motion was for more support for junior training camps, competition, etc. rather than supporting the Junior World Team due to such a small number of pilots to choose from. Although the amendment was defeated, the input is appreciated and noted, and the BoD will keep the idea in mind going forward in our continuing efforts to support growth in this area of our sport. Let's always try to work towards making two ideas a better idea rather than win or lose. The original motion was put to a ballot count and passed.

The SAC Board of Directors (BoD) is unchanged for 2009. John Toles has agreed to stay on as president for another year during the transition to COPA doing the work of SAC's general administration. This is planned for a 1 May start, pending completion of an agreed contract between SAC & COPA. John will relinquish the President's position at the next AGM and will then stay on for his second year as a board member representing his Zone. The duties of the board members have been assigned, with John Mulder as Secretary and David Collard as Treasurer (assisted by Jim McCollum during this transition year).

In the last issue of *free flight* some confusion was created with regards to SAC's Youth Bursary program. It was not intentional but simply some misunderstanding – let me explain. The idea of supporting youth bursaries was raised at the AGM in March 2008 by Peter Musters, who has been very active with *Youth Flight Canada* and disabled persons programs. The BoD agreed with the general idea of supporting youth soaring, but after much discussion felt that the *Youth Flight Canada* program, although commendable, had a number of rules and procedures that would make it difficult for enough SAC clubs or youth in general to benefit.

Coincidental with the idea of a Youth Bursary program were the ongoing voices asking what is SAC doing to promote and advertise soaring. As I am sure most are aware, paid-for advertising is very expensive and usually not a very good return on money unless there is much repetition of the message. SAC cannot afford such a large expenditure and I'm sure the general membership would not be keen on paying greatly expanded membership dues.

With the above goals in mind, and some brainstorming with various club executive and members in the Pacific Zone, a proposal was presented to the Board in November 2008. What evolved was the SAC Youth Soaring Busary program wherein SAC will match up to twenty \$500 bursaries for youth (age up to 25 attending a place of learning (university, college or trade school, etc). The money is to be used on flying activities, not for membership dues, with the goal of maximizing flying training. The clubs will select candidate(s) and it is to be open to anyone without any prerequisite of prior flying training or licensing. The distribution of the busaries will be done in such a way as to give all clubs an equal opportunity of support if they wish to participate. The first round of one bursary will be available to a club ⇨ p31

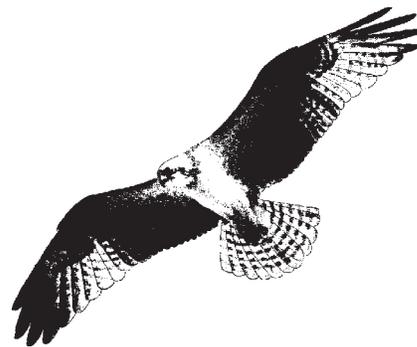
free flight

vol libre

2009/2 – Spring

The journal of the Soaring Association of Canada
Le journal de l'Association Canadienne de Vol à Voile

ISSN 0827 – 2557

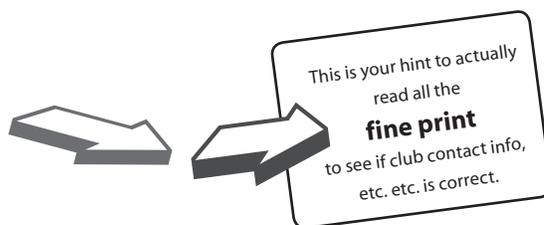


free flight update	4	2008 annual report ♦ <i>Tony Burton</i>
why?	5	do we continue to do dumb things ♦ <i>Bernald Smith</i>
Ecuadorian soaring	6	a one-glider country ♦ <i>John Broomhall</i>
80 hours in Shangri-la	8	a soaring holiday in Namibia ♦ <i>Charles & Kris Yeates</i>
mid-air's	10	all about flying close together ♦ <i>George Thelen</i>
boot – belly – push	12	differences in published spin recovery techniques ♦ <i>Henry Wyatt</i>
ground effect	14	care to bet on it? ♦ <i>Colin Vassarotti</i>
a nine-day learning experience	17	having a go at contest flying ♦ <i>Dan Daly</i>



Cover

John Broomhall from Edmonton instructs from the back seat of a K7, the only glider in Ecuador. He was issued glider pilot licence #5 given in that country.



DEPARTMENTS

- 19 **Safety & Training** — 2008 accident review
- 22 **Miscellany** — SAC soaring simulator unveiled, a new FAI 13.5m class, mis-rigging stories, what is the TSP?, SAC insurance report, noted meteorologist dies, airspace changes in Ontario, 2009 Nationals at SOSA, IGC international XC soaring report SAC trophy winners for 2008
- 26 **Club News** — Peter Corley Scholarship winner, AVV Champlain, Rideau Valley, Montreal, Air Sailing closes its doors, Saskatoon, Vancouver
- 28 **FAI Records** — Current Canadian records table, new records approved

free flight update

Tony Burton, editor

THIS ISSUE IS THE 166th to come out of our house since Ursula and I began. The latest change was going quarterly beginning with the 3/2008 (Summer) issue. There was no loss to content as the number of pages grew to a nominal 32 from 24 to provide for the same amount of "story" space. You also see a colour cover every issue now. *Trading Post* no longer appears; members were more and more taking advantage of the immediacy of the SAC Want Ads web page for prompt sales info – a quarterly cannot provide that kind of service. The advantage to SAC of being a quarterly is that the annual printing and mailing costs are reduced by several thousand dollars. The advantage to Ursula and me is that we now have more free time between issues to spend on long vacations to exotic places before we're too "retired" to hike (you may recall that an issue was skipped over the winter of 02/03 so I could escape to New Zealand for several weeks).

Thanks as always to Ursula for her highly professional copy proofing – it is a much more challenging job than most people realize. Thanks also to all you photographers who send me photos; even if some are not used, the good ones are on file. If you have a lot to offer, send samples of your best at low resolution and then I can select a few to be sent at high resolution. And thanks to all who took the time to contribute stories or even a bit of filler material – the magazine depends on you for its content.

In 2006 and 2007 I spent considerable time constructing replicas of "pre-desktop publishing era" issues of the magazine so that they could be archived on the SAC *free flight* web page as .pdf files. Early last year, Ursula noticed that the text in these replica issues still had a lot of scanning errors that I had not found – *i*, *t*, and *rn=m* substitution errors, for example, that are easily missed at normal page magnification. Ursula corrected all these issues from late 1981 through 1992, viewing each page at X4, and I then uploaded new pdfs. The *free flight* CD has also been updated with the corrected issues.

During a house-bound period last April, I produced two anthologies of material from three decades of *free flight* issues: one was the 72 page collection of opinion articles on the general state of the sport, competition pros and cons, and rant entitled "*Come outside and say that!*", the other was the 80 page collection of humour and cartoons, "*I thought it was funny*". If you haven't done so already, print out a copy for your library or the clubhouse – they are both good time-wasters.

Make use of the "searchable" *free flight* index on the web page – it's an eminently useful resource – our magazine contains a lot of valuable information which *does not* go out of date: safety and training issues, soaring technique, etc. and the history of the sport in Canada (people, contests, gliders, events). It is all available with a few keystrokes. I particularly wish to thank Susan Snell in Winnipeg who has been assisting me with any index problems and regularly uploading current versions to the web site. Remember also that almost any history question you may have has an answer in Ursula's *The Book of the Best*.

Please let me know what your club is doing that is of value to others across the country. I remind club executives to ensure that *free flight* is on your newsletter mailing list (if you don't have one, please have someone correspond on your activities) and give the office and *free flight* changes to your address, phone number, e-mail, or contact person.

Finally, this issue will see us all getting underway for a fresh season of soaring. Herein you'll find attention being paid to some of the things you might do in your aircraft that is not entirely condusive to your enjoyment. Why? I don't know – start with the article opposite. ❖



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 the national aero clubs. The ACC delegates to SAC the supervision of FAI related soaring activities such as competition sanctions, processing FAI badge and record claims, and the selection of Canadian team pilots for world soaring championships.

free flight is the official journal of SAC, published quarterly.

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). 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.

Material from *free flight* may be reprinted without prior permission, but SAC requests that both the magazine and the author be given acknowledgement.

For change of address and subscriptions for non-SAC members (\$30 or \$55 for 1 or 2 years, US\$35/\$60 in USA & overseas), contact the SAC office at the address below.

President	John Toles
Vice President	Sylvain Bourque
Executive Director	Jim McCollum
Treasurer	David Collard
Secretary	John Mulder
SAC office:	107 - 1025 Richmond Rd Ottawa, ON K2B 8G8
tel:	(613) 829-0536
fax:	(613) 829-9497
e-mail:	sac@sac.ca
web site:	www.sac.ca

Deadline for contributions:

10 March, June
September, December

WHY do we continue to do dumb things?

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.

free flight est le journal officiel de l'ACVV publié quatre fois par année.

Les articles publiés dans *free flight* 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.

free flight 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 *free flight* 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 30\$ ou 55\$ pour 1 ou 2 ans, et de 35\$US ou 60\$US à l'étranger.

EDITOR

Tony Burton
Box 1916 Claresholm, AB T0L 0T0
phone (403) 625-4563
e-mail t-burton@telus.net

assistants:

copy proofing – Ursula Wiese
French content – Sylvain Bourque

Courier service to 335 – 50 Ave. W

COMMERCIAL ADVERTISING

SAC office (613) 829-0536
e-mail sac@sac.ca

Date limite:

10 mars, juin
septembre, décembre

Bernald Smith, from *SOARING*

- Why do we hit trees on final approach – and even on the downwind leg?
- Why do we roll off the end of the runway into a fence?
- Why do we hit another aircraft during rollout after landing?
- Why do we have hard landings, injuring our backs as well as damaging our gliders?
- Why do we pass up a good landing field only to find there's no more lift and no place to safely land?
- Why do we run over a glider's wing while taxiing our towplane?
- Why do we take off without using a checklist?
- Why do we think a good lookout does not require turning our heads?
- Why do we land short into a fence?
- Why do we overlook something during assembly?
- Why do we take off with the tail dolly still attached?
- Why do we land without putting down the landing gear?
- Why do we zoom up right after take-off, dangerously pulling up on the towplane's tail?
- Why do we run out of fuel in the towplane during tow?
- Why do we hit another aircraft while flying?
- Why do we place our canopy unattended on the ground to watch a wind gust take it?
- Why do we find out to our surprise that our motorglider's glide ratio with the engine extended and not running will not permit us to reach the runway?
- Why do we think it's more important to close the canopy when it comes loose on tow than it is to fly the glider? Why do we take off with the canopy loose in the first place?
- Why do we nose over while taxiing or just after landing our towplane?
- Why do we ground loop?
- Why do we hit runway lights with our wing or towplane propeller?
- Why do we drag towropes over other aircraft and damage them?
- Why do we tie down poorly for conditions that do or may exist and incur storm damage?
- Why do we hit runway/taxiway signs during rollout?
- Why do we have gear collapse after landing?
- Why do we hit power lines during off-field landings?
- Why do we have rope breaks which sometimes result in accidents?
- Why do we have trailers come loose on the road?
- Why do we have soft spots/holes in our runway that result in towplane/glider accidents?
- Why do we break canopies with our head during flight?
- Why do we have a wing come off in flight?
- Why do we hit the wing against the hangar door while pushing in our glider?
- Why do we fly so slowly near the ground that we stall before ground contact?

All of those questions represent accidents which have occurred to glider and/or towplane pilots in the USA. Is there anything any of us can do to preclude any of the above occurrences? They don't happen to most of us so why do they happen to some of us? Not everyone has an accident, but many do, in most cases they are because dumb things get done – not because we're dumb, but because we forget, or because we get distracted, or because we get hurried, or because we don't think through our actions, or because we got away with it once so we'll get away with it again, or because of a lot of other things, including because we just don't think!

Soaring is fun and we love to fly, and most of the time we have no regrets, but when we don't pay attention to all the things we need to pay attention to, we can have accidents. Many are minor, but some are serious and some so serious that they are fatal. What's the difference – often it's just the luck of the draw! Whatever you do on your next flight, and the next one after that, and then all your flights after that, please don't rely on luck to save you. Why do we think we don't need to read all of this because it doesn't apply to us? ❖

This article is a publication of the Soaring Safety Foundation of the SSA. Other useful information may be found on its web site <<http://www.soaringsafety.org>>.

Ecuadorian soaring

John Broomhall, *Edmonton*



John Broomhall

REMY DAVALOS AND HIS FAMILY met me on a Saturday morning at a gas station beside the Pan-American Highway, about three blocks from where I was living in Otavalo. Remy is an active member of the “Club de Planeadores Ecuador”, but is not a glider pilot himself. He is a pilot for Columbia Helicopters, and flies one of those big Chinook twin-rotor jobs doing mostly oilfield work in Peru. He and his wife Monica have two sons, David age 22 and Juan age 16. David is a glider pilot and also holds a commercial power licence. In pouring rain we drove the 15 km from Otavalo to Ibarra, where the gliding club is based. It didn’t look good for that day ...

Ecuador is probably about the last place you’d ever think about going to fly gliders. I picked Ecuador as a place for a winter escape last year based on its climate, ease of access, cost of living, to improve my Spanish, and for the possibilities for adventure and sightseeing in the mountainous terrain of the Andes – gliding didn’t even feature as part of my search. While explaining to someone in Cuenca that I was a glider pilot, I found out that there was a gliding club north of Quito in Ibarra. After a bit of a web search and a few e-mails, I had some contacts and an invitation to come to the only gliding club in Ecuador.

Gliding in Ecuador got its start about three years ago when

Edwin Auz, another Ecuadoriano helicopter pilot, was introduced to gliding in France while taking some training there. He connected with some French glider pilots who helped him arrange delivery of a K7 two-seat glider and a winch to do the launches. The French pilots also came to Ecuador several times over two years to complete training Edwin as an instructor and to train some winch operators.

That K7 is the only glider in the country, and Edwin is currently the only glider instructor. At the moment, there are three other licensed glider pilots, only one of whom (David) is still active. There are two or three students taking lessons, but it is a difficult process because Edwin has a month on – month off work schedule. Instruction grinds to a halt while he works. I met some of the other people involved in the club, and it is just like an extended family. I was heartened how much they made me feel at home, suffered my Spanish, and extended their friendship and aircraft for me to fly. I flew with David for the first four weekends because I had to wait for Edwin’s return to finish my winch conversion and to qualify as an instructor here.

I should note that there is enough English spoken by core club members that that language would not hold you back from enjoying the club. Remy and his family are all fluently bilingual, and Edwin speaks English as well.

The town of Ibarra has a population of about 120,000. It is nestled in a valley in the Andes, bordered on the east by a range and to the south by *Imbabura*, a dormant volcano. To the west, the valley rises to a plateau that extends down towards Quito. Other ranges are visible to the north, and the valley that Ibarra sits in continues to the north towards the coast. The climate in Ibarra is comfortable shirt-sleeve weather, the temperature rarely drops below 15 or over 30.

The Ibarra military airport is lonely to say the least. It has about 6000 feet of pavement, and apparently is rarely used. Remy said that the weekend glider flights are sometimes the only aircraft movements there all week. Despite the lack of activity, the military staffs an air traffic control tower there. The airport elevation is 2250 metres (7300 feet).

... That Saturday when I arrived was a wash-out, the rain and low cloud shut down any chance of flying. I was given a tour of the area surrounding Ibarra. We stopped for lunch at a hotel on Laguna Yahuarcocha. This lake has an interesting history, the name means "blood" in the native Quichua language. Apparently there was a great war between the Inca and the local inhabitants some 500 years ago, and it is thought that as many as 50,000 bodies were dumped into the lake.

Sunday morning we got up early to high broken cloud and sunshine, and got to the airport by about 9. After the usual routine found at glider clubs to get the aircraft out of its hangar and the winch organized, we then waited for the airport bureaucracy to permit us to start flying (as if there was anyone else). I then launched with David for my first flight in Ecuador. I was going to say my first flight south of the Equator, but alas after checking I found we were about 0.33 degrees north of it.

David and I had three winch launches together, but didn't find any lift that could sustain our flights. We were getting about 500 metres off the winch launch, which didn't give us much time to look around. There are few places to land out, so extra caution is necessary. I found the metric altimeter (one rotation equals 3200 feet) took some getting used to, because a tiny bit of movement translated into a significant change of altitude!

Later on in the afternoon with the help of a bit of a head-wind, David, flying a passenger, managed a higher launch and was able to make it over to the mountain range to the east of Ibarra where he caught a bit of ridge lift. The ridge is a popular place for parapente, and I saw 3 or 4 going at the same time at various points during the day. Later on, a parapentista landed at the airport close to us. I decided that day that I would pay for a complete membership in the club and formally join this happy gang. I plan on spending more time with them when I return to South America later this year on a motorcycle trip.

A few weeks later Edwin returned and I completed my winch checkout with emergency procedures, then I was immediately put to work flying passengers and a few training flights. Over the course of about six weeks, I managed about 30 flights with the club. On my last weekend in Ibarra, they issued me Glider Licence #5 for the country!

Getting to Ibarra, Ecuador

American Airlines connects to Quito from Miami, and Continental Airlines from Houston. Both flights leave later in the afternoon, so it is possible to get to Quito from Canada in one day, arriving about 10 pm Eastern time. Stay overnight in Quito, and catch a bus to Ibarra the next day. Ecuador has great bus service, and it is very inexpensive.

