# free flight • vol libre



2/02 Apr/May

### Priorities

### Phil Stade, Alberta Zone director

IT WILL BE TWENTY-NINE YEARS THIS JULY SINCE MY FIRST GLIDER FLIGHT. Russ Flint of the Winnipeg Gliding Club instructed the first, and twenty-five flights later Len Pennie and Vern Keats sent me solo! I suspect there are few of us that can't remember the excitement of our first flights. A few minutes looking at my student log book brings it all back. My longest pre-solo flight was with Jeff Tinkler. I remember being amazed that his assistance stretched that 2-22 flight out to 29 minutes! And all those ten to twenty minute solos — strange, but at the time I had no feeling they were short flights. I was flying! A few years later while flying with the Vancouver club my wife commented that in spite of the short time I spent in the air it seemed to take about two weeks to get me back on the ground.

A nineteen year absence from flying came to an end in 1996 under the instruction of Walter Mueller, a man whose passion for flight and introducing others to it seemed to match my life long dream of *really* flying. The highlight of my flying occurred last summer when I met Walter in his Open Cirrus at 12,000 feet over Fort Macleod, Alberta during the Cowley Summer Camp and we spent an hour following each other through the afternoon sky. Looking for a mentor? Walter started instructing in his late teens and over 60 years later you would be hard pressed to find someone of any age that loves flying more.

When I moved to Alberta twenty-five years ago, one of the first places I looked up was the Cu Nim Gliding Club. Being responsible for a young family precluded getting involved but the visit started me thinking that retirement in Black Diamond would be a great goal. The anticipated move occurred in 1999 and now I can hear the towplanes from home. Can life get any better than that!

Aircraft ownership was a dream that I had never seriously pursued until an opportunity to purchase a Miller Tern presented itself in the fall of 1996. A homebuilt brings with it a lot of unanswered questions so I contacted Tony Sawatzky, the builder. That conversation led to the purchase of his HP-18 that was 95% complete, and in June 1998 I test flew it (see a photo at <a href="http://www.soaridaho.com/Schreder/HP-18/C-FGEV.html">http://www.soaridaho.com/Schreder/HP-18/C-FGEV.html</a>). I have a long list of upgrades planned and the first is to convert from a side stick to a centre stick. Hopefully C-FGEV will be back in the air in the summer of 2003.

I picked up the 1985 May/June copy of *free flight* recently and I noted a number of things. Concern was being expressed over the increasing average age of soaring pilots. The increasing cost of our sport seemed to be driving potential pilots away. Rules for this and that were changing. Aircraft were for sale. Safety was our primary concern. Pilots were looking for aircraft parts. Some could see the humour in things. Some couldn't. The cumulus in the cover photo look as beautiful as cu do today. Soaring hasn't changed much, has it.

As the new Alberta Zone director on the SAC board I am looking forward to bringing along my all-inclusive life motto of, "If we're not having fun, we're not doing it right!". Packed in with that will be my belief that "it" can be done, my delight in clouds and my dreams of flying great flights.

Wherever you are flying this year I wish you a safe and enjoyable season.

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A pretty line-up of Blaniks at Hope during the airline pilot conversion course last year. Story on page 7. photo: Marty Vanstone

### **DEPARTMENTS**

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### Free Flight in 2001

### **Tony Burton**, editor

2001 WAS A GOOD YEAR for free flight and I trust you have enjoyed getting it. Thanks to everyone who took the time to contribute stories or even a bit of filler material — the magazine depends on you for a lot of content. I particularly invite pilots to send me a detailed report for free flight if they have had an "interesting" incident or accident (I'll keep it anonymous if you wish) — it makes very useful safety reading.

There were three 24 page and three 28 page issues in 2001. There is a slow tendency to increasing size, partly due to more material arriving and partly to increased commercial advertising.

We had a prize winning colour cover photo from Steven Liard, and it's too bad that the printer had the colour balance off!

The web and e-mail has become pervasive. The primary reasons are instant access and significant cost savings in distribution of printed and graphical material. A secondary reason, but primary from my point of view as free flight editor, is the search function — the magazine becomes accessible and searchable by anyone over an extended period of time when stored electronically as .pdf files. However, there is no thought of eliminating the printed original. Nothing replaces (yet) the ease and practicality of reclining with a copy of free flight. Arguably, paper will always last longer than any hard drive — if the medieval monks had computers rather than parchment, there wouldn't be any Western history on library shelves!

Since last year, the work on a "searchable" index for free flight has progressed. Susan Snell built the keyword-searchable index which is now running on the SAC website. Eventually ALL issues of free flight, which go back 50 years, will be indexed — that's the goal anyway. To date, the index has been completed back to 1981. This index will be an immensely useful resource — these volumes contain a lot of valuable information which does not go out of date: soaring techniques, safety issues, training methods, etc. And of course, the history of the sport in Canada (people, contests, gliders, events) will be available with a few keystrokes.

I also filled in the existing gap of four issues of free flight for which no archive file existed. These were replicated and added to the back issues web page.

Please let us know what you are doing at your club that is of interest or value to others across the country (Bluenose and Central Alberta made fine contributions in 2001). I remind club executives to ensure that free flight is on their mailing list (if you don't have a newsletter, 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.

Thanks to Ursula again for her proofreading. The new printer in Ottawa is giving me a good turnaround on the magazine; the major delay in getting free flight to you occurs when Canada Post puts it into 3rd class storage occasionally.

I also prepare other material for SAC members — for example an OO "test" and most of the SAC forms, all of which are on the SAC documents web page. I enjoy the work of editor — the rest is up to you.



### SOARING ASSOCIATION of CANADA

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

free flight is the official journal of SAC.

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

Images may be sent as photo prints or as hiresolution 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.

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### L'ASSOCIATION CANADIENNE DE VOL À VOILE

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

vol libre est le journal officiel de l'ACVV.

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

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

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

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

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

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### Pitfalls to safety at clubs

### Ian Oldaker

FT&S committee chairman

### Safety audits proving valuable

Reviewing and commenting on safety audits was the largest part of the Flight Training & Safety committee's efforts in 2001. Twenty-two clubs submitted audits and these were reviewed and comments passed back to most of them. In many cases meetings were held between at least two members of the committee and members of each club. In some cases we met with several club "leaders" plus other members. In one case almost all the members were present in a very thorough review of their flying and safety activities.

At most meetings, actions were discussed for safety related improvements. Most clubs addressed safety issues vigorously, and were appreciative of the points that the audits raised; for example one club's members stated that they had taken two years to address what they identified as some major shortcomings, before considering their audit completed to their satisfaction. Another club felt that their submission was preliminary in that many items remained to be dealt with. However, most major issues were addressed and a very useful discussion was held with their leaders and many club members.