Accommodation and meals in Ecuador are ridiculously cheap compared to Canada. You can stay at a modest hotel and have all your meals for less than \$20 a day. A 750 ml bottle of local beer will cost you one dollar in a bar.

What else might you do?

If you want to make a bigger holiday in Ecuador, there are many interesting things to see. The Inca ruins at Ingapirca, the town of Cuenca which is a World Heritage Site based on its Spanish architecture, the jungle of the Amazon basin on the east side of the Andes, the Andes themselves with numerous volcanoes, lakes, and parks, the miles of sandy beaches on the coast, and of course the Galapagos Islands. The Galapagos are the major tourism engine in Ecuador and unfortunately do not adhere to the pricing models found in the rest of the country. The official currency of Ecuador is the US dollar. I would be pleased to answer any questions you might have, <john@broomhall.ca>, and the club's contact information is <aeroclubecuador@gmail.com> and <<http://tinyurl.com/planeadoresecuador>>. ❖

If you would like to help support a fledgling club, I have a few polo shirts (L or XL) with a nice embroidered logo "Aeroclub de Planeadores Ecuador" on the front and a glider silhouette on the back, \$25 plus shipping.



John Broomhall

Overhead Ibarra and Lake Yahuarcocha. In the photo opposite, club members set up for a day of flying, their winch on the truck behind. The volcano, Imbabura, dominates the nearby scenery.

80 hours in Shangri-la

Charles & Kris Yeates



SHANGRI-LA IS NOT A MYTHICAL PLACE hidden away in the Himalayas. It will not be found in the outer reaches of Tibet. Look for it in the Kalahari Desert in Namibia amidst long red sand dunes and savanna, next to a dry salt lake that is three kilometres in diameter. Shangri-la is the Bitterwasser Lodge and Flying Centre.

Almost astride the Tropic of Capricorn, it is isolated and exotic. The nearest shops are three hours away by gravel roads, in Windhoek, the country's capital. Gas stations are so rare in the countryside that they are shown on road maps and travelers are told to never miss filling up. All 4x4 vehicles are equipped with double fuel tanks and two spare wheels. The roads are rough in many areas. Bitterwasser sits at 4100 feet on a plateau that stretches east into Botswana and west until 200 kilometres from the sea. There the edge is marked by low jagged mountains, eroded by long gone rivers. Between this edge and the sea lie the remarkable dunes of the Namib Desert. These waves of sand, some 200 metres high, exist along the full 1500 kilometres coast of the county – south into South Africa and north into Angola. To complete the setting, you should understand that slightly fewer than two million people inhabit this country the size of Texas or the UK.

From mid-November to mid-February for the last fifty-three years, glider pilots have gathered there to soar in truly remarkable weather conditions. Originally a German farmer ran sheep on his ten thousand hectares and, for diversion, used a winch to launch his glider. Word of his exploits spread. Then, twenty years ago, four partners, German and Swiss, bought the operation and began development of the Bitterwasser facilities. Today there are forty shareholders who operate this mature resort and attached

farm. Thatch roofed, air-conditioned bungalows, a large open-sided restaurant/lounge, flight office, hangars, workshop and palm tree lined tiedown areas for the latest motorgliders cater to an ever changing mix of seventy pilots and their friends. Staff support is supplied by a very friendly, very competent set of professionals.

The origin of the palm tree boulevards is a separate story. Palms are not native to the Kalahari Desert; they have all been brought in, each one recognizing a visiting pilot's first 1000 km FAI triangle flight! There are a lot of palms, each marked with a plaque that lists the pilot and date of his/her accomplishment.

Thirty-five sailplanes come from Europe each November in seven especially fitted shipping containers. Those and five resident machines made up the fleet – all but three motor equipped. These three are launched with a Maule towplane that otherwise flies tourists. The solo gliders ranged from a DG-400 on up. There were many Ventus versions. The star for me was the demo Antares 20 with its glass instrument panel and simple one-lever-to-operate electric motor whose batteries are said to be guaranteed for 20 years! Pilots who flew it extolled its balanced controls and its thermalling characteristics. One said it matched the EB28 polar at 200 km/h. The two-seaters ranged from a Duo Discus T from a club in Salzburg, Austria, through DG-500M 22, a Nimbus 4 DM and various versions of ASH 25 to four of six in the world EB28 sailplanes – one each from Germany, Hungary, England and the USA. Each EB28 is a technical marvel. One owner spent US\$1,000,000 to buy one, instrument it, ship it home, get it licensed, fly it enough to be current and then ship it to Bitterwasser for the season.

These ships made amazing flights. In December, Ralph Woodward and a French pilot made six flights over 1000 km, including a 1156 km triangle. What if the weather had been as good as last year for 1000 km flights when 147 were completed? Yes, you can buy performance, but it can suffer all the troubles of any sailplane. For example, the Hungarian EB28 extended its engine one morning and a support rod end broke, letting the engine sag sideways and damage the fuselage doors – a part had to be ordered – end of flying. On 7 December, early in our flight, Kris and I noticed a growing thunderstorm that was tracking directly for Bitterwasser. We hastily landed, got towed to our tie down spot and just had time to put on the covers and secure things before the storm hit. The pilot of the English EB28 landed and raced to his tie down. He was able to tie the wingtips to concrete filled tires but had no time to put on covers. Unfortunately, the sailplane was facing the coming storm which struck with 42 knot sustained gusts. They caused the wings to fly;

the cement-filled tires were lifted and the whole aircraft moved back into the row of palm trees, damaging flaps and ailerons in four places – end of flying and back to the factory in Germany for repairs.

Daily, after breakfast, at 9 am, new pilots were introduced and those leaving were bid farewell. A weather briefing followed. On super days, thermals to 3000 agl begin by 9:30 and pilots rush gliders to the launch point. This year such weather wasn't experienced. Launches were at 10:30 or later. However, thermals still lasted until dark! Sunset was at 19:30, within a minute or so, and all were warned that 15 minutes later, it is *dark*. During the month a handful of flights ended with landings on the pan at last light. One evening a Mayday came in about 19:15 – an ASH-25 pilot (first time at Bitterwasser) announced he was 90 km away and could not get back to base before dark. They asked for his GPS position and then said turn right to land on a dry lake pan 30 km ahead. He was warned that two wire fences trisected the area so he should be careful. The pilots stayed with a farmer overnight but couldn't take off in the morning because of the fences. A vehicle and trailer were sent to retrieve them at great expense. This was the only landout in almost eight hundred flights in December. At briefing they were recognized and given a bottle of bubbly so they could drown their sorrows. Of course the pilot should have realized his predicament early enough to use his motor for a fast return to base.

A Belgian pilot had a tough first visit. His aim was a 1000 km flight. No luck – uncooperative weather plus glider engine troubles equaled little flying. There was a final indignity. A spot beside the pool was chosen for his signing off on the inspection / hand back papers for the glider. It was right below a large spotted eagle owl resting on a tree limb. It pooped on the Belgian and the contract. All nearby were stunned – the Belgian hesitated, laughed and then said he would return next year because it could only get better.

Kris and I flew a DG-500M for 80 cross-country hours, a season of soaring in one month. Soaring conditions may not have met the expectations of Bitterwasser regulars but we didn't complain about dry thermals that some afternoons topped at 14,000 feet asl. The highest cloud base we experienced during one flight to the northeast was 16,800. Thermal strengths were not high average. Long flights were made by flying straight and using the unusual number of soaring hours available each day – 7 to 10 depending on starting time. Triangle distances of 413 km, 533 km and 604 km were accomplished while our longest flight was a 710 km multi-legged course that ended at sunset. These were satisfying to us but I decided not all our flights would be transferred to the OLC. I found it was disheartening to see us trumped each day by umpteen other Bitterwasser flights. However, Kris put it all in perspective when she said, "Flying at Bitterwasser is like playing a round of golf with Tiger Woods and his buddies up ahead. You cannot look at the event as a competition".

View from the back seat My turn! Namibia & Bitterwasser had it all. For the pilots it was the ultimate; for crew it was heaven. There was always someone to help hook up the glider for the trip to runway. On landing, before you could get out of the glider, a retrieve truck arrived to take you back to tie down – ah, bliss. My first take-off in a motorized glider

was a might concerning. It was noisy even with headphones on. The oxygen cannula, being new, smelled terrible. The launch was rather like The Little Train that Could – "I think I can, I think I can"! Felt at one point that GBK would never leave the runway but of course it did. The Namibians who rushed around getting us to and from launch were lead by Jeremiah. He was the only local staff that held a Namibian driving licence, had learned to fly gliders and was a self-taught trumpet player. One day, while Sir Charles was madly recalculating a task to suit conditions, Jeremiah quietly noted that glider pilots are crazy; they spend so much time calculating and fussing when they could just go up and fly. Yep, I liked Jeremiah.

The Kalahari was enjoying a rainy season; wildflowers and grass covered the dunes. One pilot reported seeing a lion water skiing on a lake pan! Needless to say, all this was great for farmers but not for pilots. Even so, it was grand flying by Canadian standards. I happily took photos, read, and on one flight (don't tell Charles) had a nap.

When not flying, life was extra-relaxing, shaded swimming pool, no TV, no radio, no newspapers. While you could use the internet, it worked on Africa time, very slow or no connection. While there was only one American and we two Canucks speaking English, everyone was hospitable and went out of their way to make us feel welcome. Like Ella, who spoke Russian and German with a smattering of English. She patiently took me around to see Spotted Eagle Owls and a cactus that blooms only after sunset. The best part was the day she introduced me to many of the children living in the staff village. That was amazing – I felt like a rock star being surrounded by adoring fans. Children were keen to have digital photos taken, so they could see themselves instantly.

As I'm the "back seat, non-pilot ballast", I don't want to ramble on, have learned it is best to be brief and concise! Therefore will conclude by noting that Bitterwasser was a magical place; lots of folks who flew or those who love to be with those that do, great accommodations, thermals, beautiful sleek gliders, great sunrises, sunsets, and beautiful Namibian staff that made us feel welcome and at home – a soaring adventure that will be hard to top.

Conclusion We've wrestled with a kaleidoscope of memories, trying to write an evocative narrative. It was difficult to select the good bits while organizing a coherent story. The cost of the adventure was exorbitant for sure, but the trip blew our minds as well as our wallets. ❖

1 Bitterwasser web site: <http://www.bitterwasser.com/bitterwasser_en.htm>

2 Pokweni Soaring Namibia: <http://www.pokweni.org/pokweni_soaring_e.htm>

Pokweni is a third generation sheep farm and soaring site. Owner is Jos van de Merwe. It is about 140 km SE of Windhoek and about 50 km north of Bitterwasser.

3 In South Africa, there are operations at Gariep Dam <www.gariepgliding.com> and Soaring Safaris at Bloemfontein <www.soaring-safaris.com>. They host foreign pilots over the November/January summer season.

Mid-air

Flight in extremely close proximity to other aircraft is a hallmark of soaring.

George Thelen, from *SOARING*

IN AUGUST OF 2008, two separate mid-air collisions occurred in the US soaring community. The first was a glider that was hit by the towplane from which it had just released. In the same month, a Ventus 2A glider collided with a Genesis 2 during the 15m Nationals in Texas. Fortunately, the pilots involved were not fatally injured.

Flight in extremely close proximity to other aircraft is a hallmark of soaring that places pilots at much greater risk of collision than in other types of aviation. It can be argued that gaggle flying is a freeform mode of formation flying. However, gaggle flying provides several variables that make it inherently more difficult and risky:

- there is no leader or wingman,
- there is no prior briefing,
- it occurs spontaneously in random places,
- dissimilar aircraft and pilot abilities are involved.

It is a great credit to the soaring community, and especially the contest crowd, that we accumulate thousands of hours and kilometres with very few mid-air collisions. Procedures established and refined over the years, in conjunction with improved pilot training and discipline, have allowed the soaring community to fly and compete in relative safety despite the inherent hazards. Nevertheless, these hazards never diminish and we must remain vigilant and disciplined if we are to survive.

I would like to spend some time considering contest flying and other high-density glider traffic situations. To illustrate, I use the example of a Region 11 contest in the 1980s where I was the contest manager. We had 75 gliders on site at Minden, Nevada. We were sending off a towplane and a glider about every 45–50 seconds in order to get 75 gliders in four classes launched in just over an hour. At the end of that hour, as the gate was ready to open to start the race, two or three thermals could be “seen” east of the airport dotted with ships that outlined the thermals’ shapes, top to bottom. This was the very definition of “fibreglass clouds”. The organization of this launch effort was complex and massive: line boys with hooks guiding the tow ropes to the first gliders in the launch lines, pilots setting up the first pictures in their contest cameras, glider weigh-in crews, the start gate crews, the retrieve phone crew, the contest photo analysis crew, not to mention the port-a-potties, insurance, sanctioning forms, school cafeterias for daily briefings, etc. It was a huge job.

On two of the contest days we were joined by personnel from the FAA’s Reno FISDO (Flight Inspection District Office). One of them came up to me at the end of the

second day, and said, “I’ve never seen anything like this! I had no idea. In terms of organization, it’s like a major launch of fighters from an aircraft carrier. I am in awe of what you guys are doing”.

As the gliders were being dropped off at 2000 feet agl, they would join the house thermals. On some days this might mean more than 30 gliders, most of them loaded with water, maneuvering in one thermal. Remember, the idea is to get everyone launched at the first possibility the ships could stay up prior to the start gate opening. This meant that these pilots were wallowing around in weak thermals before the conditions strengthened enough to begin flying the contest tasks.

So put yourself in the cockpit, where I was on a number of occasions. Let’s say that you are part way up the thermal at about 2500 feet. From this altitude you could barely make it back to the airport to the west. There are gliders above and below you, with maybe three ships at about your altitude. Everyone is going around in the same direction but their angle of bank, and shape of the circle that they are making, varies as each pilot assesses where the core of the thermal is. A 1-26 with no ballast is banked up tight in the core of the thermal and climbs through a bunch of fibreglass ships playing “follow the leader” at a shallow angle of bank. In contrast, an Open class ship loaded to the gills with water is barely able to stay in the air. Your head is on a constant swivel to keep track of the immediate traffic in the circle you are in. This is no time to be macho!

How could this work, with what has to be the highest density of air traffic in the world – only starlings or crows get this jammed up in gaggles! First of all – by the rules – these are all experienced pilots. Everyone relies on each other not to make stupid mistakes like stalling or making a spin entry. But that does happen – I saw a ship close to the bottom of one of these thermals enter a spin and fall out of the bottom of a large gaggle. Fortunately he didn’t hit anyone else. Close to the ground the ship recovered, turned toward the airport at high speed and began to drop water ballast, barely making it to the end of the runway for a relight. Later, I brought it up with the competition director, since discipline was his job.

Going through the start gate was another exercise in restraint versus macho. Gliders were to go through in one direction, and only within a specified altitude band. If someone was really aggressive trying to get an advantage, they might get up to a very high speed and overrun someone in front of them. The radio is vital here for

cadence and situational awareness of where the other traffic is. Out on course, since the various classes were going to different turnpoints, the traffic situation improves, but there are still challenges. One tactic on a strong day is to start late and use your competitors to mark the thermals in front of you. The pilot that does this tends to fly quickly between thermals, come into a gaggle at high speed, pull up sharply, and leave the thermal before the top, speeding off to another thermal marked with ships circling.

Closing in on turnpoints, things again become more dangerous as the gliders tend to be at similar altitudes. In those days, the photos had to be taken from a specific angle at the turnpoint target. If that photo of the turnpoint was improper, the score for the day was completely lost. If the pilot was unsure that his photo was properly taken, he might circle and take an additional "insurance" photo. Although this point in the air seemingly wouldn't be occupied for very long, it could in reality be a very crowded piece of airspace. Recorders and GPS have made this aspect of turnpoint racing safety infinitely better. Today the pilot simply rounds the turnpoint and that is it. Angles, photos, and all kinds of distractions are eliminated. The pilot can concentrate on making the turn and looking for traffic.

At the 1983 contest, we did have a fatality from a mid-air collision nearing one of the turnpoints. Two Libelles were involved. Somehow, one ship hit the aileron of the wing of the other from behind as both ships were going in roughly the same direction. Unfortunately, there was evidence one pilot died immediately, even though the glider circled and stalled for more than ten minutes before it hit the ground. The other Libelle was able, with some difficulty, to remain stable enough to be landed safely at the turnpoint airport.

As races come to a close, the finishes at high speed – or low speed – across the finish line are exciting. One pilot, who had made it all the way around the course on a weak day, arrived at 200 feet and just above stall speed and obviously hadn't really given the pattern or landing any thought at all. He flew away from all of those long runways and landed in the sagebrush, damaging his glider, while futilely trying to fly a pattern from that height. There are some conflicts when many ships are coming back at once – sorting out getting gliders off the runways quickly, or making room for adjacent runways or even taxiways for multiple landings.

Those of you who have been in soaring for many years will remember that back in the 70s and 80s there were often one or more mid-air collisions at each World soaring competition. There might have been 125 ships entered at some of them. There was a group of fatalities, then the organizers really put their heads together to change the system by encouraging differing turnpoints for the individual classes and other measures to improve safety. Certainly, flight recorders and GPS have also helped immensely at all the points of heavy traffic outlined above, and safety mostly has improved since then.

Getting back to the accident that prompted all of this, I don't have much more information than what the NTSB

reported. The Ventus was only slightly damaged on just the winglet. On the Genesis, the Ventus' winglet cut a swath through the bottom of the wing and opened up a big 'spoiler' that made the aircraft uncontrollable.

According to a telephone conversation with, and a subsequent accident report submitted by the pilot of the Genesis, he was following behind another glider at an altitude of 5000 feet, heading for the first turnpoint in the competition. The glider in front of him entered a thermal and the pilot of the Genesis established visual contact with the other pilot before entering the thermal behind him. He had completed three turns when he heard a loud bang and immediately lost control. The right wing dropped, the glider rolled to the right, and went inverted. The pilot of the Genesis exited the glider and deployed his parachute; however, his landing resulted in serious injuries.

The FAA inspector who traveled to the accident noted a "heavy rub mark and gash" on the bottom side of the right wing. The gash transitioned into a tear and partial separation of fiberglass. Material and paint transfer in the gash were consistent with the winglet of the Ventus. The inspector stated that this damage would have inhibited the use of the right aileron and spoileron.

According to a telephone conversation with and subsequent accident report form submitted by the pilot of the Ventus, he had observed two gliders in the thermal in front of him and entered the thermal underneath them. After two turns in the thermal, he lost sight of the two gliders and collided shortly thereafter with the Genesis. His left wing and winglet impacted the right wing of the other glider. The pilot of the Ventus landed uneventfully at the contest site. Material and paint transfer on the winglet were consistent with the marks on the wing of the Genesis.

According to the *FAA Glider Flying Handbook, Chapter 10, Soaring Techniques*, it is recommended that if the pilot loses sight of another glider in a thermal and cannot establish position via radio contact, "leave the thermal".

So who done it, in this accident? It's impossible to say. It is very easy to have a glider right on your tail in a thermal, yet have no idea that it's there. That is why the reference to radio usage in the high density traffic of thermals is important on busy days, even at small fun meets.

In conclusion, bringing up all the possible dangerous situations during competitive soaring may have made it sound like contests are right up there with Russian Roulette for the risk level. That is not true. There are many soaring contests held every year that are safe and fun for the contestants. At those events, safety meetings are mandatory and the competition directors have much authority to police unsafe flying. Unfortunately, this mid-air spoils that recently-improved record of competition safety, and shows that we can never let up trying to get perfect. ❖

Boot - belly - push

Henry Wyatt, Edmonton

In his 2008/4 article, "Lax Spin Training", Dan Cook wrote, "I am also amazed at how many instructor candidates explain the spin recovery technique wrong on their final exam." He also wrote "... our responsibility as instructors is to build basic piloting skills (primacy) that will allow pilots to fly safely throughout their flying experiences. Unfortunately after 100 to 1000 hours of flying experience, a situation will surprise us and we usually fall back on our initial training when under this stress. How well primary training is done determines outcomes much later in our flying."

HAVE ASKED many glider pilots, students, and instructors, "What is your method of recovering from an established spin". The range of answers was surprising. The general elements were usually present, but whether the stick should be moved before putting in opposite rudder, whether the opposite rudder pressure would always stop the spin before the stick was moved, exactly what was meant by centring the ailerons, and whether the stick should be to the centre or beyond centre when it was moved forward, were common sources of confusion. Furthermore, it was unusual for any pilot to be able to quote the manufacturer's recommended technique in the pilot manual for the glider he was flying. I felt sure that Dan was right.

The varied written directions for spin recovery in a sample of glider pilot manuals

I then looked at the pilot operating manuals for several gliders. The procedures for spin exit varied from glider to glider. The following accounts are reproduced directly from these manuals.

L23 Blanik "Initiate recovery from the spin by applying full opposite direction of the rudder. When the sailplane stops the rotation, neutralize the rudder and simultaneously ease the control stick forward. Recover the sailplane from the dive in the usual way."

L33 Blanik (Solo) "To initiate recovery from the spin, check ailerons neutral, apply rudder opposite to the direction of the spin, then ease the control stick forward until rotation ceases. After the rotation stops centralize rudder and apply aft stick pressure to recover from the ensuing dive."

Puchacz "4.4.7. Spinning. The aileron deflection towards the spin favours the appearance of augmentation of longitudinal oscillations especially in the solo spinning and therefore is not recommended... The recommended recovery technique consists of:

- Full rudder deflection opposite to the sense of rotation; a considerable leg force is required.
- Waiting for about 1 second.
- Pushing the stick forward to more than its neutral position."

PW-5 "RUDDER: Apply full deflection opposite to the sense of rotation, RETURN to neutral when rotation stopped. CONTROL STICK: PUSH forward slightly simultaneously as rudder is neutralized after rotation has stopped."

ASW-15 "Full rudder and aileron deflection during a stall will cause wing dropping. Only with the centre of gravity near the maximum rearward position will it lead to a spin. Wing dropping as well as spinning are terminated with the (German) standard procedure (opposite rudder and elevator neutral)."

ASW-20 "1.6 Emergency Procedures. Recovery from spins according to (German) standard procedure:

- 1 Apply opposite rudder, ie. against the direction of rotation of the spin.
- 2 Short pause.
- 3 Ease the control column forward, until the rotation ceases and sound airflow is established.
- 4 Centralize rudder and allow sailplane to dive out."

Slingsby Dart "With aft cg, the glider performs a genuine steady spin in a steep nose down attitude at a rate of about 200 feet (60m) height loss per turn... The control forces remain light and recovery by the standard method is simple and rapid, taking about one quarter turn... It is recommended therefore, that the dive brakes should be opened during spin recovery, so that neither excessive speeds nor loads are induced."

Directions for spin recovery from design authorities and several instruction manuals

The performance requirements for recovery from spins in gliders are given in CS-22 (European Aviation Safety Agency Certification Specifications for Sailplanes and Powered Sailplanes). *The most recent edition can be found on the web.*

The standard procedure to recover from a spin is in AMC 22.221(c), (d), (e) and (f) Sub Part A – General.

"Spinning. Where applicable, close throttle. Sequentially:

- (1) Check ailerons neutral.
- (2) Apply rudder opposite to the direction of the spin.
- (3) Ease control column forward until rotation ceases.
- (4) Centralize rudder and ease out of the ensuing dive."

SOAR and Learn to Fly Gliders, ed. 9 (SAC)

"It is imperative, however, that you learn the standard recovery technique because this is needed with many modern sailplanes, and of course it will work for all gliders. To recover from the full spin:

- first, apply full rudder against the rotation of the spin, and centralize the ailerons.
- pause – only a pause of about one second is needed.

- move the stick steadily forward until the rotation stops,
- centralize the rudder, *look up* and
- pull out of the dive. If the speed starts to build up excessively, start the pull-up earlier, or be more vigorous in the pull-up.

In most cases the glider will start to come out of the spin when the first action is taken, that is to apply full rudder against the spin and to centralize the ailerons. In some gliders you will have to reach the third step of moving the stick steadily forward before the glider responds."

From the SAC Instructor Manual, edition 8

"The standard method of recovery from the spin is:

- apply full rudder, opposite to the direction of rotation,
- centralize the ailerons (stick to the centre, but not immediately forward – see next paragraph), then
- pause slightly (1/2 to 1 second),
- move the stick steadily forward until spinning stops, then
- centralize the rudder, look up and
- pull out of the dive. If the speed starts to build up excessively, start the pull up earlier, or be more vigorous in the pull-up.

From the BGA Instructor Manual, Section 19

"Spin recovery action

- full opposite rudder – to reduce the amount of yaw, and indirectly (via roll coupling) to help pitch the nose down
- centralize the ailerons – to reduce the downgoing wing's angle of attack. In powered aircraft it is usual to pause between applying opposite rudder and moving the stick forward. In gliders this isn't necessary.
- move the stick progressively forward until the rotation stops – to unstall the glider, even though the nose is already pointing steeply downwards.
- centralize the rudder when the rotation stops to prevent spinning in the other direction, or high sideways loads on the fin as the speed increases.
- recover from the ensuing dive."

The different accounts in all of these manuals are summarized in the table below.

Discussion

As Dan Cook has written, it may be years before pilots will experience an unexpected spin during flight operations. "Then, if the spin happens, confusion about the best procedure may prove fatal if the response is anything but automatic, or based on a simple, universal method applied to all gliders." The accounts of spin recovery in the various pilot and instruction manuals contain all the required elements, but they are not all the same. Is it possible, then, to create a simple, easy to remember, universal method which will readily spring to mind when that emergency arrives even years later? The elements for recovery from an established spin are:

Full opposite rudder The first action in all the sources but two examined is to put in full opposite rudder. The exceptions were the European Aviation Safety Association and the L33 manual, both of which ask that the ailerons be centred first. The majority requirement, then, is to BOOT full opposite rudder.

Centre the ailerons Six out of the ten accounts require that the ailerons be centred. Four accounts, including the Puchacz, make no mention of the ailerons in the exit procedure. An error is possible here because pilots seem to confuse centring the ailerons with centring the stick. Most of our circuits are left-handed, and the spin from an under-banked, over-ruddered turn to final therefore happens with the stick back and to the right, and the rudder to the left. If, during discussion of this issue, you ask a person to demonstrate how they would then move their right arm to centre the ailerons many will move the hand forward as well. It is not a natural shoulder movement to hold the stick back whilst moving it left. In contrast, and in the rarer situation of a spin in a right handed circuit from a right turn to final, the shoulder moves the stick naturally across the belly to the centre. The issue would not matter if recovery required no pause before the stick moved forward, since then both movements would centre the ailerons as the stick moved forward. But half of the ten accounts do ask for a pause. To avoid the problem the important movement would be to get the stick into the BELLY button.

Pause Six of ten accounts ask for a pause before moving the stick forward. The SAC Instructor Manual points out that this is to maximize the effect of rudder in those gliders where the rudder is partially blanked by a down moving elevator – clearly not a problem in such aircraft as the L23. The (theoretical) disadvantage of the pause is, I suppose, a delay before further recovery. But in the most honest spinning glider in the group, the Puchacz, the manual asks for a pause, and with that technique claims spin exit within one turn, that is, within the requirements of the EASA. In any case, if the second movement in spin recovery is to put the stick into the BELLY then a pause is, perhaps, accomplished automatically.

Move the stick progressively forward Many gliders, including the L23 Blanik in which so many pilots ⇨ p16

Action sequence	Full oppos. rudder	Centre ailerons	Centre stick	Pause	Move stick forward	Centre rudder	Ease out of dive
Manuals							
Blanik L23	Y	N	N	Y	Y*	Y	Y
Blanik L33 (Solo)	Y	Y**	N	N	Y	Y	Y
Puchacz	Y	N	N	Y	Y	N	Y
PW-5	Y	N	N	N	Y**	Y	N
ASW-15	Y	Y	N	N	N***	N	N
ASW-20	Y	N	N	Y	Y	Y	Y
Slingsby Dart	No direction regarding spin exit						
SAC Student man.	Y	Y	N	Y	Y	Y	Y
SAC Instr. manual	Y	Y	N	Y	Y	Y	Y
BGA Instr. manual	Y	Y	N	N	Y	Y	Y
EASA	Y	Y**	N	N	Y	Y	Y
Majority	Y	Y	N	Y	Y	Y	Y
Notes:	Y* indicates "after the spinning stops"						
	Y** indicates ailerons centred before rudder applied						
	N*** says only "and elevator neutral"						

Ground effect – care to bet on it?

Colin Vassarotti, from *Australian Gliding*



A HIGH PERFORMANCE SAILPLANE, racing fast and low towards the finish line, streaming water ballast, just high enough to clear obstacles like power lines, trees, and fences is an impressive sight and entertaining for the on-lookers. It's great fun for the pilot too! Some pilots believe that this spectacular maneuver boosts a sailplane's performance through aerodynamic ground effect. Well, the truth is that the gain from ground effect is minimal at best.

I suppose I may have now succeeded in outraging those pundits who embrace ground effect as one of the secret weapons of high performance soaring, but stay with me. Aerodynamic ground effect really exists and can be very useful for sailplane pilots in certain circumstances. It also entails some hidden hazards, especially during take-off or in stretching a low energy final glide.

Ground effect can increase "float" distance prior to touch down. Judicious use of ground effect can help pilots deal with tight landing options. Using ground effect to extend the float prior to landing is a sound technique for landing long towards an obstacle. The trick is to avoid extremes like flying unnecessarily fast, leaving it until the last possible moment to deploy airbrakes, bouncing dangerously because of premature touchdown, or showing off by floating up too close to the obstacle. But don't be in any doubt, many a glider pilot has come to grief, particularly on hangar flights, by doing one or all of the above.

The extended "float" is a useful training tool for flight instructors to help trainees sort out flare technique and landing problems. Student pilots who are having difficulty in judging their hold-off attitude and height after rounding out frequently benefit from exposure to the technique under guidance from a skilled instructor. Similarly, pilots can use ground effect in an extended float to refine their airbrake technique in bleeding off energy when operating on sloping runways. In another application, pilots who find themselves low on final glide sometimes resort to diving near the ground to gain the benefit of the performance boost coming from ground effect and wind gradient-reduced headwind. Sounds good, doesn't it; however, there are caveats. The facts are that the gain in distance is quite small, around 200 to 300m in zero wind conditions and the profile that must be flown is rather precise. The descent requires a smooth dive from about 200 feet to round out and then to fly with steadiness and accuracy

very near the ground without actually contacting it or any other solid objects until ultimate touchdown. Mind you, there is not a lot of future in putting yourself in a position where you need to rely on this strictly emergency technique. It's worth emphasizing that stretching the glide using ground effect and then attempting to zoom over a fence or trees is particularly hazardous and a rather stupid way to risk your life.

So there are practical, if demanding and potentially risky, ways of using ground effect in gliding. But, just what is this apparently magical source of aerodynamic energy?

Ground effect – influence of aspect ratio

Ground effect on wings is sometimes described as having two main characteristics: "span dominated" and "chord dominated". Aircraft with high aspect ratio wings benefit particularly from reduced induced drag when flown in ground effect. Low aspect ratio wings, especially on low wing aircraft benefit from an "air cushion" under the aircraft that effectively reduces the sink rate and produces an extended "float". Yes, it's true: less drag and reduced sink. Ground effect actually improves L/D performance. But wait. Before you get too excited and start fence hopping in your sailplane, it's worth reading the fine print.

Span dominated ground effect

Induced drag occurs because of the lower pressure above a wing and the flow of higher pressure air from underneath the wing to the upper side around the wing-tip. This airflow creates a vortex at each wing tip. The energy loss in these wing-tip vortices is called induced drag. In a way it's like dragging a miniature tornado along behind each wing tip.

Sailplanes, which have a high aspect ratio, generate relatively weak wing-tip vortices and associated induced drag. This is because low pressure areas at the wing tip are smaller as a consequence of being more distant from the main surface of the wing compared to a low aspect ratio aircraft. In *Mechanics of Flight*, Kermode explains that "the higher the aspect ratio the less is the proportion of air split by the wing that flows inwards above and outwards below the wing tip, thus forming vortices". He goes on to say that "the greater the aspect ratio, the less violent are the wing-tip vortices, and the less the in-

duced drag". The loss from these vortices in sailplanes is still quite substantial though, accounting for about 50% of drag at best L/D airspeed. It increases to about 70% at lower speeds and reduces at higher airspeeds.

What has all this to do with ground effect? The answer – quite a lot. When an aircraft is flown close to the ground there is not enough space to allow vortices to develop fully. The result is less leakage of pressure from below the wing, so vortices are weaker, reducing the amount of induced drag. The pressure beneath the wing also increases as the proximity of the ground squeezes air outwards, flattening and widening the pressure pattern compared to the pattern at higher flight levels. At the same time the wing-tip vortices are pushed outwards. The wider spread pattern gives the very real benefit of effectively increasing the sailplane's wingspan – and its virtual aspect ratio.

According to theoretical work by Wieselsberger in the 1920s, induced drag reduces to approximately 50 per cent at a ground clearance of 10 per cent of the wingspan. While there may be some fuzziness in quantification, the net result of span dominated ground effect is clear. There is a reduction in induced drag and the temporary benefit of increasing the effective wingspan of your sailplane but bear in mind, *this only happens very close to the ground.*

Chord dominated ground effect

As a wing approaches the ground the high pressure beneath the wing increases because of the compression of air between the wing and the ground. This 'air cushion' effect causes a landing aircraft to tend to float briefly before touchdown. This phenomenon was exploited in the 1920s by passenger-carrying seaplanes such as the Dornier DO-X which could only cross the Atlantic by flying just above the sea. Some navies have wing in ground effect (WIG) vehicles. These curious half ship, half aircraft hybrids have wings shaped to maximize downwash and to trap the air cushion.

Pilots of low wing aeroplanes are well aware of ground effect "float"; some uncomfortably so, if they make their approach with excessive airspeed. Compounding excess energy with ground effect can be a real embarrassment!

The air cushion ground effect is most pronounced in low wing, low aspect ratio aircraft with large wing areas. It is virtually zero in sailplanes because of their narrow chord, high aspect ratio wings.

Ground effect during take-off – a potential killer

The "boost" from ground effect can give a false sense of security to pilots of heavily loaded aircraft during take-off. The consequences can be lethal. Factors like short fields, wet grass, high density altitude, adverse winds and flight path obstructions can tempt pilots to drag their aircraft prematurely into the air; risky in any circumstances, particularly so if the aircraft is overloaded.