### Small clubs at great risk of member burnout

Some clubs are in the fortunate position to be well run and stable in both leadership and members. Other clubs are holding their own at the bottom of the valley or are in a state of decline. Then, unfortunately, most of the work tends to fall on those few diehards who want to keep the operation going. This inevitably leads to overloading these members and to burnout, situations that are looking for accidents to happen. Discussions with these clubs then focussed on what can be done to plan for succession in the major flying roles within the club. For example, some clubs were only just appointing their Chief Flying Instructor at the start of the season, others did not have a Safety Officer in place.

While the Flight Training & Safety committee has been producing training materials for safety officers for a few years now, and the CFI's position is of course central to all clubs that are training students, the appointment of persons to these vital positions appears to receive quite varying degrees of importance within clubs.

### Plan ahead for logical succession

It is recommended that all clubs have in place an ongoing plan to mentor younger members who may eventually take over as CFIs or Safety Officers. Larger clubs should consider appointing one or two assistant CFIs, as well as assistant SOs. A "Flying Committee" made up of these persons plus the Chief

Towpilot and his/her assistants can substantially reduce the load carried by a lone CFI or SO and, with the right cooperation between these individuals, will enhance their enjoyment of the sport.

### General safety in 2001

The past year was generally a very safe year, and all members are to be congratulated. However we are close to having a major problem with near misses or close approaches that could be disastrous. Two areas are of increasing concern, the Ottawa area and the Toronto/Hamilton area (there may be others) where commercial aircraft are often at the same heights as gliders using the same airspace. Last season one glider pilot (incident reported in *free flight*) came within about 200 feet of a jet. Both pilots reported this to TC who investigated. The glider pilot had his licence suspended; he reported the investigation was very fair.

Rapidly increasing traffic into Hamilton adds to near miss concerns. As we find airspace increasingly congested, glider pilots will have to become *very aware* of how to fly in this space and to share it with others responsibly. This highlights the need for good training in radio use, how to use our airspace and awareness of airspace use by others, traffic corridors and likely areas of high-density traffic with the occasional "heavy" going by. As a matter of urgency, all clubs with these concerns should develop suitable training programs to head off any problems.

Clubs that have not submitted safety audits should do so as soon as possible. It is emphasized again that the audits are primarily for the club's benefit; submitting them to SAC is our chance to suggest areas for improvements in the club's as well as SAC's operations. It also shows to insurance companies that we are being proactive regarding flying safety and that the club has shown due diligence in addressing safety related issues and concerns.

We hope that assistance from the FT&S committee members will lead to enhanced safety in club operations. Not to be forgotten is the benefit that we derive from lower insurance rates that we hope will come from this program.

### SAC instructor courses

Instructor courses in 2001 used the recently revised and updated instructor's guide that was issued during the year in English. This manual now teaches training theory and practice to parallel the content of "SOAR and Learn to Fly Gliders", the student manual.

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### Slaving away at the World competition

Art Grant, Winnipeg Gliding Club

HAT DO YOU DO if you are a glider pilot, are contemplating retirement, and have no life? If you're like me, you look for something new and different!

A search of the SAC website late last spring lead me to the 2001 World Gliding Championship website in South Africa! Why not? E-mail helped me reach the Administration Director, Carol Clifford, who assured me if I came that someone would make use of me (because I'm not a guy who can stand around and watch). Dale Kramer, our only Canadian entry, had his crew looked after, so I was on my own.

Airfare was arranged, accommodation secured at the International School in Mafikeng, and some kind soul in Johannesburg agreed to pick me up at the airport and see that I arrived at the contest site intact. Hit the road!

Winnipeg to Toronto, Toronto to Paris on Air Canada. Air France to Johannesburg the next evening and there was my ride, waiting in the crowd with a WGC sign and my name on it! Much relief, because by now I had learned some things about Johannesburg, like it has no reliable public transportation, and tourists are targets, and you cannot get to Mafikeng on your own! Jenny and Glen Patrick were serving as way-station hosts for people arriving at Johannesburg and heading to the contest. Glen was in Duban, retrieving a glider from a container for Australian entrant Graham Parker. I was wined and dined by the Patricks for two days and sent on my way to Mafikeng with Steve, who was the Safety Officer for the contest.

On arrival at the Mafikeng International Airport we were directed to the school to select rooms and unpack. Back at the airport, I introduced myself to Carol Clifford, who really didn't have a job for me but assured me that if I looked, I would find something to do. Little did she know about my leeching skills! (In retrospect, I think both Carol and Dale thought I was looking to be paid for my work!)

Steve introduced me to others staying at the school and I attached myself to them — Wilfried and Inge Müller from Germany, Werner and Anne Kienhofer, Dick Golang and Hans Jordan all from South Africa. It turned out they were the scrutineering squad for the contest and didn't mind my joining them. This was to be one of the best decisions I've ever made!

For the next three days, these people, along with team leader Herman van Teylingen and his companion Aletta White, weighed, measured, and photographed each of the eighty-odd gliders entered in the competition. We ended up calling ourselves the A-Team and, for the re-

mainder of the contest, were much in evidence having more fun than any other group.

A pattern developed as the contest got underway. Up at 0530, to the airport for breakfast at the cafeteria, set up the three weighing stations by 0745 and begin weighing gliders by 0800 for gridding by 1100. Pack up, down to the runway for the launch, a quick lunch, marshalling runway crossings during the flying and watch the finishes. Beers and BS in the International Village, supper in the cafe, back to the school by 2130 or so, and party in the kitchen until bedtime. The contents of Steve's car trunk turned up at supper — a bottle of often great wine from his cellar at home and, as often as not, another one at the kitchen party!

A highlight for me occurred after the third day of scrutineering. Denise, in charge of finances, called me into her office one morning after breakfast. She handed me the contest uniform (shirts and a hat), saying the administration had decided I should be an official part of the organization. Was I ever thrilled! Later she ran me down on the job to hand me a ticket for food during my stay! This is getting better and better!

By this time I had met "Team Canada", Dale and Carmen, and had volunteered to help with any retrieves. Beers and BS had to wait until Dale was safely home. Carmen arranged tickets for me to the opening and closing dinners. Our first retrieve together was on the first day of the contest but I'll save that story for another issue, because it needs a lot of space!

Some random memories:

- Watching a great airshow from the best seat in the house — marshalling on the runway!
- The look on Carmen's face when I managed to get first, second and reverse working on the "buckie" we were using on a retrieve.
- Giraffe so close we could have touched them on our Christmas Day visit to Pilanesburg Game Park. And the sound of the hailstones on the car roof on the trip home that evening!
- The excitement of seeing Dale's name at the top of the finishers for Day 3, even though he knew it was too good to be true.
- The laughs each morning during weighing with the crews and pilots, especially with those who always came too heavy and had to dump some water!
- Gerhard Waibel, ASW designer, playing Santa Claus at one of our kitchen parties.
- Sleeping away an afternoon in the doorway of the Canadian team office, only to have a puff adder (a deadly snake) discovered sleeping right next to where my feet were five minutes ago!