Any overweight, underpowered aircraft is at hazard if ground effect plays a significant part in its take-off performance. This includes self-launching sailplanes. What

can happen is that the reduction of drag in ground effect gives the pilot a sense of excess power for the climb. If there is insufficient power to sustain a safe speed the aircraft slows down. If the pilot attempts to raise the nose to keep climbing, more airspeed is eroded. Persistence will inevitably lead to the aircraft sinking back to earth, sometimes inconveniently, potentially disastrously. The proper technique is to *stay low in ground effect until a safe airspeed is attained.*

Heavily ballasted sailplanes on aerotow are particularly vulnerable. If the pilot of the towplane is unaware that the sailplane is heavy and initiates climbout after take-off before the sailplane has achieved the relatively high airspeed it needs (typically 70 knots), the sailplane pilot is placed in a dangerous situation. At lower speeds the sailplane feels to be flying comfortably near the ground despite the downwash and prop wash from the towplane. In part, this is because ground proximity is applying a smoothing effect to the "dirty air" behind the tug. Aileron control may also be enhanced because of the lower required angle of attack at a given speed, a by-product courtesy of reduction in induced drag, which allows the wing to fly at a lower angle of attack for the same amount of lift.

This all changes as the sailplane suddenly comes out of ground effect at a relatively high nose attitude (angle of attack), still in the dirty air behind the tug. At best, the pilot feels very vulnerable because of the sailplane's low energy state particularly if the tow rope should let go. At worst, the pilot is left fighting to avoid stalling near the ground while still attached to the tow rope – a very unpleasant situation for both the towplane and glider pilots. There is also a risk that the towpilot might interpret the mushing of the sailplane and attendant tail down force on the tug as a cue to abort the launch.

To summarize, so-called "span dominated" ground effect reduces induced drag and creates a virtual boosted wingspan. Less relevant to sailplanes, "chord dominated" ground effect compresses air under the wings, generating a kind of "air cushion" and reducing the rate of sink. On the face of things then, ground effect promises a lot to the adventurous sailplane pilot: reduced drag, increased virtual wingspan and reduced sink. A boost in performance for your sailplane resulting from ground proximity – something for nothing it seems. Almost too good to be true, don't you think?

Now, some solid research findings

Well, true or not for aircraft in general, there is a view based upon rigorous testing and associated analytical data which casts doubt on the usefulness of ground effect for sailplanes.

Research by Nathan Jones in 1988 as part of a USAF Test Pilot School project, *Glider Ground Effect Investigation*, demonstrated that the benefits of ground effect on sailplanes are quite limited. The study involved 122 scientifically measured sorties by a Grob Twin Astir and an L13 Blanik. Its main conclusion was, "... ground effect is not practical or safe to use in extending glide range". Significantly, Jones concluded that "... penetration airspeed

(appropriate MacCready ring setting) glides provide maximum glide range under normal conditions". That is, *pushing over on long final approach at around 280 feet and diving the sailplane to 10 feet or so above the surface to establish a ground effect does not gain any glide range more than what would have been attained had the ring setting airspeed been maintained*. The experimental data confirm that ground effect only increases sailplane glide performance when the aircraft is flown at relatively low airspeeds close to the ground. This is consistent with the reality that induced drag is greatest at low speed.

Although low and fast may look good, in practice ground effect does not come into the performance equation in any significant way. To be fair, Jones also noted that better performance in ground effect can be expected from sailplanes with "... long wingspans, high wing loadings, low parasite drag coefficients and high induced drag factors". It goes without saying there is a world of difference between the humble Blanik, the Twin Astir and, for example, an ASH-25. At the same time, it seems reasonable to suggest that the principles would remain the same, although the magnitudes would vary.

Reality check

Now here's the thing. Ground effect is a useful means of reducing induced drag and gaining *temporary* improvement in a sailplane's performance. It is there to be used in the right circumstances.

That being said, it's vital to keep the whole business of using ground effect in perspective. Low flying entails a special set of risks – aerodynamic and human. Flight close to the ground and observed relative motion can seriously impair a pilot's perception of ground speed and distance. Adrenalin levels are high, and everything is happening quickly. Reduced lookout for other traffic, unexpected obstacles like unseen wires and fences, as well as startled birds and stock, can provide unwanted split-second challenges for a pilot on a low level run. So, know the risks and be sure you can manage them before committing to reliance on ground effect.

Ground effect notwithstanding, marginal, low energy final glides are very dangerous. Whether you dive for speed in a last minute attempt to gain enough kinetic energy to zoom over fences, trees or other obstacles, or simply try to float over them at minimal airspeed with no kinetic energy margin, you are risking your neck in a big way. Don't do it. Choose a safe outlanding option while you have enough height to make a sensible decision.

Aerodynamically, pilots should bear in mind that ground effect adds nothing to performance in high speed finishes. *The actual saving in drag is minimal because induced drag is low* in high speed flight. Making matters worse, profile drag increases with the square of the speed and ground effect has no bearing on profile drag. Energy is wasted in a high-speed dive to burn off altitude on final glide. This is a direct consequence of increased profile drag and because the benefits of ground effect do not come into play until the sailplane is ten feet or so above ground at fairly low airspeed. All that extra speed and associated profile drag simply means the pilot has squandered time on task by accumulating more altitude than needed.

So, there are small performance benefits but they are nowhere near as impressive as the flight path of the sailplane suggests. On the other hand, pilots need to weigh carefully the risks to themselves and others near their flight path when deciding how best to use their final glide safety height.

And don't forget that high speed flight near the ground is often illegal.

Summary

Overall one can say that aerodynamic ground effect offers instructing and landing finesse benefits. It can also save your skin in undershoot emergencies, although there are serious risks that might result in the opposite outcome. For contest pilots, there are minor performance gains; unfortunately they tend to be overstated. On the negative side, for heavily loaded sailplanes ground effect can create a serious take-off problem. For all sailplanes, low energy floats with transitions into and out of ground effect are hazardous.

Regardless of where and when ground effect is relied upon, to use it safely and effectively demands realistic technical understanding, self-knowledge and discipline on the part of the pilot as well as skill, currency and situational awareness. ❖

Further reading

- Kermode, AC. *Mechanics of Flight, Ninth Edition*, Longman Scientific and Technical, UK Ltd. 1987
- Jones, Nathan H. *Glider Ground Effect Investigation Thesis*, Department of the Air Force Air University, Wright-Patterson AFB, Ohio, USA, 1989.
- www.aerospaceweb.org/question/aerodynamics/ground-effect/km01.jpg
- www.se-technology.com/wig/html/mainphp?open=aero
- www.aerospaceweb.org/question/aerodynamics/q0130.shtml
- www.avweb.com/news/airman/185905-1.html

Boot - belly - push

from page 13

learn about spins, will exit the spin before the elevator is moved at all. Forward movement of the stick "until the spinning stops" seems unnecessary. But that won't stop the spin in a Puchacz, for example. The spin exit mantra must include PUSHING the stick forward even in those gliders where the spin might already have stopped.

Although not mentioned in every account, centring the rudder and easing out of the dive when the spinning stops is recognized as a standard for all aircraft.

A simple mantra needs to cover all these possibilities, and should contain each of the essential elements for stopping the spin. It should sit in the back of the pilots mind through the 100 to 1000 hours that Dan mentions before something happens and the learning is needed. "**BOOT, BELLY, PUSH**, then recover" could be a simple, easily remembered, universal method applied to all gliders. Is it worth considering this as the standard teaching method? Might the FT&S committee comment? ❖

“a nine day learning experience”

on jumping into the deep end

Dan Daly (currently between clubs)

ON 11 FEBRUARY 2008, I read the Roundtable and saw the announcement for the Canadian Team and Coaching Camp, posted by Jörg Stieber. Purpose: a fun contest at SOSA with particular emphasis on coaching those who are new to cross-country and contest flying, 28 June to 6 July. Dugald Stewart reported from the CD perspective in the 4/08 issue, and you can see Dave Springford’s comments in the SOSA blog on their web site. I decided to fly. My perspective was as a pilot who had never seen a competition before, let alone been in one.

What possessed me to participate in the camp? I wanted to choose a new place to fly and get familiar with the people/clubs in Southern Ontario. I was moved by the military in 2006 (to Ottawa), 2007 (Toronto), and was supposed to return to Ottawa in 2008 – but that changed at the last minute, and I’ve remained in Toronto. That pretty well killed flying in 2007 and 2008. I wanted to fly! I signed up and hoped to get some flying in before the camp; of course, that didn’t work out, and I went to Gatineau the weekend before to get my glider and move it to Toronto.

I had always had some reservations about competitions – seen from afar. I worried about safety, and in particular, finishes mixing contest pilots with club pilots, and the somewhat cavalier treatment of airspace violations by the rules (my opinion). For finishes, I had two concerns –

finishes that scrape over the boundary fence, and fast “worm-burners” where competitors burn excess energy during low passes (exciting, but from my perspective, a bad example for students who might try the same thing without the skills to do it successfully. It wasn’t anything like that. I was happy to find that my concerns had been addressed by the rules (former), and the discipline of the SOSA club (latter). To avoid penalty, one had to enter a 2 km radius finish cylinder at an altitude of 500 feet or higher (rule 12.5 of Nats rules 2007 on the SAC document vault). This provided a lot of energy, so scraping in penalizes you more than landing short of the field. For the second concern, it proved to be groundless. Good communication between the pilots in the competition and the operations staff avoided any conflicts.

Entering closed or restricted airspace, according to the 2007 rules, costs one point per second, and I believe we used two per second (first offence). I think this is not sufficient, particularly where we fly in busy airspace. We are complacent about airspace violation, and our own competition records provide the proof. I know that in international competition, airspace violation is scored as an immediate landout. We should use the same rules in Canada to show we’re serious about violations of the law.

So, on to the flying! I’ll be flying in a brand-new area, at a new club, with no flying yet in that summer. My competition experience, none; I had never been particularly interested in competition against others, more against gravity as I flew cross-country. I learned with the Cadets in 1974, and have flown with Winnipeg, Bluenose, and Gatineau in Canada, and the High Flights club in Colorado. I have just under 1400 flights, and 400 hours (lots of winch). Cross-country: Gold badge #316, Diamond goal and altitude, OLC km in 2004/5/6/7 – about 5900 km total (mostly in US, where my job took me). I own a 1965 Standard Austria SH-1 – an all-flying Vee-tail, fibreglass (cockpit)/wood (everything else) single, around 34:1, with mechanical PZL diaphragm-compensated TE vario (lotsa history there), and a Borgelt B-40 electric vario. I use a 1995 Volkslogger, and have an Ipaq 3955 running *Pocket StrePla* which I really must get around to installing someday. Hardly state of the art, but about the same as a few others were going to fly – Juniors, SF-27A, and going in.

I did do a couple of cross-countries in the Condor soaring simulator program. As you can see, I was well positioned to excel (tongue firmly in cheek)!



Each day began with a comprehensive briefing on an important topic, followed by a safety topic of the day, presentation of the previous day's winners (who told how), and the day's weather and task. Even if you don't intend to fly, I highly recommend attending just for the information. The first day thoroughly covered the airfield procedures, local airspace (including the task area), and the rules.

Some gems from the thermalling seminar from Jerzy Szemplinski, "Other gliders are helpful". From Walter Weir, "unless they're on the ground". Asked what the best vario was, opinions varied: PZL (Jerzy Szemplinski), Winter (Jörg Stieber), Sage (Ed Hollestelle). There were also rules of thumb – it should take no longer than a minute to centre a thermal so, because of this, and despite what you may have read, staying in the lift when it starts to decrease still slightly increases your average climb, and the extra altitude gained gives you a wider distance to find the next one. Makes sense ...

Jörg covered strategic decisions to increase cross-country speed, and there were a lot of good ones, including one technique to quickly find thermals under clouds early in the day, or if they become elusive later on.

Dave covered the WinScore scoring program, and it is not that difficult to use (I know, because I've tried). It could easily be used by a few pilots for an informal contest day, and you can learn a lot by seeing how rules affect you.

Lessons learned (or at least, noticed)

The grid The time needed from the briefing to grid was a *real* revelation. I was late the first day, and close two other times. Have a procedure down to get all the bits in place, flight recorder programmed (I had problems with it; of course, I'd never had them before – I eventually traced it to an intermittent contact), water (bottles – the Austria can't use ballast), pull out, and go to the grid spot. I ended up quite frazzled each day. Happily, I had a few minutes to get sorted out before each launch. They gridded the Novice class first, that made sense, since we were preparing the team for the World Contest, and having us strung out must have made for good practice for them.

Area familiarization I'd never flown in this area before, and it showed – particularly when we were twice re-tasked in the air. In my job, we live by the "Seven P's" – *Proper Preparation and Planning Prevents P'ss Poor Performance*. This was my bad. Had I done a proper map study, and had the IPAQ/PocketStrePla been working, my workload would have been halved. As it was, on the first airborne re-tasking – the first day I flew – I was unfolding a map to sort out where Woodstock was (probably not the concert locale), when another competitor passed over me by about 100 feet. I promptly put the map down, and flew around the area avoiding others as they reprogrammed their computers, folded maps, looked at clouds, etc, and let them go on their way – I wasn't ready for anything but the task that was called on the ground. Also,

on two occasions I got low – on one I landed out – and in both cases, within about three kilometres there was an airport I didn't see. No harm done, but having an aero-retrieve would have been better than a four-hour retrieve by road from a knee-high corn field.

Best bits I found the best thing were the briefings by the day winners. Having been there, seeing what decisions they made in comparison, moved me right up the learning curve.

Safety Two further thoughts. In some cases, some pilots didn't attend daily briefings (work, etc). They were highly experienced, and did get the CD's briefing, but I think that missed briefings should be minimized, and new pilots shouldn't be permitted to fly unless they attend (that may be my military background speaking, though). Also, it's a rule that all competitors have to turn left within 10 km of the start, and after growing pains early in the camp, all did. Then, on the weekend, when the club activity perked up, a lot of folks were turning right, which caused some surprise.

SOSA I liked the club atmosphere – very professional launch, everyone was polite and friendly. I'm joining for 2009, so I think you can say I was happy.

Equipment One thing I've seen before, that people may want to watch on early cross-country flights, is the tendency for some GPS recorders (like my Volkslogger, and I think a Cambridge in this case) to want to turn you smoothly from one course to the next at a turnpoint; so they turn you early to intercept the outbound course. I had a friend miss a 300 km by 100m in Colorado, and a new friend at SOSA would have missed a 300 km goal flight by less. It pays to do a few short local cross-countries (20 km triangle should do), record them and have an OO analyze them, to see how your flight recorder works. (It can also be done on the ground, but isn't nearly the fun.) With the Volkslogger, when it beeps to tell me I'm in the Observation Zone, I carry on for five seconds (counted out loud) before turning.

So, there it was; a nine-day learning experience, and there was a whole-lotta-learnin' going on for me. I came away with great respect for the competition pilots, the launch crew, and the organization for dinners, etc. Kudos to Dugald and Dave, for their leadership, and to SOSA for hosting.

Since the recently announced 2009 Nationals will follow a similar format at SOSA, will I fly? I don't think so, this year. Work looks like a bear in June, and I don't want to go in unprepared, which would be the likely result. I will attend, and help out, which can also be a lot of fun, and perhaps book a day or two in the back seat of the SOSA DG-505 to learn more. Also, the cross-country reach of the Austria is not huge, and I think I'll have to look at upgrading to a bit more performance and user-friendliness in rigging. I encourage anyone serious about learning more about cross-country flying to attend, though – just plan to come more prepared than I did!

2008 accident review

In 2008 we have had 17 accidents reported with no fatalities or serious injuries. The year is a substantial increase from four accidents in 2007 and closer to the annual average of 19 accidents/1.5 fatal. In the USA, with ten times the number of glider pilots, they had 29 accidents/3 fatal. This seems to indicate we are much less safe than our southern neighbours!

What is an accident? If the events result in damages or injuries, FT&SC classifies the event as an accident whether or not aircraft are SAC insured. Our hope continues that the club Safety Management Program efforts are having an influence in improving safety. However, note that no clubs have submitted Safety Program Manuals to SAC for review this year, or completed an updated safety audit. Please note that Edmonton Soaring Club had submitted their Safety Program Manual draft last year and I had not acknowledged them in my last report.

Accidents

Write-off L33 undershoot on approach. Circuit appeared to be normal until the last 100 feet when the glider lost height rapidly and landed 50 feet short of the runway in a soy bean field (the crop was only about 12 inches high). The glider ground-looped to the left and came to rest just over the runway threshold having rotated about 315°. Both wings were bent upwards at around the middle of the ailerons, the rear fuselage was crumpled and the main wheel attachment damaged. This was the third undershoot in less than a week.

Lessons learned This runway also slopes uphill and has some buildings nearby. Pilots may be fixating on the obstacles rather than the runway and have the illusion they are higher.

Write-off SZD-55 undershot the approach and hit a tree on final. Weather conditions were assessed as fairly benign with an approaching cb. Surface winds were 10–15 knots with moderate gusts. The pilot was observed to deploy full dive brakes before impacting the tree.

Lessons learned Confusion over airbrakes open/closed has occurred when the pilot has been distracted/stressed (Human Factors tunnel vision stress reaction). Often the pilot

is positive the airbrakes are held closed! On this particular flight the pilot indicated additional stress/distraction due to approaching poor weather.