# Converting the heathen

Marty Vanstone, Vancouver Soaring Association

S OF 17 AUGUST 2001, the world is richer by the graduation of six more glider pilots. Through the preceding week the VSA's Airline Pilot Conversion Course took on six new "students". Their prior qualifications were limited to the Boeing 767, 747 and the A320, but through a five day course, these pilots were upgraded to licensed glider pilots.

Day 1 Day 1 began with registration, orientation and about an hour of basic glider airmanship. There were three gliders, three instructors and two towpilots. Teams were drawn up and as one of the instructors, I was quick to put up my hand when Dave Baker asked who wanted to take the A Team. I was then rewarded with assignment of our first and last enrollees, Bob Hyndman and Ed Wight. The B Team was made up of instructor Joe Gegenbauer with Richard Cousineau and Joe Holmes. Dave Baker took the C Team of Jack Humphries and Richard Dunn. Our towpilots were Bill Green and Bob Ayotte. All are current or retired airline pilots. To get the operation started on the right foot, the towpilots put on a Snowbirdlike performance, emerging from the parking area perfectly line-abreast, then executing a smart left turn to taxi past the clubhouse line-astern, followed by a prudent but interesting takeoff for their customary test flight.

By 1100 we were out on the field and ready for introduction to the gliders. We were to use Blaniks: two L-13s and one L-23. For the first two days the glider DI's would be done by the towpilots and our young (less than 16) time-keeper, go-cart driver and general gofer, Richard Snow. Richard is fully qualified on many of the club's gliders but he has to wait for the end of August to reach his 16th birthday and his licence. The weather is warm but

moderately windy with some persistent smoke or haze hanging around.

Our syllabus called for just five flights on this first day. The first four to 2000 feet emphasized takeoff, flying behind the towplane, boxing-the-wake, release procedures, airspeed control through pitch attitude, circuit planning, approach and landing. As expected, the other flying skills such as the effect of controls, medium and steep turns, sideslips, etc. were already there and clearly evident. The last flight of the day is just a 1000 foot tow for a quick circuit to demonstrate a steep approach. For pilots used to a 3° approach angle, even the normal glider approach seems very steep. The purpose of this flight was to remove any concerns about being "too high". After a lively debriefing session, the group repaired to Skinny's Grill for a dinner that took far too long to come, but we were all in good company and good spirits.

Day 2 Another warm but windy day. Harold Kirschner and his son Nick join the crew to assist with towing and ground handling. The first flight is a 4000 foot tow for spins, incipient spins, and stalls, high and low speed flight. This flight followed the pattern of an annual flight test and as the A Team Instructor, I was very pleased to see my guys perform the required maneuvers well within licensing standards after only five prior flights.

The A Team

The next flight was to be a rope break (engine failure) in preparation for solo. In a glider, V1 occurs at 200 feet agl — below that height it is necessary to land straight ahead. Between 200 and 600 feet, a turn and downwind landing is called for. Above 600 feet an abbreviated circuit is anticipated. Each student was given

one of these scenarios to fly with everyone else watching and learning. A group lunch followed in which all these exercises were reviewed and critiqued.

Then it was time for the solos. As our first enrollee, Bob Hyndman was given the right of first, first solo — a 2000 foot flight with instructions to get a feel for the glider when solo and get it and himself back safely (when you remove the instructor from a glider, the total gross weight is reduced by up to 20%).

All the first solos went well and were quickly followed by three more solo flights to 2000 feet with the briefing emphasis on circuit planning and approach. Although conditions were not particularly good for  $\Rightarrow$  p17



Marty Vancto

Bitten by the Bug

musings of a student

Tony Booth, ESC post-solo pilot



H – THE JOYS OF GLIDING! I've enlightened my friends. I've indoctrinated my neighbours. I have even accosted my unwitting mailman and ranted at length about the glory of gliding as I took my copy of free flight from his hands!

It's a rite of passage: after flying solo in an engineless aircraft, one inevitably succumbs to the need to write about it. This lets me share my experiences (the ups, as well as the occasional down). It allows me to say "thank you" to those who've helped me and, most importantly (and self-indulgently), to go on and on about the joys of gliding. So here I begin my "write of passage".

My journey began in May 2001, when the Edmonton Soaring Club's website < www.edmc.net/soar/> caught my attention. It advertised their annual two-week student training program. After retiring from a busy international career that provided no opportunities to fulfill my dream of flying, I'd finally found just what I needed: a club that provides concentrated training.

Days later, I found myself amid extraordinary glider pilots at the airfield near Chipman, 40 minutes east of Edmonton. The depth of experience in the club is awesome! I listened in on a discussion of the development of the Minimoa glider by one who actually flew in a 'moazagotl' cloud during the early years of the development of the gliding sport. It was (as the advert says) "priceless". I was about to discover the truth and the beauty of gliding.

The Edmonton Soaring Club has many dedicated members who put enormous effort and time into making the annual consolidated training weeks happen. It has members who are early and late retirees as well as youngsters one quarter my age. It was great to be training with the young people and to watch their enthusiasm and enviably quick reflexes!

On the ninth of July we, the students, commenced with the routines of the morning. We set up the flight desk at the runway's end, and we cleaned the flying surfaces of the two 2-33s. Both gliders were in excellent condition, having undergone thorough repair and renovation over the previous winter. Likewise, the two Pawnee 235 towplanes were in prime condition; clearly, they were well cared for.

All the students had some gliding experience and recent lessons, so we started flying right away. As the rotation of students, instructors and 2-33 ground handling got into a routine, the pace quickened. Three or four 20-minute flights each day were enough for me to analyze. My foremost concern was whether I've got what it takes to fly gliders solo.

An analytical type, I crave constant feedback from my instructors. As my learning progressed the instructors built on my new skills and increasing confidence. Even though I'd been 'calling my actions' before taking them, the complete silence on a pre-solo checkflight was initially unnerving but a good indication of how flying solo would be.

During the first two days, daytime temperatures exceeded 30C. Crosswinds developed and gave a great opportunity for learning to handle them. However, the abnormal weather and increasing winds did not bode well. Day 3 brought rain. After a morning of extra classroom training, we consulted the weather forecast and the course was postponed — a good decision, as a windgust or small twister destroyed a trailer on site and the runways became flooded the next day. (Until then, Edmonton, like much of Alberta, had been experiencing a drought!)

Before disbanding, we set a provisional date in August for resuming the lessons — a disappointment for several with no more vacation time. But it reaffirmed the dedication of the organizers who had to rearrange their lives to get the training going again.

The date set was 12 August, giving me a chance to get some more weekend lessons beforehand. My confidence grew with each flight. I could recover from stalls and spins! (Trying to get a 2-33 to spin with two-up was great fun and my left knee still remembers the "stickrash"!) 