Major damage Pik-20E motorglider was climbing out on take-off when the engine lost partial power. The pilot turned the aircraft around at low altitude, then suffered a complete power loss and crashed into trees at the end of a landing strip. The pilot suffered minor injuries. Not a club or SAC operated glider (NTSB report).

Lessons learned Common accident scenario for motorgliders. Partial engine loss needs to be treated as an eminent complete engine loss emergency procedure. Height loss in a 180 degree turn with the motor deployed can be 500–700 feet, therefore, if below this height (depending on type) the pilot must land ahead if possible with only shallow turns to clear obstacles. If above this height, a 180 degree turn to land on the reciprocal runway may be possible. A low circuit on partial power is high risk.

Major damage Pawnee was landed hard and the gear collapsed. A new tow-pilot had just been checked out on the Pawnee and was on a flight to get familiar with the aircraft. Damage included both leading edges, both flaps, right wing trailing edge, prop, engine(?), undercarriage and underside of the nose cowling. Not insured with SAC.

Lessons learned Type check for these single seat towplanes are higher risk. Transition from lower weight tandem seat to higher gross weight/power single seat needs good power management skills. Pawnee landings (high rate of descent) can be improved with some power added (1000 rpm) so “check-out pilots” should look for good technique.

Major damage L23 was damaged in a bounced hard landing. Student (solo?) didn't round out and stalled from 15 feet after the bounce. Cockpit buckled, spar damaged.

Lessons learned No SAC accident report.

Major damage Scout towplane flipped over on landing roll. Pilot landed long to avoid runway congestion, then had a difficult touchdown and added power to get things settled down. Pilot was not aware of shallow ditch at end of field when rolling to stop.

Lessons learned

Overshoot to go around is better than trying to salvage a landing. All pilots should review an airfield hazard briefing.

Major damage Pawnee prop struck the ground and suffered engine and tail wheel damage. Pilot attempted to make a tight taxi turn from stopped position. Pilot applied too much power without the elevator up and as the plane started to turn, it nosed over. Wind was estimated 15 knots.

Lessons learned Pilot currency was low and low on type after winter season lay-off. Pawnee has sufficient power to nose over if stick not held full back.

Major damage L33 was landed in trees in undershoot. The experienced pilot flew a standard left hand circuit and was observed well downwind of the runway and quite low. Winds were 15 knots gusting 20. The pilot descended into a swampy/treed area about 500 metres from the threshold of the runway. At tree height, the glider nose dropped through the trees before impacting the ground. The front two feet of the fuselage sank into a swamp, crumpled and seemed to absorb most of the impact. The fuselage and wings were also damaged. The pilot was not injured.

Lessons learned Pilot may have lost sight of reference point. Flying in strong wind conditions in the spring and fall are higher risk situations requiring currency. Experienced pilots lacking currency may be reluctant to take dual practice with an instructor.

Major damage ASW-20 made an undershoot and struck a building. On base leg selected 35° flaps with full airbrake. On final, undershoot detected, closed flap to 8° but did not close airbrakes, then flaps slipped open to 55°. Pilot closed airbrakes and lifted wing to avoid building but airbrakes reopened and left wing struck building/shrubs yawing glider 90° and landed hard damaging left wing and fuselage.

Lessons learned Final flap selection should be done when pilot is on final and is certain that landing area can be reached. Airbrakes should not be used until overshoot established. Once airbrake is used the pilot should not let go of handle.

Major damage Discus groundlooped during outlanding. The rate of descent was too high on final and roundout was made with too much airbrake as pilot tried to avoid ditch farther down landing area which

was not detected earlier. The tail boom was extensively damaged.

Lessons learned Distraction when completing time-critical tasks can easily lead to overload on pilot. Overflight inspection of the landing area for obstacles is critical. Safety Officer suggested that spring check-out for cross-country pilots might include a simulated outlanding/spot landing, with an alternate reference point designated on final by the instructor.

Moderate damage L33 landed too fast and bounced. An experienced pilot was unable to unlock airbrakes for the landing. A no airbrake landing was attempted and the glider ended up on an appropriate approach angle but at too high an airspeed. The glider floated a considerable way down the airfield and then bounced a couple of times before coming to a stop. The damage resulted in wrinkles along the tail cone.

Lessons learned The circumstances seem to indicate that this was a pilot induced oscillation landing. Pilot currency may have been a factor.

Moderate damage Genesis 2 aborted a take-off during a wave camp. Glider nose wheel hit a bump/gopher hole (twice) and the glider pitched up at high angle of attack. Pilot released on second bump and glider stalled from about three feet, damaging fuselage seam forward of the main wheel.

Lessons learned Later models of the Genesis 2 (after serial #7) were redesigned with main wheel 50 mm back to reduce pitch sensitivity on grass runways. Glider is prone to pitch up if nose wheel is close to uneven ground. This flying wing also has a much higher drag at greater angles of attack than conventional narrower glider wings and pitch control can be difficult. Earlier release at first hint of difficulty may be required.

Moderate damage Grob 103 rear canopy came open in flight, smashing the Plexiglas but the frame was not damaged.

Lessons learned No SAC report.

Moderate damage L13 damaged tail structure on landing. The tail wheel failed, apparently on take-off, and on landing it wrenched itself out of the fuselage, tearing two bulkheads on the way.

Lessons learned This is a common problem with L13 operated on grass fields. Many clubs have modified the tail assembly with more substantial structure.

Minor damage Grob 102 damaged landing gear in off-field landing on a local flight. Pilot was caught in sink and headwind. After circling a golf course twice he chose a long fairway and made a steep approach over the trees with full airbrakes. The flare was a little too high and as the airspeed decreased the glider landed somewhat hard, and came to a stop in front of the green.

Lessons learned As a result of this occurrence, club has developed a set of minimum altitudes for various areas around the field, which will be taught to all pilots flying with us. In addition, students will be restricted to certain areas until they have passed the Bronze badge stage.

Minor damage 2-33 made an undershoot on landing. The pilot was very inexperienced and on a first solo flight of the year. Wind conditions were strong for a first solo on an unfamiliar runway. The skid was ripped off in the landing.

Lessons learned Closer supervision may have prevented pilot from landing solo on unfamiliar runway in difficult wind conditions.

Minor damage DG-400 rudder was damaged. No SAC report received.

Incidents

- Interrupted DI, glider was flown with "remove before flight" cover on TE probe.
- Glider was towed above scattered layer of cloud, which became broken and resulted in a forced landout.
- Towplane took off on a tow without take-off flaps set and carb heat on. Pilot omitted take-off check due to change in routine.
- Lark airbrakes not checked locked before take-off and opened at 3 metres above the runway.
- APIS motorglider engine door hinge failed (glued to engine door) in flight during engine extension/retraction. Engine would not start in flight.
- Citabria engine oil cooler discovered ruptured on the bottom seam without indication of a problem on previous flight. Some sludge in cooler indicated oil change interval should be increased to every 50 hours and installing external "spin-on" oil filter warranted.
- HP-14 canopy opened on take-off. Right side not locked. Glider released at 500 feet, landed on adjacent runway but groundlooped on landing without damage.
- C-150 towplane failed to hot start and

- engine caught fire after pilot "throttle-primed" engine in subsequent attempts.
- C-150 towplane cosmetically damaged by hail.
- 1-26 loose seatbelt in turbulence resulted in small crack in canopy.
- ASW-20 airbrake not properly connected and opened partially on one side in flight.
- 1-26 hard landing from too high a flare in short landing attempt. Bent wheel rim slightly.
- Air proxi with towplane and L13 training flight. Instructor left separation up to student but contact lost flying into sun.
- 2-33 pilot was caught low downwind in windy conditions and had to land straight in.
- ASW-19 take-off with taidolly attached, aborted after lift-off and following a radio call warning.

Analysis

It seems a number (six) of accidents (incident also reported of 2-33 undershoot without damage) involving undershoots needs some reminders and more thorough training in this area. Pilots should not attempt to use airbrakes (spoilers) unless they have established an overshoot situation on approach. Only enough airbrakes to keep the reference point from moving up or down in the field of view should be used. Whenever an undershoot situation is detected, the airbrakes should be closed until an overshoot is re-established. Then an appropriate amount of airbrake should be used.

Often winds are a factor in many of these accidents/incidents and pilots may not have turned base soon enough to compensate for the wind. When winds are very strong (15+ kts), base legs are not recommended beyond the airfield boundaries for most lower performance gliders. In some cases, pilots may be losing sight of the reference point (RP) by flying a square downwind/base and by not turning towards the base leg when they could to maintain visual contact with RP. By the time the turn to base is started they have drifted too far downwind in stronger tailwinds.

Human Factors has also played a part in several of these events with distraction and/or lack of situational awareness being prime factors. On many occasions pilots have moved controls inappropriately when they believed they had done the complete opposite. When the reaction of the aircraft is not what they expected, the resulting surprise (stress reaction) can often manifest itself as momentary paralysis or lapse in their

decision cycle. Often releasing the airbrake handle to set flaps has contributed to this problem.

Many of the incidents could have led to serious accidents. The pilots were lucky. Safety programs based on luck will surely fail. The majority could have been avoided with proper preflight planning/preparation by proper use of checklists or DI. There is also a rise in student-related accidents. Students have also experienced difficulty landing dual gliders in early solos as a result of more pitch sensitivity due to changed CG without the instructor. This can result in higher flares or PIOs. The recommendation is to add 15 kilograms to the pilot's weight with secured ballast to return the CG to close to the same position.

In addition, instructors assessing the pilot's intuitive ability to recognize consequences of poor decisions and actions may reduce accidents with early solos. Some students may be good at these cause and effect situations but others may not. Solo flight should not be done until the pilot has been observed making good responses to scenario-based training (SBT) situations over a period of several dual flights. A single surprise rope break may be inadequate to measure a general readiness for changing conditions or emergencies. These responses need to be tested and measured over time and any weakness addressed with additional exercises using SBT.

Last but not least, a reminder on the L33 may be prudent. We have similar accidents on this type year after year. Type briefings and preparatory training in tandem aircraft for the L33 has been inadequate. This glider has powerful airbrakes that increase the stall speed by over 7 knots and the pilot manual recommends increasing the approach speed by 10 knots when full airbrakes are used with the resulting increase in approach angle and high rate of descent. Full airbrakes should be avoided unless a serious overshoot has occurred, otherwise an undershoot situation can quickly develop. Full airbrakes should not be used on short final due to high rate of descent and chance for bounced landing. In addition, landing with full airbrakes on this type is not recommended in the POH. Dual practice in another glider can be set up to simulate the technique required before sending pilots solo on type.

Conclusion

It's interesting to see that over a period of 10–20 years there are few new accidents, just new pilots having similar accidents. Our aviation information systems have also been in place though it seems with little effect, so more information is unlikely to reduce the accident rate. *Insanity is repeating the same process over and over expecting a different response.* Unfortunately, no one is going to come to our rescue until an aircraft is invented that will prevent us from hurting ourselves. I am told that with the invention of ABS and airbags there are no fewer automobile accidents, just more injured people. "Seatbelts save lives", yet any police stop will show a large percentage of drivers still not wearing them!

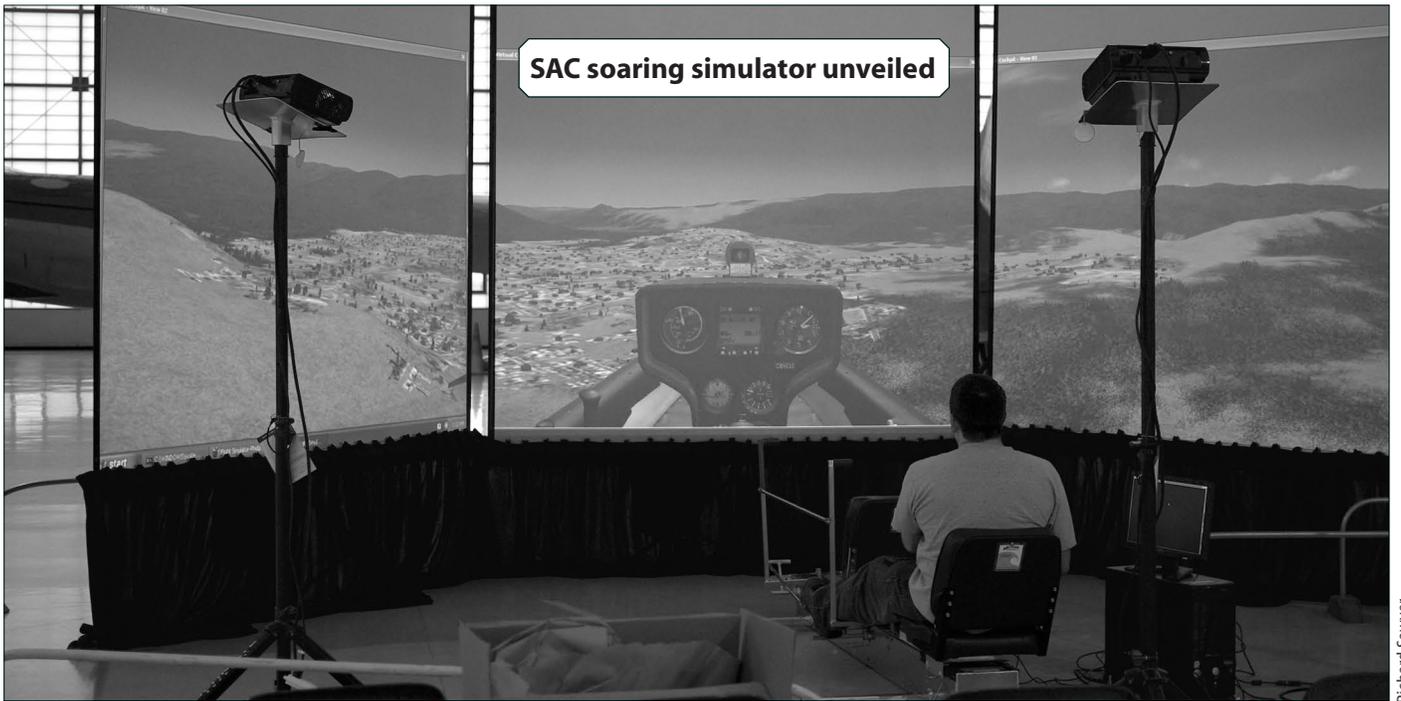
You and your club are the only ones in a position to make any immediate changes in your safety. So far, the overall effort of individuals in clubs to provide a safety program and introduce a process of hazard identification, risk analysis, and mitigation strategy at the club level has been slow (see club safety status table opposite). Safety is a deliberate cyclical process to educate ourselves and newcomers on what needs to be done to avoid injury and damage. We cannot leave it totally to the individual nor can we place rules to enforce everything. We need to look more at a deliberate recurrent training for pilots that go beyond the spring refresher, and better instructor refresher

training. The FT&SC is working on these tools but that should not stop clubs/CFI from implementing their own programs now. There are proven safety processes out there that work. Safety training information is on the SAC web site documents page. Find a safety program that works for you and start implementing it. My thanks this year to clubs for sending in safety information.

Dan Cook, chairman

SAC SAFETY PROGRAM				
club status as of Jan 2009				
Club	1 Annual Safety Report	2 Incident / Accident Analysis	3 Safety Audit	4 Safety Program Manual
Eastern Zone				
ACES				
Cantons de l'est				
Outardes			Oct 00	
Champlain				
Quebec		Jan 09		
Montreal	Jan 07	Jan 07	Nov 00	
Ontario Zone				
Bonnechere				
Erin Soaring				
Gatineau	Jan 07	Jan 07	July 01	Jan 05
Great Lakes		July 08		
Guelph				
London	Dec 07	Dec 07	Dec 00	
Rideau Valley				
SOSA	Dec 08	July 08		
Toronto				
York		July 08		
Prairie Zone				
Prince Albert			Jan 01	
Regina				
Saskatoon	nil rpt	Dec 08	Nov 00	
Winnipeg	Dec 08	Nov 08	Nov 00	Jan 09
Alberta Zone				
Central Alberta				
Cu Nim		July 08	Dec 00	
Edmonton		July 08	Mar 01	Jun 08
Grande Prairie				
Pacific Zone				
Alberni Valley				
ASTRA				
Cdn. Rockies	Oct 08	Oct 08		facilities HB
Vancouver	Dec 07	Dec 08	Dec 00	
Pemberton				
Silver Star	Dec 08	Dec 08	Nov 00	Dec 07

- 1 Date of last report to SAC. Shows how club intends to mitigate incidents/accident. Should be updated annually.
- 2 Include in club annual safety report or separate. Shows analysis of accident/incident. Should be updated annually.
- 3 In last three years none forwarded with updated information.
- 4 Manual explains how Safety System will be implemented. (hazards>risk assessment>mitigation)



Richard Sawyer

Above: Nelson Pigeau, an instructor from Silver Star Soaring, was the SAC simulator project engineer and wrote the software code for the control sensors and interface. Below left: Nelson demonstrates the simulator's functions and capabilities including pause, record and playback of exercises on Microsoft *Flight Simulator*. The simulator also has Condor software for advanced soaring training capability. Below right: FT&SC members Bryan Florence and Richard Sawyer make adjustments to rudder pedal system under the simulator control platform.