⇒ p17

# A soaring flight to remember

Wolfgang Thiele, Gatineau

WO DAYS before my return flight from Marseille, a 13 hour flight in a Caproni Calif under extreme conditions tested the pilot-in-command Klaus Ohlmann and this 74 year old "medically unfit" copilot.

September 9: Mistral wind conditions indicated. Out of bed at 0500 to make "unrushed" preparations. Six gliders are prepared for takeoff at daybreak. Wind strength may be too high, but all launch successfully. Within an hour and a half, three gliders are back on the ground for safety concerns. We, tumbling up and down between 3500 and 1500m in the rotor rodeo, are in survival mode for the first five hours and achieve a distance of 88 kilometres from Serres to Briançon! Then somewhat more orderly conditions allow us to read the wave systems better and we make real progress. The wind strength at 3000m varies between 80 and 130 km/h.

We arrive at the Monte Rosa massif via Mt. Cenin and Grand Paradiso at 1300, fighting the excessively turbulent rotor systems there for nearly an hour, stumbling up and down 300 metres within seconds, with unbelievable violence and noise. The usually very rewarding lift source will not yield anything today. We have to fall back downwind to lower mountain ridges to make height in less brutal rotor systems.

Still heading northeast we cannot go for Bolzano, our planned turnpoint. Looking south, the backlit scene is spectacular with Domodossola and Lago Maggiore still in clear air and Milano barely discernable in the polluted air of the Po plain. Conditions and time forces us to turn around at the St. Gotthard Pass. We are flying back relatively low and have to be extra cautious. Back at the Monte Rosa, height gaining attempts are futile again. It is frustrating since substantial height loss crossing the Aosta Valley is to be expected. We are basically too low and are again forced to backtrack downwind to lower ridges. The prospect of a landing at Torino airport looms ever larger.

Klaus' experience and stoic patience finally pay off; we are gaining enough height to keep fighting to get back into higher terrain and better lift. Since we were forced almost out of the mountains, we pass Grand Paradiso and Mt. Cenin substantially south and much lower than on our outbound leg. Once back in the Ecrins and at full height above the 3000m and 4000m ridges we were assured of our home coming.

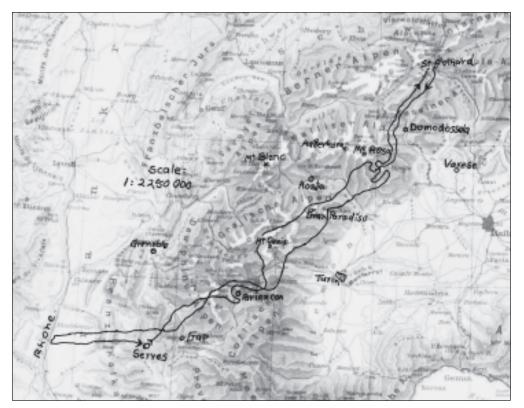
Not so fast! Suddenly we experience a gust so severe that the left front canopy closure on my side let go. The deeply-etched-into-my-mind picture shows the frame corner up in the air six inches by the time we both had lunged for it to push it down. Fortunately the closure mechanism was not damaged and could be used. At the Monte Rosa battles I had fears the glider might fail catastrophically. Here we really had a major disaster in the making and were lucky to avert it in the nick of time. By the time we reached our home field at Serres flying conditions had become so easy and pleasant, that we flew on west to the Rhône and back to Serres landing 13

hours and 10 minutes after takeoff.

The length of the flight and the physical punishment we took did not appear to have exhausted us as we stepped out of the glider "fresh and euphoric", having it made back unharmed. Closely inspecting the Calif the next day, I discovered a number of places where the profile filler had popped away. The canopy revealed loose shoulder bolts in critical functions. The unsecured, nonspring loaded closure mechanism is worn enough to have lost friction, to reliably stay in place. Safety lesson: The DI is more then just control connection assurance.

My return flight from Marseille on 11 September of course went off course to St. John's, Newfoundland and was grounded there for three days. It was anticlimactic compared to the glider flight two days earlier.

For an intro, read a similar account in free flight 1/99 by Wolfgang (erroneously credited to Frank Pennauer).



# Wave flights in Nova Scotia

Larry Bogan, Bluenose Soaring

OVEMBER 17, 2001, two Bluenose Soaring pilots flew wave to 12,000 feet over the Annapolis Valley in Nova Scotia.

Many places in North America with dramatic topographic relief have conditions for wave flying — western Nova Scotia is not considered one of them. Waterville (Kings County) airport is in the middle of a flat agricultural valley (Annapolis Valley) at 118 feet asl. The Valley is oriented southwest to northeast. Four kilometres to the south of the airport is a granite upland that rises to about 7–800 feet and eight kilometres to the north is a basalt ridge (North Mountain) that reaches 6-700 feet in height. The North Mountain is about six kilometres wide sloping gently up from the Bay of Fundy on the north and dropping abruptly to the valley floor. The cross section diagram of the Valley (figure 3) shows this clearly. The southern uplands rise to their maximum height in five kilometres, then slowly descend to the Atlantic 60 kilometres to the south. On occasion, wave-like cloud structures have been observed here when there was a brisk north or northwest wind. The likelihood of getting into this from a winch launch appeared negligible. In any event common wisdom suggested that the wave was probably only a few thousand feet thick.

**Figure 1 – Atmospheric Sounding Graph** Skew-T/Log-P plot showing the air temperature, dew point, and winds in the upper atmosphere on 17 November 2001 (11 UT) at Yarmouth (the only site providing upper air data in Nova Scotia). Only the lower section of the plot is shown to emphasize the part of the atmosphere of most interest.

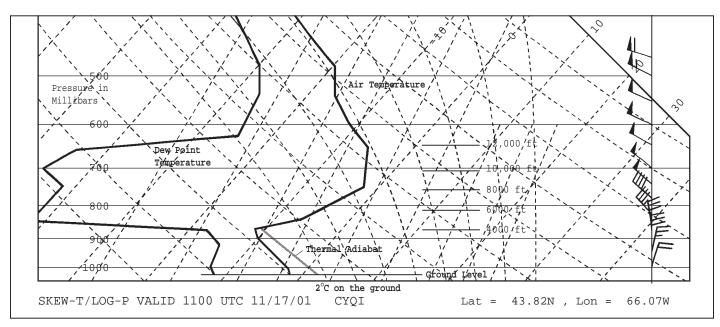
In the past there had been two other wave flights by Bluenose pilots in Nova Scotia. The most recent one was by Charles Yeates in 1997 out of Bluenose Soaring at Stanley. A westerly 45 knot wind had wave in it after flowing over the Blomidon Peninsula 35 kilometres west of the airport. Cloudbase was at 3500 but the clouds were oriented perpendicular to the wind. He worked his way up into the wave and was able to climb first to 7000 feet and then later to 8000 feet in an upwind wave segment. Evidence of the origin of the wave came when Charles found that the width of the wave matched the width of the Blomidon peninsula.

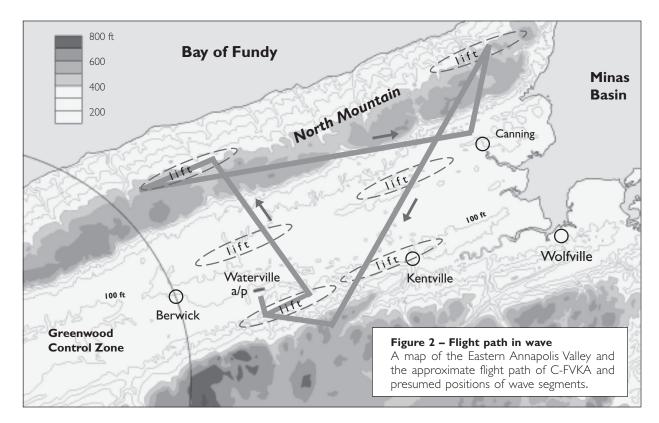
The first known wave flight in Nova Scotia was made by Tom Foote during a cross-country soaring flight in 1994. He was able to climb to 12,500 feet in a wave of unknown origins. Both of these wave flights were accessed by only one sailplane at the time, were considered unique and not expected to be repeated.

### Nova Scotia's 2001 wave

The day started with a high overcast then gradually cleared to blue skies. The surface wind was 10 knots from the northwest and the ground temperature was 2C. The 8 am Skew-T/Log-P plot from Yarmouth, NS (below in figure 1) indicated a lapse rate that would provide thermals to 4500 feet but showed an inversion above that height. It also indicated winds aloft increasing from 15 knots at 3000 feet to 50 knots at 9000 feet but this was not noticed at the time.

This year Bluenose had been flying club gliders out of



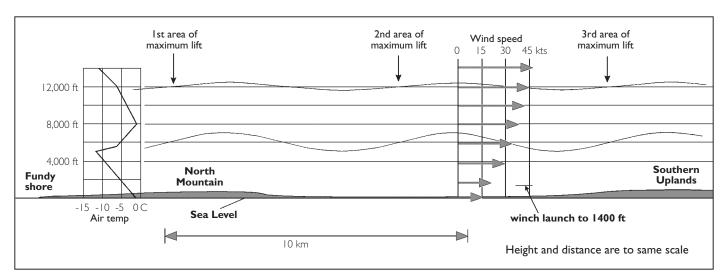


Waterville airport since the beginning of October and each day had to rig and de-rig the gliders. Because of the cold raw morning with brisk winds the members present were reluctant to rig the club two seater (K7). Dick Vine was going to fly C-GUIL (his Open Cirrus) partly to check a new radio headset, so I assembled C-FVKA (a Ka6E) for at least one season-end flight. Normally, I install my GPS and flight recorder and make a record of every flight but this day it seemed unnecessary for the anticipated short flight. Both Dick and I were dressed for near zero temperatures we were experiencing and expected near the ground. This whole day was a lesson in not being prepared for good soaring.

At 1 pm, I took the first winch launch to 1400 feet which was enough height for me to find a thermal west of the

airfield. Its strength was reassuringly strong if uneven while its size was small, characteristic of most at this time of the year. I did my tight turns and eventually centred it enough to climb slowly to about 3000 as I drifted southeast of the airfield. I eventually lost this lift but UIL was now aloft and was circling in a thermal closer to the field. I flew overtop and joined.

As I climbed to 4000 feet, the thermal became moderately turbulent with strong lift on one half the turn. At this point I noticed a wispy cloud forming below me and slightly downwind. I flew back over the cloud and found no lift and was soon in sink. So I flew back upwind and re-encountered the turbulence and turned in the lift before flying upwind to suddenly enter smooth lift.



**Figure 3 – Valley cross section** This diagram puts the Annapolis Valley wave, horizontal distances and heights on the same scale. The wave amplitude was calculated from the wavelength, wind speeds, and lift. Wind speeds and temperatures are from the electronic thermometer and altimeter in the sailplane which agree with the Skew-T plot opposite.

I couldn't believe it so I went downwind to find the turbulence then upwind to fly back into smooth lift with rates of climb of more than 500 ft/min. I was elated and radioed Dick to tell him that there was definitely wave lift present. He had left the thermal earlier and headed northwest.

I tacked back and forth perpendicular to the wind and climbed to 5000 then 6000 feet. Downwind and lower, more wispy clouds were forming and in a short while I found myself drifting past them into sink. This was definitely wave. Again I flew upwind to find the sweet spot of the wave lift and stayed there until I reached 9000 feet. By this time Dick had found the wave over Route 101 upwind of the airport and my present position. Most of the nearby rotor clouds had dissipated but I noted that there were persistent clouds to the north over the North Mountain. It was time to explore.

### **Exploring the wave**

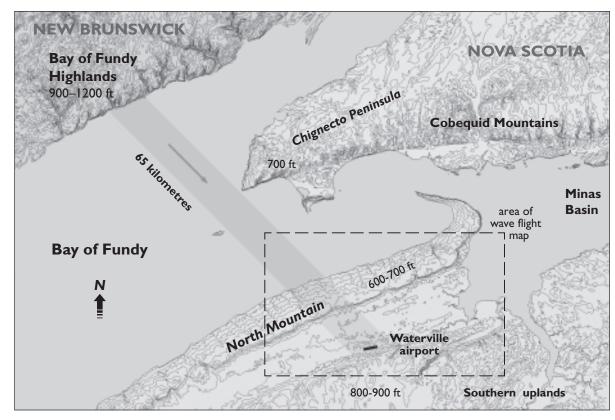
The clouds looked like they were wave-associated since they stretched along the mountain perpendicular to the wind direction. I had good height and the wave was still strong at my position downwind of the airport, so I increased my speed and penetrated upwind through the sink and headwind. As is usually the case, it took longer than expected to reach the next upwind wave lift but I did not reach it until I was well over the North Mountain. I had assumed that this ridge was the source of the wave, and had expected the lift to be just downwind of its downwind side. I kept flying upwind and was rewarded with 5–600 fpm lift about three kilometres from the Fundy coast but still behind and above the clouds. I had lost about 2500 feet in the push forward and had to regain my height.

Dick had climbed guickly a wave segment located in the centre of the Valley and had flown upwind to meet me. I resumed my practice of tacking perpendicular to the wind to gain height but found that I drifted back with an airspeed of 40 knots (a Ka6E's minimum sink speed). We judged that the wind speed was at least 45 knots at 10,000 feet. While there was still weak lift at 11,900 I had drifted into zero lift and did not have the patience to find the sweet spot again — besides, I wanted to explore the wave eastward. Dick did continue to climb to the top of the airspace at 12,500 feet and still had 2 knots lift. (We were in the Greenwood Class E control zone with class B airspace above us). While holding in the wave, we had both moved west as far as Swindles Knob, a landmark at the edge of the Greenwood Class D control zone.