Tony Burton



Tony Burton

The simulator was unveiled at the SAC AGM on 8 March. Paul Moggach from York Soaring developed the concept for a portable simulator and the Flight Training & Safety committee adapted it for the current version. The FT&SC had a base and control unit designed by Silver Star volunteer Bob Fieldhouse, and Nelson Pigeau volunteered for the software engineering support and set-up for the project. Full Lotus Manufacturing in Vernon, BC did fabrication.

The SAC simulator project has delivered three systems to be used in the Eastern, Ontario, and Prairie zones. Their use is primarily for

instructor initial and refresher training. The systems will also help support pilot recurrent training in the winter months and regional soaring promotional efforts such as air shows or aviation minded gatherings. We are working on both instructor lessons and recurrent training scenarios for the simulators.

The simulators employ three projectors and screens to create the illusion of motion with a moving horizon across both peripheral views. A rate of 34 frames per second allows reasonably smooth image motion. The systems also have Condor software which supports only two projectors/screens and the

simulator can be reconfigured in minutes. The future hopes to include *X-Plane* software as another option. The system employs portable stand/screens that can be moved in an automobile with fold down seats. The base control platform is aluminum and weighs less than 25 kilograms.

Each system costs a little over \$5K but clubs willing to provide their own labour could build their own system around \$4K. Future improvements in the works include a "yaw string", Blanik cockpit, and simpler/stronger rudder pedal system for club kits.

Dan Cook

A new FAI 13.5m class

The IGC has approved in principle a new competition class to replace the World (PW-5) Class. Given final approval at the IGC meeting next year after all details have been worked out, this change would be effective as of 1 October 2013.

The proposal from the Light-end Working Group will see an FAI 13.5m class defined to allow all gliders and motorgliders with a wingspan of 13.5 metres and less to compete in FAI-sactioned competitions. This class will use handicaps, such as those used in the FAI Club class, to allow older and newer gliders to participate and to achieve competitive fairness among all gliders, and is to replace the FAI World Class at WGC and international competitions.

To increase competitive opportunities and participation in countries with a large fleet of particular gliders, monotype (single-design) subclasses may be defined in competitions of the 13.5m class, with additional scoring kept for each subclass. A subclass is defined as any set of at least N gliders of the same model and unmodified, officially registered in that particular WGC or international competition. The suggested minimum number N for a subclass at a WGC is 10.

Mis-rigging stories

... I first flew a Sagitta at Bryan, OH after one of the members had just bought one and had rigged it with the aileron drivers outside their mating sockets – both ailerons were UP about 30°(!). I arrived to find a huddle around the aircraft discussing why it handled so strangely and sank like a brick – I was asked to fly it and give my opinion. *After re-rigging it flew like a dream.*

Years later I bought one and refurbished it as my personal aircraft, but basically to resell and use up slack shop time. After an outlanding and a re-rig I was ready to launch and had just closed the sliding bubble canopy when I felt that it seemed slightly more difficult to close. My crew assured everything was okay but in fact the upper and lower wing pins had been reversed and one was about 1/8" longer than the other and *just* touched the canopy centre track causing a slight pressure on the canopy overcentre lock. That resulted in the canopy opening on a take-off run bump and the canopy standing up vertically ... A very hairy 'open cockpit' launch followed with me trying to hold

What is the TSP?

OSTIV's Training & Safety Panel (TSP) was invited to give a presentation at the recent IGC meeting in Lausanne. The main thrust of the request asked for proposals to the IGC to improve (pilot's awareness for) safety, particularly in competitions. Last year the chairman of the Sailplane Development Panel (SDP) presented its "Cockpit Damage Report" resulting from the extensive work by that panel to gather useful data to be used in improving cockpit design to provide better crash protection to pilots. (*See article referring to this subject in the previous issue. ed.*) The work of the TSP differs from that panel's hardware and cockpit design approach to one of safety considerations, and concentrates on Human Factors, such as the reactions of pilots to outside influences. These factors include physical as well as emotional factors.

As chairman of the Training and Safety Panel, I have been working to prepare for the IGC meeting with the panel members from several countries. The work of the SAC FT&SC has been very useful in this regard, providing several ideas that will be incorporated into the final recommendations.

Ian Oldaker, SAC OSTIV representative and Chairman of the OSTIV TSP

the canopy with one hand and fly with the other – after most of a circuit it proved impossible to hold any longer (too low to bail out anyway) and it took off over the side, cutting me and hitting the tailplane while just a few hundred feet up. Being a wooden frame, it didn't damage the tail but it could have cost my life.

The lesson is to never let yourself be stampeded to launch or ignore *any* small sign of potential trouble – also a second person pre-flighting an aircraft after rigging is a good idea (after all, you *know* it is right because you just put it together). I have stopped two launches as slack was being taken up when nobody seemed to notice a tail dolly still on and aileron chocks still in – seemingly impossible to overlook.

Ross Nolan

This bit of miscellany was the tail end of a discussion on the HP-gliders group about locking the HP-style V-tail in place with the rudder driver out of its socket. All good evidence for the value of the positive control check – do it! editor

SAC Insurance report

First, I want to thank all the club Treasurers for distributing and collecting the renewals for their club and private owners. Their work helps ensure that both insurance and SAC membership are both processed and kept in sync as closely as practical.

SAC continues to apply a *Claims Surcharge* to those with claims in the last three years. This amount is in turn rebated to all owners with a claims-free record in the form of a *No Claim Bonus* at each renewal. For 2007, the plan rebated a total of \$6585 to those owners with claims-free records.

As I write this report, we are in the process of starting to ready Requests for Proposals to send to interested underwriters in the Canadian market. Once we have received responses, they will be evaluated and we will finalize any changes for the 2009 plan. Even given the slight bump in our claims last year, we are hoping to not see any increase in rates. We are also cautiously optimistic that we feel no impact from the general world economic climate.

For the 2009 season, we are negotiating changes to extend towplane coverage to allow towing by qualified Recreational Permit holders as well as Private Pilot licencees. This coverage is subject to the towpilot qualification guideline published by FT&SC.

As the insurance year is now re-aligned with the SAC membership year, the policy year will run from 1 April 2009 – 30 March 2010. Renewal packages this year will be sent out to each club treasurer or contact during March in advance of the 1 April renewal date. As in previous years, coverage will be extended for the month of April to renewing owners to allow for the renewal process.

Our insurance coverage – major points

While we are all aware of the insurance premium we pay at the beginning of the year, what exactly are we buying with that premium? While this touches on the major points, both the plan coverage summary and policy document are available from your club treasurer. It should be required reading for all club executives and private owners. This helps to ensure that not only do you know what is being provided, but also what your responsibilities are. Claims reporting guides are also available to keep in your aircraft should an accident occur.

Insurance history

As you see below, our loss ratio took another hit for 2008. This shows the impact

that three to four significant accidents across the country can have on the plan as a whole. This blip in losses over the last two years has at least partially been offset by some of our worst years (like 1997 below) continuing to fade into history.

Who and what is covered?

- All SAC members (student and licensed) when flying SAC insured gliders and tow-planes. There are currently no requirements for specific experience. It is important for clubs to ensure that their members' SAC dues have been submitted in a timely manner.
- Guests (FAI affiliated members eg. SSA, BGA) members when flying SAC-insured aircraft.
- Private and club aircraft listed under the plan are insured for "pleasure and club business".
- Gliders – instruction and rental to club members and guests. Intros are classified as "day members", so clubs should try to ensure that some type of day member form is completed. Everyone receiving formal instruction as a regular club member should be a SAC member.
- Towplanes – towing gliders and instruction of towpilots but *not* any other use of the towplane for hire or reward (this means club members and the towplane are *not* covered if members are using them for personal pleasure flying or accumulation of log time.)

Hull liability This is the coverage that covers most accident damage to your aircraft. It covers the aircraft and its normally installed permanent equipment. You purchase a

specified value of coverage for each aircraft that should reflect the value of the aircraft and its normally mounted equipment and instruments. This does *not* include your glider trailer. It is not a good idea to underinsure your glider. One way to view this is that the insured value should be an amount that you would be happy to receive if your glider suddenly disappeared from your trailer.

There is currently a \$500 deductible per incident for hull coverage. There are options to increase the hull deductible to either 5% or 10% of the hull value, providing a decrease in the premium. Many other aviation policies and recent proposals have higher minimum deductibles.

General aircraft liability

This coverage provides payment in the case of damage to other property, other people or you that may occur involving your aircraft while it is "in motion". Claims in this area are the ones that are potentially *huge*. Imagine the medical bills should a bystander or passenger be injured while operating your glider. Coverage is available in 1 and 2 million amounts per aircraft and unlike some policies we have reviewed in the past, the complete amount is available regardless of the number of people involved or type of expense. There is no deductible for this coverage.

Minimum liability coverage on all private gliders under the plan is \$1,000,000 per seat. Minimum liability coverage for club aircraft is \$2,000,000 per aircraft. One of the primary reasons for the higher club limit is that past club liability settlements have exceeded

\$1,000,000 at least in part because clubs are seen to be held to a higher standard of "duty of care" than private owners.

Premises liability

Coverage for all clubs is mandatory. This covers airport premises and operations other than aircraft to a liability limit of \$3,000,000. This coverage provides important protection to clubs for damages and injuries that could occur on their airfield (owned or leased), which do not involve aircraft. This coverage in the general marketplace typically costs a minimum of \$2500. The Premises liability coverage also provides \$100,000 of coverage for "Instructor Errors and Omissions".

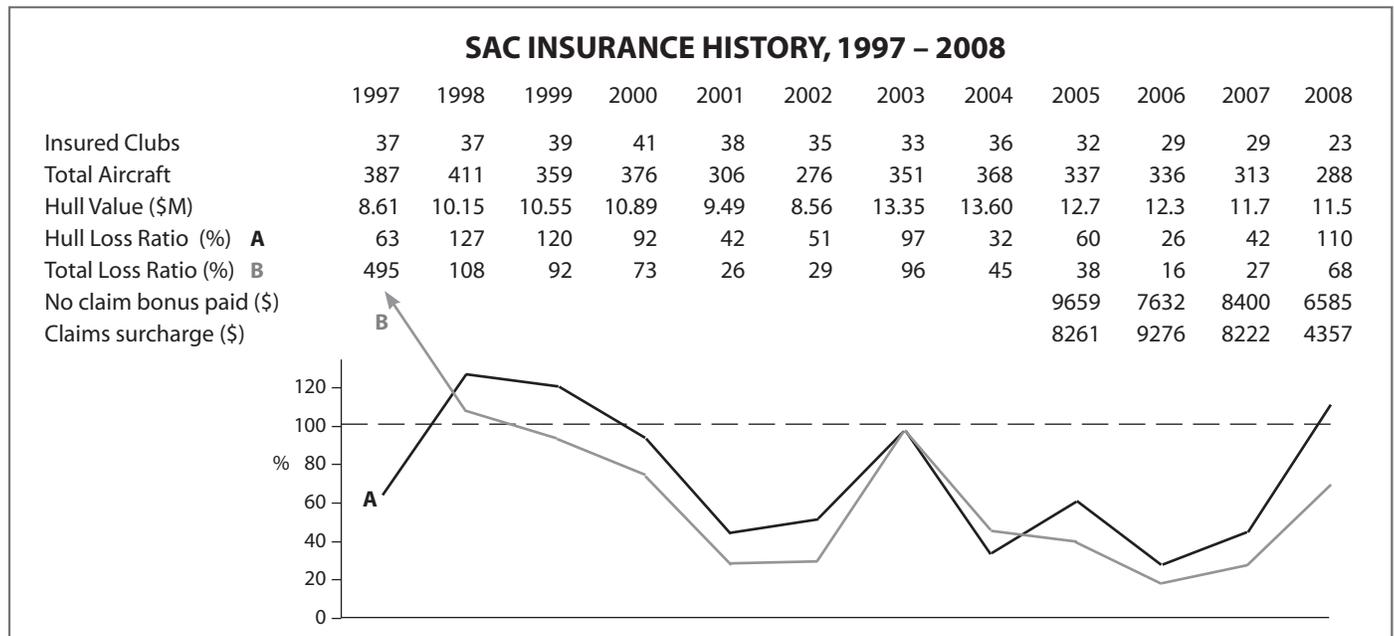
Claims service and legal representation

The insurance company provides claims adjustment and legal representation for all claims. Legal costs of defending a claim, particularly liability claims, can be substantial and are paid over and above the coverage limits purchased. We continue to have an excellent level of claims service from our insurance company.

For those with questions or comments regarding the insurance plan, please use the Insurance committee address, <insurance@sac.ca>, as it is usually the quickest way to reach me. I do try to reply back to people within a couple of days, though it sometimes may take somewhat longer depending on holidays and more complex issues.

Here's to a fun and challenging year of flying for everyone in 2009.

Keith Hay



SAC TROPHIES

* winners for 2008 *

Congratulations to the following pilots (and club) for their achievements in 2008. Full details of their flights are available on the SAC documents page, Minutes & Reports, in the SAC annual reports for 2008.

BAIC – best flight of year – **Tim Wood**

1175.2 km (1000.3 OLC)

it is also a 3 TP distance record

Canadair – best 6 flights – **Tim Wood**

200 – best 6 flights, under 200 h pilot

Derek Mackie

Stachow - highest flight - **John Mulder**

7975 metres / 26,165 feet

Walter Piercy Instructor of the Year

John Toles, Saskatoon Soaring

Hank Janzen Safety Award

Scott McMaster, SOSA

Roden - club of year - **Central Alberta**

Noted meteorologist dies

Tom Bradbury, a leading light in gliding meteorology, died on 2 February. He was a remarkable author and communicator having written excellent and highly understandable articles in *Sailplane & Gliding*. (Many were reprinted in free flight and are still available in the archive issues. Tony). He was also the author of the seminal *Meteorology and Flight*.

Tom was a very good competition weather forecaster. It's remarkable what he could do given the tools of the time (almost none!). I've seen accounts that his team forecasts for the British at various international championships were instrumental in their successes. Tom was calling the weather at least into the 1990s. I was on the UK Open competition staff in 1993 and 1994 at Enstone. Tom was at Husbands Bosworth for the 15m Nationals that was run at the same time one of those years, and forecasting for the Opens also. I recall noting that he called last usable thermal within ten minutes each day.

But the really stunning call was when CD Ken Sparkes called a task on a day when at the pilot meeting at 10 am it was raining steadily. The pilots were unbelieving, thinking they would get a rest day, but Ken told them to grid for a 1230 launch. Tom had told Ken that there was a gap coming and it would be soarable in the gap. We had an observer at Nymphsfield who reported when the gap arrived there. We also were tracking sequential

images via a Meteosat receiver. The gap slowed a bit and the launch was delayed by about 30 minutes, but it went off okay. If there was a relight, I don't recall, but certainly not more than one or two. Ken sent the task into the gap, dogleg to the southwest along the ridge, back up the ridge and dogleg back into Enstone as the gap moved out of the area. It was raining again before they could put the gliders away.

I believe it was Brian Spreckley who commented it was the gutsiest call that he had ever seen. It was Ken's faith in Tom's forecasts that really made it possible. Not everyone made the task but most did, and we had a contest day.

from *rec.aviation.soaring*

Airspace changes in Ontario

On 12 March a number of changes came into effect. These changes are the end result of a multi-year project lead by NavCanada to look at ways to improve VFR operations in the airspace surrounding Toronto. Normally when we hear the words "improve" and "airspace" used together we immediately think it's camouflage for some kind of airspace restriction on non-airline users. This time I'm happy to report that there are no real negatives for us. NavCanada did a lot of consultation with user groups ahead of these changes and they were receptive to our concerns. There were a number of things in the initial proposals that would have been quite detrimental to soaring that have not made it to the final version. Most of the changes that made it through the process and were put in place are either neutral or at least slightly positive for us.

Those wanting more detail can find it on the NavCanada web site. I think the only changes that have any negative impact on soaring are the expansion of the Hamilton Control zone size and the changing of the London control zone from Class D to Class C airspace. Given how we fly around these areas I don't expect either to result in any major changes to our operations.

One potentially positive change from the soaring perspective is the adoption of "Common Frequency Areas (CFAs)" for various sectors surrounding Toronto. The intent of the CFAs is that VFR aircraft will use the frequency in a given area for position reports and conflict resolution, much the way we use 123.4. For us, CFAs will increase the chance that we will be able to establish radio contact with powered aircraft that are operating in our vicinity. How effective this proves to be is still very much an open question, but it has the potential to be useful.

It should be noted that these changes represent the first comprehensive review of airspace around Toronto since 1989. Given the amount of time that has passed since the last review, and the scope of issues this review looked at, I think the soaring community can be quite happy with the outcome.

Scott McMaster

2009 Nationals at SOSA

After the very successful Team Training Camp held last year, the 2009 Nationals will follow the format developed for that camp. One hour seminars covering a wide variety of cross-country and contest topics will be held each morning in conjunction with the daily pilot meeting. Topics will include a breakdown of the rules and how they apply while you are flying, airspace in the contest area, task strategies for the Area and Assigned Tasks, speed to fly theory and optimizations, understanding the scoring and handicap system and IGC files. As well, the daily weather briefings will include an in-depth analysis to help each competitor better understand the conditions, and the winners' flights will be analyzed to help explain their winning strategy.

2009 Nationals

SOSA Gliding Club

1-10 July

practice days 29-30 June

<dave@sosaglidingclub.com>

web site coming soon

<www.sac.ca/nationals>

International XC soaring report

A fascinating report was prepared for the IGC that examines cross-country soaring worldwide using OLC data from 2008. The report, by Alexander Georgas, correlates the data in many ways to try to extract meaningful statistical information.