Out over the Bay of Fundy, upwind of the clouds over the coast were a couple of wispy clouds which had the appearance of rotor cloud. Was there wave over the water? I now wish I had had the time and persistence to fly out there and sample the air. It leaves the question as to what was the real source of these waves in which we were flying.

### A view from high above the "Valley"

At 12,000 feet the horizon is 200 kilometres distant and the view of Nova Scotia is fantastic. Of course I had no camera in the glider. North Mountain appeared as a low broadened ridge stretching off to the west and ending near St. Mary's Bay 90 kilometres away. The waters there and in the Bay of Fundy were glistening in the late afternoon sunlight. Halifax Harbour and St. Margaret's Bay were plainly visible to the southwest. One could even see over the Tantramar marshes near Amherst past the



**Figure 4 – Relative positions of Maritime ridges** The upper Bay of Funday region between New Brunswick and Nova Scotia, showing the positions of the wave flight relative to ridges of the area.

Northumberland Strait to Prince Edward Island (pretty well on the horizon). I could easily see Stanley Airport 60 kilometres away nestled in the woods to the south of the Minas Basin. It would have been easy to head downwind to land there.

The temperature at 12,000 feet was -6C but on the climb up we had encountered -12C air at 4000 feet near the bottom of the inversion (measured with an external thermometer in C-FVKA). The low temperatures were gradually getting to us despite the bright sun through the canopy but we continued to explore. If the wave was associated with the North Mountain there should be lift all along the mountain. I headed east trying to stay over the mountain but drifted out into the Valley and over the town of Canning. There was no strong sink and I lost only 1500 feet in flying 30 kilometres. From there I flew upwind to find lift in the wave again over the North Mountain.

At these heights, Cape Split and the town of Parrsboro across the Minas Basin to the north seemed very close and enticing to visit. But, we had been aloft two hours, the sun was getting low (sunset was 4:45 pm) and it was time to head down.

I headed west in the direction of the airport but further downwind in order to come at it from the south. On the way, I encountered two lift areas and three sink areas in the wave. The third sink area was over southern uplands. The lift areas seemed quite narrow but that is probably because of my higher ground speed going downwind. Later, the three lift regions were sketched on a map and determined to have 7.3 kilometres spacing.

On the flight back towards the airport from Canning, I met a group of medium sized birds (gulls?) at about 8000 feet soaring in the opposite direction in a wave lift area. Why would any bird be up there going east; perhaps they enjoy soaring also? That day's flight was one of the most exciting of the soaring year for me.

I had no idea that the atmospheric wave here would be so high and widespread. This was not my first wave flight and I had been up to 17,600 feet in wave at Sugarbush, VT only a month earlier. My excitement was due to the fact that this existed in my own backyard and the delight of thermalling to the bottom of the wave and transitioning relatively gently into wave lift.

Now that two of us have experience wave here, we want to be able to fly in it again. This requires that we be able to recognize the conditions needed to produce the high wave. Tom Bradbury, in his book *Meteorology and Flight*, identifies five conditions for formation of multiple wave downwind of a ridge. These conditions are:

- a wind of at least 15 knots at 3000 feet.
- the wind direction does not change by more than 25 degrees with height.
- there should be an inversion or a stable layer of air not far above the ridge tops. When the stable layer is deep, the wave is widespread and a regular pattern persists far downwind.
- wind speed increases with altitude by at least 1.5 knots/ thousand feet.
- there is a jet stream with winds of 100 knots or more at height of 30,000 feet within 400 miles.

Did the meteorological situation on 17 November have these conditions? The diagram showing the cross section of the Annapolis Valley and geometry of the atmospheric wave summarizes the wave situation as determined by data from the flight and the Skew-T plot from the balloon sampling of the atmosphere at Yarmouth.

On 17 November, we had:

- · the winds at 3000 feet were about 25 knots.
- winds were northwest at surface to 12,000 feet.
- there was a strong inversion from 4500 to 12,000 feet.
   I saw this in my temperature monitoring and the Skew-T plot shows it.
- winds at 2000 feet were 20 knots while by 8000 feet they were 50 knots (from Skew-T plot) or 5 kts/1000 ft.
   At the surface the windsock was 10 knots while at 12,000 winds were 45 knots or 3 kts/1000 ft.
- the jet stream was over the southwestern part of Nova Scotia and a high pressure system was moving in from the southwest.

It appears that the conditions were ideal for wave conditions. One important question has not been answered by this flight — by what ridge were they generated? We saw what may have been rotor upwind of the North Mountain and over the Bay of Fundy. My present thinking is that the wave was generated from the hills in New Brunswick on the shores of the Bay of Fundy.

The best topographic candidates are the Fundy Uplands just west of Fundy National Park. This wide upland at the shore of the Bay of Fundy drop 7–800 feet to the water's edge. The cliffs of the uplands are 65 kilometres upwind of the Kings County airport — this was almost exactly nine wavelengths of the wave that day. The uplands are fairly long and should create a wave 50–60 kilometres wide.

The other candidate is the Chignecto Peninsula of Nova Scotia. This point of land is 700 feet high and protrudes into the Bay of Fundy. The downwind side (NW wind) drops steeply into the Advocate Bay. This structure is 37.5 kilometres northwest of the airport which is equivalent to five wavelengths of the atmospheric wave. This structure is only five kilometres long and would not produce a very wide wave.

We now believe that more of the highlands in the Maritimes can generate wave. Just recently (on 19 February 2002) a series of wave clouds were observed downwind of the Cobequid Mountains (north of the Minas Basin). A large classic east-west lenticular north of Stanley Airport marked the first maximum while four other elongated clouds stretching south to Halifax marked the other maxima of the waves. A look at the upper air sounding for the day showed increasing north winds from 15 knots at the surface to 50 knots at 10,000 feet and an inversion from 950 mb to 700 mb (2000 to 10,000 feet). A low had passed to the south and clear high had just moved into the area with brisk north winds and the jet stream was just to the south of the province.

If we keep an eye out for the prerequisite conditions, with practice we hope to be able to take advantage of more wave flying in the Maritimes and we will be prepared next time.

# ... I, even I, was fallible ...

HE BEST WAY TO LEARN is to do it yourself. In gliding, that can hurt. Another way is to listen to your instructor, but that only involves short term memory. The magic words, "Now you are solo", trigger total erasure of all those childhood myths passed on by granny from the back seat, and pave the way to a whole new grown-up world where you can learn from your own mistakes. Which is where we began, for as in life, growing up can hurt. Of course students can't make mistakes, all they can do is test the instructor.