The report looks at the relationships between country, pilot participation by country and national membership, best and average task sizes and speeds by country, OLC use as a percentage of pilot population, how much foreign travelling is done for flights, country ranking by best and average flight performance, locale/airport rankings by best flights, etc, etc. All in all, it's an impressive exercise in data massaging. I have loaded the report on the SAC Documents page under "Other documents".

Tony Burton

Peter Corley Memorial Scholarship winner

This year's recipient of the Peter Corley Scholarship is Alan Grant. Alan spent his formative years growing up in and around the Gatineau Gliding Club where he is currently a member. Alan has accumulated 55 hours in gliders and has attained his glider pilot licence as well as his Bronze badge and his Silver C duration flight.



Alan graduated from Colonel By Secondary School in Ottawa with a diploma from the International Baccalaureate program and is currently enrolled in Honours Biomedical Sciences at the University of Ottawa with the hope of becoming a doctor some day. Meanwhile, he works to complete his Silver C and made his debut in competition flying at the annual May Fly contest hosted by GGC.

Alan says the generous award of the Peter Corley scholarship will help him reach his goals while continuing to be active in the soaring community.

AVV Champlain

Malgré la météo capricieuse, la saison 2008 fut mémorable pour Champlain. D'excellents vols ont eu lieu, dont les deux plus grandes distances OLC à l'Est de l'Alberta. Au plan de la formation, nous avons battu nos records en nombre de lâchers solo et licences en une seule saison et ce, sur des Lark IS28B2. Le Grob 109B, à sa deuxième saison en partenariat privé-public, est également un excellent outil de formation et très populaire auprès des membres.

Nous avons eu notre lot d'incidents, mais heureusement, rien de sérieux et nous avons su profiter de chaque situation pour se conscientiser et augmenter notre niveau de sécurité. L'année 2009 s'annonce très dynamique et motivante, avec encore une fois de grands projets.

.....

Despite capricious weather, the season 2008 was memorable for Champlain. Impressive flights originated from our airfield, including the two best OLC flights to the east of Alberta. On the training side, we broke our own records for the number of solos and new licences in a single season, using the Lark IS28B2 as trainer. The Grob 109B, in its second season as a private-public partnership, was also an excellent training platform and very popular in the membership.

We had too many small incidents, fortunately nothing serious and most importantly, we were able to learn from every situation to increase our awareness and our security. The 2009 season will see the progress of great projects and promises to be extremely dynamic and motivating.

Gabriel Duford

Rideau Valley Soaring

Total membership for the club was 42 members in 2008, including five or more ab initio students, some former air cadets rejoining the sport, and three very young members, which is a bit unusual. Club membership reached the point where we were not able to take on any new members in August, because of the heavy demand on the equipment. This shortage of capacity was made worse by poor weather during the summer, where a number of weekends were washouts. It may be necessary to limit membership to the club in the future.

With only four gliders, the training capacity (especially for ab initio students) is quite limited. Advanced students (solo) do not place the same strain on club resources, as they can fly the 2-33 solo, or 1-34 solo after completion of spin training in the Puchacz.

This year the club participated in the May Fly contest (GGC) and the wave camp at Lake Placid. The towplane hours were about the same as 2007, but flying hours were less than last year, primarily due to the poor weather. The Grob 103 was at Lake Placid in the fall and flew a total of about 40 hours, which is quite

good. The total club flying hours will vary depending on the weather. The number of intro flights was about the same as 2007, but, because people can purchase these flights from the web page, the club did realize a surprising surplus of flights purchased, but not delivered.

Interclub contest activity continues to attract participants, both very junior contest flyers, and pilots with two or three years of interclub flying experience. This contest is a great method of stimulating cross-country flying and developing skills. On contest days (with suitable weather) the club equipment is fully used.

In 2008 we bought a replacement radio for the towplane (ICOM). We added an EW flight recorder to the equipment available. It is suitable for badge and contest flights (IGC-approved) and relatively easy to use. A replacement tractor (Ariens) for glider towing was put into service at the beginning of the year. 2007 saw the purchase of an additional (identical) Massey Ferguson 135 diesel tractor for grass cutting.

We hope to train a couple of additional instructors. It seems we lose one or two every year and they are very valuable and hard to replace. Fortunately we have a couple of licensed members who seem to be interested and will probably take the course this summer.

The club is in a good financial situation, with a positive cash flow from 2008, and adequate reserves for continued operations. Capital projects under consideration include upgrading the gasoline tank to meet current standards (probably \$10,000), and a longer term project to either provide better "T" hangars or a large hangar for club aircraft and tractors.

John Mitchell

Montreal Soaring Council

2008 was not blessed with booming soaring conditions, or even continuous good weather, which shows in the reduced cross-country distances flown by our pilots. We did, however, enjoy an increase in flying members. OLC continued to provide a very positive influence on pilots logging their cross-country flights, once more proving the value of this worldwide institution. MSC had its third year in a row of accident/incident-free flying operations and we are actively pursuing safety among our members.

Financially the club is in good shape and we have plans to replace some of our older two-

the free flight CD – \$6

167 issues of *free flight* – 1981 to now.
87 hi-res soaring photos, and 2 article
anthologies. 490 MB. Great for
computer wallpaper & club events.

Order from editor.

seaters with modern fibreglass gliders. This will come at a much higher cost than the gliders being replaced, but it is felt that the positive aspects of more modern gliders will help us in the future. We have, in the past, exchanged financial information with other clubs and found benefits in comparing our fees and costs. It shows that most clubs have similar costs and similar rates for the use of their equipment. It is good to know that we are in the ball park with our rates and costs given that we are under the same inflationary influences with gasoline, aircraft maintenance, capital replacement costs, etc.

This year we computerized our accounting system, joining many clubs having taken this important step. We decided to use *Quickbooks* and found a not unexpected series of problems trying to make it work with our rate structure, etc. They were solved and we now have a functioning system.

The prospect of having to replace towplanes is still lurking on the horizon and we are constantly looking for affordable solutions. Winch would be the cheapest but not the most widely accepted one and would need secondary expenses in field improvements like paved strips to facilitate acceleration. There was some hope that the Pik 27 project in Finland would provide a solution, but it appears to have stalled.

We have experienced a serious decline in instructors during the past years and it was decided to help finance instructor training, thereby removing an obstacle to becoming an instructor in MSC. This was effective.

A note of interest for older members: Gordon Bruce, who was SAC and MSC president for many years, turned 90 last December and is in the care of the St. Anne de Bellevue Veterans Hospital.

John Bisscheroux

Air Sailing closes its doors

I'm sorry to report that Air Sailing Club closed for good on 31 October 2008. It had been a struggle keeping Air Sailing open over the past eight years and closing the club now was done by choice rather than necessity.

Too much work was being done by too few members and we simply reached the point where we felt that we would all benefit most from simply joining other clubs. I expect our remaining members will disperse amongst a few of the area clubs, helping to make them stronger in the process, and some of our older members are ready to retire from the sport altogether.

Southern Ontario pilots should note that our airfield was plowed under after October 2008 – I wouldn't want a cross-country pilot to find himself low and navigate to our field only to find it gone. Thanks to SAC for its support over the years.

Stephen Szikora

Saskatoon Soaring in 2008

Our activity started with the AGM and dinner in late January. Ground school was held in the spring, flying started in May, and 250 flights were logged over 39 days, mostly on weekends and Wednesdays. The winch was reactivated this season for a few flights, but winch launching the Blanik from the nose hook requires more runway than is available, limiting heights to under 1000 feet. Four students continued training, and four were introduced with our "6-pack" membership.

Many good soaring flights were logged on the OLC, and three of our pilots participated in the Western Canada contest at North Battleford in July. Two Silver badge legs were flown this season, along with some good soaring flights by students and the newer members interested in becoming certified for cross-country flight. Three of the days gave soaring conditions. As well as friendly competition and socialization, there were opportunities for introduction to cross-country flying in our two-seat glider. Fourteen sailplanes and sixteen pilots participated, including an entry from Winnipeg. Nearly half were in the Novice category, and they hope to continue competitive flying. Future cross-country pilots from Saskatoon also assisted on the ground, and got to do some flying at a different site.

John Toles

Vancouver Soaring Association

2008 was a good year for us. We can't claim to have had any great weather but we can say that the level of camaraderie and participation in the club has seldom been better, and this has shown through in almost every area of our performance. Over the course of the year our membership increased by 33% and our members flying hours in club ships from 620 to 762. We sent six students solo during

the year and currently have 15 students in the club. In fact we had to stop recruiting new members in August as the load on our instructor group was becoming too large.

Over a third of our entire student flying this year was done during our weeklong courses, which were in their third year of operation. Two course members joined the club and many of our regular members once again took the opportunity to fly during the weekdays. BCMOS flying also had its busiest year yet, making about 40 "Inspirational Flights". The weather was not kind to this group but they soldiered on to almost meet their target of 48 flights.

For the first time in several years we were able to run an Airline Pilot Conversion course this year that saw three rather experienced "students" reach solo standard and beyond – with all three now licence holders.

Our yearly training camp at Hope saw four new members join the club this year and was also very busy. This was another opportunity for regular members to come out and fly and there was lots of student flying too, including one solo. In addition to this we had two successful soaring camps in Merritt this year which proved beyond any doubt that this friendly and welcoming location further east and in a much drier part of the province, is a great place to soar.

2008 also saw the start of a new relationship between the club and the local squadron of the Air Cadet League. During the year we organized two long weekend visits for instructors, fam flight pilots and officers of the league who came to get a taste of local soaring. In both instances our groups blended immediately and took the opportunity to enjoy flying together in each other's ships. Equally important was the social aspect of the visit and all involved had a great time.

What of our plans for 2009? Primarily to continue our focus on providing a relaxed and welcoming atmosphere for all our members and their families and friends – a factor which was key in our good fortune last year. We're also happy to be in a position where we can offer reductions of about 10% in both membership and flying fees for the coming season. Beyond that we'll be continuing our BCMOS flying and are eagerly awaiting a set of hand controls for our Grob 103 which will allow a further expansion of these activities.

Our week long courses have proven to be an excellent way to up our fleet utilization and are also set to continue this year. So far we have had interest from as far away as ⇒ **p29**

CANADIAN RECORDS (as of 27 Feb 2009)

T A record set entirely within Canada – listed only if a "C" record is flown.
 C indicates a record by a Canadian citizen originating outside the country.
 (These are noted only when a greater "Terrorial" record does not exist.)

RECORD	OPEN	15 METRE	CLUB	FEMININE	MULTIPLACE
DISTANCE (km)					
3.1.4a Free distance	Marsden / Apps 1093.0 T 1984	Tim Wood 1093.0 T 2007	Mike Glatious 480.6 T 2002	Ursula Wiese 607.0 T 1986	Chester Zwyarch (R Adam) 495.0 T 1986
3.1.4b Free out & return	Tim Wood 541.4 T 2007	Tim Wood 541.4 T 2007	Tim Wood 498.8 T 2008	Ursula Wiese not claimed	Ernst Schneider (D Smith) 393.3 T 2008
3.1.4c Free 3TP dist.	Tracie Wark 750.2 C 2003	Tim Wood 750.2 C 2008	Tracie Wark 633.2 C 2003	Tracie Wark 750.2 C 2003	Charles Yeates (Kris Yeates) 464.8 C 2008
3.1.4d Free triangle dist.	Tim Wood 1002.4 T 2008	Tim Wood 1002.4 T 2008	Tim Wood 882.1 T 2008	Sue Eaves 508.7 T 1995	Trevor Florence (J King) 689.0 T 2002
3.1.4e Distance to goal	Brian Milner 1394.0 C 1993	Tim Wood 481.0 T 2007	Jerry Szemplinski 947.6 C 2006	Tracie Wark 592.6 C 2000	
3.1.4f 3TP distance	Tim Wood 481.0 T 2007	Tim Wood 481.0 T 2007	Tony Burton 515.7 T 2004	Tracie Wark 523.2 C 2007	Charles Yeates (Kris Yeates) 590.0 C 2008
3.1.4g Out & return dist.	Marsden / Apps 707 T 1984	Tim Wood 707 T 2007	Tim Wood 236.7 T 2003	Antonia Williams 305.0 C 1975	C Zwyarch (H McColeman) 310.0 T 1984
3.1.4h Triangle distance	Jerry Szemplinski 642.7 T 2007	Tim Wood 642.7 T 2007	Jerry Szemplinski 565.6 T 2007	Ursula Wiese not claimed	
ALTITUDE (m)					
3.1.4k Absolute Altitude	Bruce Hea 10485 T 1981			Ursula Wiese 328.0 T 1984	Dave Marsden (Ed Dumas) 421.5 T 1979
3.1.4m Gain of Height	Walter Chmela 12449 C 1974	15m record claims must exceed listed starter values	Tony Burton 525.5 C 2003	Tracie Wark 510.3 C 2002	Charles Yeates (Kris Yeates) 506.9 C 2007
SPEED, ▲ (km/h)					
3.1.4i 100 km	Dave Mercer 141.5 T 2004	David Mercer 141.5 T 2004	Dave Mercer 133.0 T 2004	Deirdre Duffy 898.6 T 1991	Bob Shirley (P Campbell) 908.3 T 1961
3.1.4j 200 km	Dale Kramer 168.1 C 1999	David Mercer 168.1 C 2004	Tony Burton 99.0 T 2003	A Cservenka 977.2 C 1969	VW Chmela (VanMaurik) 1039.0 C 1975
3.1.4k 300 km	John Firth 110.6 T 1984	Tim Wood 95.2 T 2007	Tony Burton 99.0 T 2003	Deirdre Duffy 657.5 T 1991	Bob Shirley (P Campbell) 710.2 T 1961
3.1.4l 400 km	Charles Yeates 116.3 C 1994		Tony Burton 101.4 T 2008		
3.1.4m 500 km	Kevin Bennett 113.1 T 1988		Dave Springfield 108.0 C 2006		
3.1.4n 750 km	Peter Masak 148.9 C 1985		Tony Burton 103.3 T 2003		
3.1.4o 1000 km	John Firth 99.0 T 1987		Rolf Siebert 128.9 C 2004		
	Rolf Siebert 140.1 C 2004		Tracie Wark 97.4 C 2006		
	Walter Weir 105.7 T 1991		Spencer Robinson 103.6 C 2003		
	Peter Masak 151.2 C 1985		not claimed		
	Willi Krug 108.8 T 1982				
	Spencer Robinson 118.7 C 2003				
	Peter Masak 106.5 C 1987				
SPEED, O&R (km/h)					
3.1.4i 300 km	Hal Werneburg 115.2 T 1983	David Mercer 115.2 T 2004	Bruce Friesen 113.6 T 2002	Ursula Wiese 59.6 T 1984	Ernst Schneider (D Smith) 112.7 T 2008
3.1.4j 500 km	Walter Weir 191.3 C 1989	Tim Wood 128.2 T 2008	Jerry Szemplinski 125.4 C 2007	Tracie Wark 132.3 C 2000	
3.1.4k 750 km	Kevin Bennett 126.3 T 1992	Tim Wood 128.2 T 2008	Tim Wood 98.1 T 2008	Tracie Wark 99.6 C 2002	Charles Yeates (Kris Yeates) 79.2 T 2007
3.1.4l 1000 km	Walter Weir 150.9 C 1996	Tim Wood 128.2 T 2008	Jerry Szemplinski 125.4 C 2007	Tracie Wark not claimed	
	Walter Weir 145.0 C 1994	Tim Wood 145.9 C 1994	not claimed	not claimed	
	Brian Milner 147.0 C 1999	Tim Wood 145.9 C 1994	not claimed	not claimed	
SPEED, GOAL (km/h)					
3.1.4i 100 km	David Mercer 167.0 T 2004	David Mercer 167.0 T 2004	David Mercer 156.9 T 2004	Tracie Wark 106.4 C 2002	Trevor Florence (N Marsh) 105.1 T 2000
3.1.4j 200 km	Rolf Siebert 183.7 C 2004	Tim Wood 128.2 T 2008	Rolf Siebert 169.0 C 2004	Tracie Wark 129.1 C 2000	Trevor Florence (J King) 91.5 T 2002
3.1.4k 300 km	Tim Wood 143.0 C 1995	Tim Wood 143.0 C 2008	Tony Burton 113.2 C 2002		
3.1.4l 400 km	Walter Weir 143.0 C 1995	Tim Wood 143.0 C 2008	Jerry Szemplinski 127.6 C 2007		
3.1.4m 500 km	Tim Wood 128.2 T 2008	Tim Wood 128.2 T 2008	Tim Wood 112.8 T 2008		
	Walter Weir 145.9 C 1994	Tim Wood 145.9 C 1994	not claimed		
	Tony Burton 81.5 T 1990	Tim Wood 81.5 T 1970	not claimed		
	Dave Marsden 97.1 T 1970	Tim Wood 81.5 T 1970	not claimed		
	Walter Weir 138.4 C 1993	Tim Wood 138.4 C 1993	not claimed		

49 Maitland Street, Box 1351, Richmond, ON K0A 2Z0
(613) 838-4470, <rogerh@ca.inter.net>

The following records have been approved:

Pilot Charles Yeates (Kris Yeates)
Date/Place 16 December 2008, Bitterwasser, Namibia
Record type Free O&R Distance, Multiplace, Citizen
FAI Category 3.1.4b
Sailplane DG-500M, V5-GBK
Distance 464.8 km
Course Bitterwasser - Tweeriver - return
Previous record 313.9 km, 2006, Charles & Kris Yeates

Pilot Charles Yeates (Kris Yeates)
Date/Place 16 December 2008, Bitterwasser, Namibia
Record type Free Triangle Distance, Multiplace, Citizen
FAI Category 3.1.4d
Sailplane DG-500M, V5-GBK
Distance 590.0 km
Course Bitterwasser - Tweeriver - Morester - return
Previous record Not claimed

Record flight narrative

The records flight on 16 December was a triangle to the SE of Bitterwasser with the first TP area being used for the Free O&R distance claim. The morning briefing indicated the humidity level had dropped below that of the previous three days, lessening chances of storms and showers. The temperature and dew point traces indicated that cu bases would be 10,500 feet asl by noon, rising to 14,000 in late afternoon as the temperature peaked at 35°C. As for the preceding two weeks, the best soaring would be to the east. The negative factor was an average 12 knot wind at all levels from the east. So the overall length of the task was chosen so it could be completed easily before sunset. The first leg was set southeast to minimize the headwind affects. The second leg north was also into a quartering headwind but during the strongest part of the day. The final leg would be straight downwind.