What about once you are solo? You should learn from checkflights, but usually the instructor is so pleased to fly with someone safe that he doesn't want to do anything to prove you are not. The early solo pilot, who feels every flight is an exercise in nervous trauma, cannot comprehend the relief of an instructor when offered the chance to fly a passenger, and for a few minutes have his destiny in his own hands.

Imagine how that instructor feels when allowed to lie back and enjoy a flight with someone competent in the front seat, who pays for the flight and acts as chauffeur! No instructor will disturb the flight with reckless proposals like "show me a steep turn".

Rocking the boat is one thing, deliberately rattling a bag of rivets held together with tin foil is quite another. No—learning is something students do, not solo pilots. Of course you can read a book about gliding, but that will be either too basic, too technical or all about competition. How do you learn to fly safely?

The best way is to learn from the mistakes of other people, but most people are too shy to admit they ever made a mistake. I am not shy. I will be pleased to pass on the benefits of my experiences with heavier than air motor-

less flight. Let me tell you about one of my mistakes. I would say my only mistake, but I am an honest man, so I will tell you about the other one some other time.

Once in days of yore I landed wheel up.

How could this be, since I always do my checks? Well, every confession includes a cast iron alibi, so here is mine. The club had experienced a succession of single seat pilots landing wheels up, so at the next instructors meeting I pointed out we never raised the wheel in the Blanik when doing training flights.

"No need", the experts chorused, "the Blanik wheel causes no drag."

"But if you don't raise it, how do you KNOW you would have lowered it?"

"Because we always do our checks", came the predictable chorus.

One good feature of the Blanik is that the wheel doesn't fully retract, so a wheels-up landing does no damage, so the club maintenance officer supported my proposal. He was willing to try anything to prevent more wheels up landings. His fingers were raw from rubbing the bellies of Astirs and Jantars. Like me, the other instructors love flying, and don't like rubbing bellies (fibreglass ones, anyway), so rather than offend him we all agreed we would raise the Blanik wheel on every training flight from then on, just to prove we were doing our checks ...

... The very next flight, while putting a post-solo student through a gruelling checkflight including simulated sink on the downwind leg, I forgot my pre-landing checks.

This time, because we had raised the wheel after the launch, the evidence was there unmistakeably displayed in the cheering faces of the crowd as they swarmed around us. I was carried away on the shoulders of my admirers, and taken to the bar where I dutifully bought the first of many rounds. But as I quaffed my beer I started to ponder — beer does that, or at least the last one does, just before I fall over. How had it come to pass that I had made this classic blunder?

A basic rule of gliding is, if you are going to do something stupid, do it out of sight of the clubhouse. Alas, I could not explain. I was forced to conclude that I, even I, was fallible. Unlike, I am sure, my honourable readers.

Obviously that was the only time I ever forgot my prelanding checks, but because until then I never normally raised the wheel in the Blanik I can't prove it. How about you? Thinking of graduating to glass soon? Then take advantage of the Blanik's gentle temperament and oleo'd undercart. Raise that wheel after launch, and if it is still up when you land you will have learned from my mistake. Alternatively, wait until you land a glass ship several inches lower than normal, and you will have learned from your own mistake — as well as buying beers,



### safety & training

the cost may be many hours helping the club Maintenance Officer rub bellies. On a lighter note, have you noticed that most articles on gliding are about how the author did something pretty good, and never about the many small mistakes which stopped it being something even better?

Flying cross-country, it's not finding the only ten knot thermal of the day that wins the race, it's leaving that thermal before it drops to five knots. Everybody else may only be using nine knot thermals, but if your average rate of climb is eight knots and theirs is nine, you lost!

I taught myself this by running a stop watch. Every time I started "just one last turn" when I knew I should be off down track, I re-started the watch, and ran it until finally, in disgust and usually in sink, I levelled the wings and set off after my wiser colleagues.

At the end of a long long flight, while my betters were downing their second beer I would emerge exhausted from my sweaty glider and observe with horror the accumulated time on that stop watch. Forget about the joy of climbing in strong thermals, weep over the time wasted at their top. And when sitting in a field waiting for the crew, don't blame the thermals for stopping too soon, blame the time you wasted circling in weak lift when the thermals were still booming downtrack. &

Sincere apologies to the now unknown author and magazine in which I found this story after I accidentally deleted the headline. If source is recognized, please let me know. editor

The trouble with learning from experience is that the exam comes first and the lesson afterward.

### When does a flight begin and end?

Well, that's obvious, I hear you say. A flight begins when the glider takes off and ends when the glider lands. Oh boy! if only it was really as safe and easy as that.

Unfortunately, there is a small proportion of pilots who appear to believe that a flight begins when the glider has left the ground, ends when the glider touches the ground on landing and whatever happens outside those two events is down to either pot luck or decisions "the glider itself makes". In other words, they start flying once the glider is airborne and stop flying as soon as it touches the ground.

There are several accidents each year and probably other non-damage incidents that we do not get to hear about, caused by pilots failing to respond to takeoff problems such as the glider yawing severely (due to crosswind or offset cable pull), incorrect pitch control or wing drop where the wingtip almost or actually touches the ground. Similarly after landing, there are sometimes problems of wing drop or weathercocking to which there is no response. I am sure that you can think of other situations on takeoff and/or landing where fullest attention by the pilot can at least minimize the risk. This does not imply that anyone is perfect - we are all vulnerable and there are rare occasions when events might overtake any one of us so rapidly that our best endeavours still don't prevent an incident of some kind. "There but for the grace of God, etc." Quick responses do not necessarily guarantee success but at least be ready to respond!

What I am getting at is that you minimize risk by reminding yourself that you must devote full attention to controlling the glider from the moment the cable/tow rope is attached, be prepared to use whatever control inputs are appropriate and be ready to release if necessary. Similarly after landing, it is still essential to control the glider as fully and accurately as possible until it stops. And even then you must not relax — you still have to get the glider back to the launch queue or wherever.

### More on coming to a stop

Most gliding clubs have one or two of them, sometimes more. "Them" are the pilots who have a desperate need to impress their clubmates by showing how expert they are at such maneuvers as landing their glider and then taxiing right up to and behind other gliders parked in a launch queue OR carrying out the last flight of the day, landing and then taxiing almost into the mouth of the hangar OR finishing a flight with a diagonal beat-up of the launch point and spot-landing almost in the launch queue, in the sure and certain knowledge that the natives on the ground are gasping with admiration.

On most occasions, the "natives" are either thinking or saying, "What an idiot!" Sooner or later the inevitable happens, of course, and the pilot taxies into an obstruction of some sort, be it glider, car, building or whatever. Each year without fail such accidents happen and the pilot often blames the glider because "the wheel brake wasn't working as it should"!