Starting just after 11:00 in dry thermals, height was guarded until the first cu wisps appeared. Reliance on the GPS/NAV was essential as the turnpoints were secondary gravel road intersections in a dusty, tussock and dunes landscape that had almost no significant landmarks. The second leg was along the Namibia-Botswana border and over the Kalahari Gemsbok National Park – lots of animals, no people.

Cruising between 10 and 13,000 feet was uneventful until a 35 kilometre gap appeared in the cu. Crossing this took us toward a large cloud near the second turnpoint, using up a lot of altitude, and putting us down to 2700 agl. This low point was a worry because there was no place to land if the motor didn't start, putting a premium on finding a thermal under the cloud that was threatening to produce rain. There a slow climb to 11,000 put us back in the game just before heavy rain started. We backtracked to the turnpoint and headed home, finishing easily over the Bitterwasser dry lake pan an hour and a half before sunset. In hindsight the triangle task might have been stretched to 750 km – an objective for another time.

GoogleEarth images of Bitterwasser and its surrounds give a very detailed view of the challenging landscape over which pilots fly. ❖

FAI BADGE SUPPLIES

Order through FAI badges chairman – Walter Weir

3 Sumac Court, Burketon, RR2, Blackstock, ON L0B 1B0

Note: item 6 not stocked – external purchase approval is given

1	FAI 'C' badge, silver plate pin	\$ 6.00
2	FAI 'C' badge, cloth	\$ 6.00
3	FAI SILVER badge, pin	\$50.00
4	FAI GOLD badge, gold plate pin	\$60.00
5	FAI badge Diamonds	
6	FAI Gliding Certificate	10 for \$39.00 to clubs \$10.00
	Processing fee for each FAI application form submitted	\$15.00
36	FAI SILVER badge, cloth 3" dia.	\$12.00
37	FAI GOLD badge, cloth 3" dia.	\$12.00

Order these through the SAC office

33	FAI 'A' badge, silver plate pin (available from your club)	\$ 3.00
34	FAI 'B' badge, silver plate pin (available from your club)	\$ 3.00
35	SAC BRONZE badge pin (available from your club)	\$ 3.00

Please enclose payment with order; price includes postage.
GST not required. Ontario residents, add 8% sales tax.

magazines

GLIDING INTERNATIONAL — A fresh new monthly magazine for the gliding community. Extensive around-the-world soaring news. Subscriptions, US\$52. Editor, John Roake, <www.glidinginternational.com>.

SOARING AUSTRALIA — monthly joint journal of the Gliding Federation of Australia and the Hang Gliding Federation of Australia. <www.soaring.com.au>.

SOARING — the monthly journal of the Soaring Society of America. Subscriptions, US\$46. Credit cards accepted. Box 2100, Hobbs, NM 88241-2100. <feedback@ssa.org>. (505) 392-1177.

SOARING NZ — Replaces the *Gliding Kiwi*. Editor, Jill McCaw. NZ\$122. Personal cheques or credit cards accepted. McCaw Media Ltd, 430 Halswell Rd, Christchurch, NZ. <j.mccaw@xtra.co.nz>.

SAILPLANE & GLIDING — the bimonthly journal of the BGA. £39/yr airmail, £22.75 surface. <www.gliding.co.uk/sailplaneandgliding/subscriptions.htm>.

Club news

from page 27

Holland and Belgium! There will be more effort towards promotion of these courses in the coming year also.

Although the 2009 season has not started, there are plans for a large expedition to Ephrata, Washington in June for those of us hungry for new soaring experiences. No firm dates are set but it's also easy to imagine that we'll be returning to Merritt, BC again at least once this season. We are also be looking forward to more visits from the local Air Cadet group and the possibility of providing a late summer soaring course for their members in August.

The new SAC and *Freedoms Wings* youth bursaries program has also provoked a lot of interest in the club and my hope is that VSA will be one of the first clubs to become a part of this program in 2009.

Lastly and most importantly I'd like to say a huge personal "thank you" to all of our members who made everything mentioned above possible. Their large individual efforts and an abundance of club spirit are undoubtedly our most important assets. We eagerly look forward to 2009 and hope it will be as good to us as the last!

Dave Hocking

XU Aviation Ltd.

All repair and inspection of composite structures.

We have a large hangar with special-built repair bay and state of the art spray booth. See us at <www.xu-aviation.com>

Chris Eaves, ph (519) 452-7999, fax 452-0075



MZ SUPPLIES

5671 Ferdinand St, Osgoode ON, K0A 2W0 (613) 826-6606
wernebmz@magma.ca www.mzsupplies.com

Ulli Werneburg, exclusive Canadian dealer for:

BORGELT Varios & Flight Computers

CAMBRIDGE Aero Instruments

- CAI 302 computer, vario and GPS FR
- CAI 302A basic GPS navigation and FR
- CAI 303 Nav display for 302/302A

SCHLEICHER Sailplanes

ASK-21(Mi), ASW-27B, ASW-28(-18T), ASG-29(T),
 ASH-30(Mi) – new 26.5m 2-place,
 ASH-31E – new 18 or 21m self-launcher

Varicalc

Canadian dealer for Sportine Aviacija



LAK 19 Standard Class/18

LAK 17a flapped 15m/18m

Both available with turbo

LAK 20 Open 26m 2-seater

Contact: Nick Bonnière

nick.bonniere@withonestone.com

www.vif.com/users/varicalc

Come and soar with the bald eagles!

PEMBERTON SOARING CENTRE



Operating daily April to October in Pemberton, BC

- excellent mountain scenery with thermals to 12,500 ft
- camp at the airport, B&B, or stay in Whistler
- area offers a wide variety of summer activities

Glider rentals: Super Blanik

Instruction: glider pilot courses or book a number of lessons,
 X-C training/off-field landing practice

phone: (604) 894-5727, 1-800-831-2611

e-mail: info@pembertonsoaring.com

web: www.pembertonsoaring.com



Great club and cross-country ship

Type approved in Canada

Outlasts fibreglass

Great value

nothing beats a Blanik!
 Tel (509) 884-8305 • www.nwi.net/~blanikam/ba/home.htm
 Box 1124, Wenatchee, WA, USA 98807-1124

L23

Super Blanik

L33 Solo

Easy to fly



For all-metal quality, nothing beats a Blanik!
 contact BLANIK AMERICA for a competitive quote

Type approved
 Superb cockpit visibility
 Proven all weather durability
 Over 50 L23s flying in North America!



Priorities

from page 2

up to 1 June after which a club would be able to obtain a second bursary for all those applying (pending availability) up to 1 August, at which time a third round would take place subject to any bursaries remaining.

If a club submits more than one request, please rank the youth in order of priority for the first and second rounds. For a club to receive a bursary(ies) the individual(s) who would benefit will have to be on record at SAC as being a paid-up member of the receiving club and SAC. The club will receive the SAC funding earmarked for the individual. The SAC Board has designated me as the SAC contact person (quarterback) for this program: phone/fax 1-866-745-1440 toll free or <dacollard@telus.net>. The remainder of the BoD will be contacted if any adjudication is needed.

Each club in receipt of the SAC Youth Soaring Bursaries is also requested to submit a report to David Collard by 1 November 2009, outlining the results obtained together with the number of flights and what stage of flying the beneficiary reached, and giving a breakdown on how the money was utilized.

Comments and suggestions are also welcomed in order for us to build on the program. This info will be helpful to other clubs, so that we don't have to constantly reinvent the wheel. The funding received from SAC but not used during one soaring season should be carried over to the next year as part of SAC support and should not be put in the general funds of the club. This carry-over will not reduce the support received from SAC in the following season. We would only request club cooperation to return the unused SAC funding if they decide to quit the program, the end result being to help fellow SAC clubs who are still in the program.

The SAC Youth Soaring Bursary program is being implemented to hopefully expand and not detract from the excellent efforts of *Youth Flight Canada*. The Board wants the clubs to fit this program to the various ways in which they operate with limited direction from the top down. We recognize that there are many ways of doing things and each club through its efforts can make this work best. Ideally a club will eventually be able to sponsor two or more new applicants so that in the case of some youth they can mutually benefit from some rivalry and friendship. (Not to have to just put up with some of us "grey or no hairs" and all our flying stories.)

The underlying principal(s) in the designing of the SAC Youth Soaring Bursary are to help as many clubs as possible, and to offer the opportunity for the clubs involved to engage the citizens in the area(s) in which they currently draw their membership, to obtain goodwill by way of public recognition in the news media (free advertising by using articles). For example, Silver Star Soaring in Vernon, BC obtained broad news coverage on radio and in newspapers, and raised \$900 via "discovery flights" in the spring of 2008.

At the club's AGM in December the opportunity arose to suggest to the membership that the SSSA sponsor a Youth Soaring Bursary in recognition of someone who has generously supported our club for many years. This was unanimously and enthusiastically accepted. A second Youth Soaring Bursary could possibly be raised by someone or some business in the area that wants to buy in. *Youth Flight Canada* has agreed that a donation sent to them and earmarked for a particular club would be 100% redirected to the club to be used for the SAC program from the club's participation level. *Youth Flight Canada* would issue the tax receipt. This offer has great potential.

The SAC Youth Soaring Bursary does not set any rules for how the beneficiary helps

around the gliding field. In the spirit of cooperation, all members at the field are expected to willingly help others, as will be the case for the Youth Soaring Bursary members. At Silver Star, we see the beneficiary(ies) also helping to run the *Freedom Wings* program with a work-for-flying incentive as suggested in the *Youth Flight Canada* program. Perhaps the expectation of one day's work for one flight. Remember that at most clubs, instructors get nothing in return for all their work except a "Thank You". This is not a directive from SAC but only a suggestion, as each club can do as they please. From my contact with the club executive in the Pacific Zone there is every indication that four clubs will be involved in 2009 with the SAC bursary program. Hopefully other clubs will jump on the bandwagon and benefit. It's up to you.

In closing, I'm always reminded that there is usually nothing new but rather a revisiting of things that others have done before us. Membership growth and retention is usually the end result of energetic, creative good leadership and support at the club level. A friendly welcoming membership and having fun in our sport often goes a long way towards supporting growth.

Hope you all have a safe, fun, satisfying soaring season in 2009. ❖

SAC Directors & Officers

President/Prairie

John Toles
(306) 652-7909 (H)
j.toles@sasktel.net

Vice President/Eastern

Sylvain Bourque
cell (514) 592-0283
bourques@videotron.ca

Ontario

Eric Gillespie
(416) 703-6362
ekg@cunningham-gillespie.com

Alberta & Secretary

John Mulder
(403) 945-8072 (H)
johnmulder@shaw.ca

Pacific & Treasurer

David Collard
1-866-745-1440
dacollard@telus.net

Executive Director

Jim McCollum
(613) 692-2227 (H), 829-0536 (B)
sac@sac.ca

National Safety Program

John Toles — director

Committees

Air Cadets

National Office

Airspace

Scott McMaster
(519) 884-2303 & 620-0447 (H)
scott@mcmail.cis.mcmaster.ca
Roger Harris
rharris@petrillobujold.ca
Ian Grant (advisor)

FAI Awards

Walter Weir (905) 263-4374 (H)
waltweir@ca.inter.net

FAI Records

Roger Hildesheim (613) 838-4470
rogerh@ca.inter.net

Free Flight

Tony Burton, (403) 625-4563
t-burton@telus.net

Flight Training & Safety

Dan Cook, (250) 938-1300
cookdaniel@shaw.ca
Gabriel Duford
gabriel.duford@videotron.ca
Bryan Florence
bryan.florence@shaw.ca
Joe Gegenbauer gegb@shaw.ca
Richard Sawyer
cfzcw@sympatico.ca

Insurance

Keith Hay (403) 949-2509
insurance@sac.ca

Medical

Dr. Richard Lewanczuk
(780) 439-7272
rlewancz@gpu.srv.ualberta.ca

Sporting

Jörg Stieber
519-662-3218 (H), 662-4000 (B)
joerg@odg.com
Derek Mackie dmackie@huskey.ca
Walter Weir waltweir@ca.inter.net

Technical

Paul Fortier (613) 258-4297 (H)
paulfortier1@juno.com
Chris Eaves xu-aviation@sympatico.ca
Wolfgang Weichert
wolfgang.weichert@magma.ca

Trophies

Phil Stade (403) 813-6658 (H)
asc@stade.ca

Video Library

Ted Froelich (613) 824-6503 (H&F)
2552 Cleroux Crescent
Gloucester, ON K1W 1B5
fsacvideo@aol.ca

Web site maintenance

volunteer REALLY needed



SAC Clubs SAC Clubs

Eastern Zone

AIR CURRENCY ENHANCEMENT SOC.
Debert, NS
robfrancis@tru.eastlink.ca

AÉRO CLUB DES CANTONS DE L'EST
Valcourt, QC
Marc Arsenault
marcarsenault@sympatico.ca

AÉRO CLUB DES OUTARDES
St. Dominique A/P, QC
aeroclubdesoutardes.iquebec.com

AVV CHAMPLAIN
St. Dominique A/P, QC
www.avvc.qc.ca

CVV QUEBEC
St. Raymond A/P, QC
www.cvvq.net
club phone (418) 337-4905

MONTREAL SOARING COUNCIL
CLUB DE VOL À VOILE DE MONTRÉAL
Hawkesbury, ON
club phone (613) 632-5438
www.flymsc.org

Ontario Zone

BONNECHERE SOARING
5.5 km N of Chalk River, ON
Iver Theilmann (613) 687-6836

ERIN SOARING SOCIETY
7 km east of Arthur, ON
www.erinsoaring.com
info@erinsoaring.com

GATINEAU GLIDING CLUB
Pendleton, ON
www.gatineauglidingclub.ca

GREAT LAKES GLIDING
NW of Tottenham, ON
www.greatlakesgliding.com

GUELPH GLIDING & SOARING ASSN
W of Elmira, ON
www.geocities.com/ggsa_ca/

LONDON SOARING CLUB
between Kintore & Embro, ON
www.londonsoaringclub.ca

RIDEAU VALLEY SOARING
35 km S of Ottawa, ON
club phone (613) 489-2691
www.rideauvalleysoaring.com

SOSA GLIDING CLUB
NW of Rockton, ON
(519) 740-9328
www.sosaglidingclub.com

TORONTO SOARING CLUB
airfield: 24 km W of Shelburne, ON
www.torontosozaring.ca

YORK SOARING ASSOCIATION
7 km east of Arthur, ON
club phone (519) 848-3621
info (416) 250-6871
www.YorkSoaring.com

Prairie Zone

PRINCE ALBERT GLIDING & SOARING
Birch Hills A/P, SK
www.soar.sk.ca/pagsc/

REGINA GLIDING & SOARING CLUB
Strawberry Lakes, SK
www.soar.regina.sk.ca

SASKATOON SOARING CLUB
Cudworth, SK
www.ssc.soar.sk.ca

WINNIPEG GLIDING CLUB
Starbuck, MB
www.wgc.mb.ca

Alberta Zone

ALBERTA SOARING COUNCIL
asc@stade.ca
Clubs/Cowley info:
www.soaring.ab.ca

CENTRAL ALBERTA GLIDING CLUB
Innisfail A/P, AB
www.cagcsoaring.ca

CU NIM GLIDING CLUB
Black Diamond, AB
club phone (403) 938-2796
www.soaring.ab.ca/cunim

EDMONTON SOARING CLUB
N of Chipman, AB
www.edmontonsoaringclub.com

GRANDE PRAIRIE SOARING SOCIETY
Beaverlodge A/P, AB
www.soaring.ab.ca/gpss/

Pacific Zone

ALBERNI VALLEY SOARING ASSN
Port Alberni A/P, BC
http://avsa.ca

ASTRA
martin_dennis@precisiongutters.com

CANADIAN ROCKIES SOARING CLUB
Invermere A/P, BC
www.canadianrockiessoaring.com

PEMBERTON SOARING
Pemberton A/P, BC
www.pembertonsoaring.com

SILVER STAR SOARING ASSN
Vernon A/P, BC
www.silverstarsoaring.org/

VANCOUVER SOARING ASSOCIATION
Hope A/P, BC
club phone: (604) 869-7211
hope.gliding@yahoo.com