We have enough accidents each year without the need for these truly indefensible ones, so please ensure that you complete each flight uneventfully by directing the approach and subsequent landing run along a line which is not aimed towards or close to obstructions.

from the BGA Gliding Safety newsletter

DG-303 Elan Club/Standard DG-800S 15/18 DG-808B 15/18 SOLO 53hp DG-505 ORION 17/18/20 DG-505 MB 20/22 SOLO 64hp

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**Thermalling** This illustration was created for the display panels on the York Soaring Association show booth (featured at various events). I tried to demonstrate the thermals and the glider path on a thermal flight. Hopefully, this will help the general public visualize and understand the theory of thermalling. Starting from a picture I took on a "good" soaring day, I overlayed the graphics using Photoshop software, airbrush, masks, and pen tool. The gliders, some real, and some extracted from a flight simulator and then positioned on the image. The illustration (in colour) is also in the What is Soaring section on the YSA website <a href="https://www.yorksoaring.com">www.yorksoaring.com</a>. Illustration by Roberto Centazzo

### **Mafikeng**

from page 6

- Looking down at noon on 21 December and seeing only the shadow of my hat.
   Mafikeng is only a few hundred kilometres south of the Tropic of Capricorn.
- The view of the African countryside from a Rallye during an aeroretrieve with John Atwell, another kitchen party habitué.
- The great tan I brought home from a month in the African sun.
- The local choristers singing African carols at the Christmas Eve supper in the Mafikeng Convention Centre with the audience joining in!
- Having the office staff continually asking me if I was having fun yet — did they think I was born with the grin I was wearing!
- The cheering from the flightline as the last day is cancelled and the winners celebrate. And the crowd around South African Oscar Goudriaan's ASW-22 after he lands as the winner of the Open class!
- The huge thunder and lightning storms
   much bigger than ours, I'm convinced.
- The A-Team coming together to help me

- retrieve Dale when Carmen was away. What a crew!
- The crew of England's Russell Cheetham soaking him during the closing banquet.
   He got the A-Team's Irrigation Award for having to dump excess water most often.
- Having USA's Ray Gimmey, with all his experience at contests, tell us we were the best scrutineering crew he'd ever encountered — and putting it in writing in the contest newsletter!
- Shaming the Crabb brothers of Ireland into a "six-pack" because they were the last to show up to be weighed and measured — and getting two because they're twins!
- The look of absolute confoundment after I planted a wet one on Dick Bradley, the Championship Director, when the office staff told me that he had granted me free room to go along with the board. He was not often without words!

And a million more! You should be able to tell by now I had a great time. I met some of the most wonderful people in the world. It will be impossible not to go back.

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soaring, some early signs of determination were noted as Ed Wight earned his C Badge on this his eleventh flight. During the debriefing session, all are suitably initiated while standing for a group photo. Dinner was by Pizza Man, graciously served on the club patio and accompanied by Kokanee beer.

Day 3 The weather has turned much cooler and we still have a lot of wind but it is directly down the runway. This is a very busy day for everyone, particularly the towpilots. Today, we have to DI our own gliders, do four solo flights, then one dual for demonstration of a no-spoiler landing and finish with three more solos, the last of which could be a soaring flight. The name of the game for a nospoiler approach and landing is energy management — do not get fast! Let's just say that all pilots got a very lengthy demonstration of what a glider will do when a little fast and in ground effect without spoilers — and this despite the wind. With a couple of club members also flying, we logged 54 tows this day. Fortunately, the towpilots finally get some relief, as the instructors are now able to spell them off for a break. Most pilots are able to stay up for a while in lift over the Knoll south of the airport. All other usual sources of lift are not working.

**Salmon, Beer & Bach** Tonight is a salmon BBQ, an excellent meal of sockeye and spring salmon courtesy of a local lady who caters the whole thing in the club kitchen while we carry out the Kokanee debrief. The gentle strains of a Bach CD accompany this feast.

A little warmer today but still cool for August and very windy. This is the day for a modest advance from the training gliders. Each pilot has a dual in the Grob-103 Acro to experience the more reclined position and slipperiness of fibreglass gliders. Then they are all launched in the L-33 Solo, our really neat little single seater.

With the wind picking up in the early afternoon, the instructors are getting concerned about the moderate to quite rough conditions on takeoff and early tow, but the pilots seem to be handling it well. As long as the wind stays right down the runway, close-in approaches will avoid much difficulty getting back. One takeoff gets a little out of hand due to the wind shear but the pilot handles the slack rope situation very well with a timely release and dooowwnnwind landing. By midafternoon it's apparent that all this wind is finally producing something in the way of soaring conditions.

Two club pilots launch in their own gliders and very soon we are treated to radio reports as they progress from the Knoll to Hope Mtn. to Ogilvie Mtn. and then into the wave over Lake of the Woods. Ray Richards gets all the way up to 12,500 and then heads west for a cavort to the edge of the Class D airspace

over the Lower Fraser Valley. Many of our group get in some soaring over the Knoll up to 4000. Richard Cousineau's schedule has been accelerated somewhat as he has to return to work in YYZ (he is our only active airline pilot), so he completes his licence checkflight with an excellent performance late in the afternoon.

Day 5 - Graduation The morning briefing includes discussion of field selection for off-field landings and glider polars — a sort of power curve graph for gliders which are used for determining the best speeds to fly for any combination of lift and wind.

On the field, the wind is again strong with some crosswind starting to appear occasionally. This will make landing conditions a bit more challenging but the instructors are again assured by the competence we are observing. There are just five more flights to go with one of those being the licence qualification check.

As Ed Wight has already done a one hour flight for his C Badge and there are just four others remaining, we decide that the instructors could use a one hour break and launch the other four on one hour duration flights to qualify for their C Badges. When all return, we start on the checkflights. All are well flown despite the difficulties of gusty conditions on takeoff, tow and landing. The day ends with completion of the required twenty solo flights. We are surprised by the occurrence of one incident, but it is handled very well that's a story for another time. The Silver Chalice Pub is the scene of our boisterous informal debriefing, general critique and graduation dinner party.

Six newly licensed glider pilots in just five days — what a great week!

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Now for the drama! (Nothing to do with aerobatics but a simple form that has to be filled out to get a Pilot Permit.) It put me into a loop! I had imagined that a self-declaration was just that."I declare myself ... etc." However, this one asked if I had ever had kidney stones. (Yes, years ago, after living in the tropics.) This meant I had to have a Category 3 medical examination and clearance before I could proceed. This was the end of gliding school for me!

I managed to see an aviation doctor the next day back in Calgary. But the review would take some time — maybe even longer as Transport Canada was experiencing labour unrest. (Oh, how I groveled! "I'm not flying 300 people across the Pacific! Just myself for 20 minutes around Chipman. We can only glide in the summer, you know?") Finally, after four weeks, I got my medical certificate with no endorsements and then my Pilot Permit. The rest is history.

I ended the season only slightly behind on my personal schedule. I got my solo, as did five other students. I also received the A and B badges. Then (for reasons that remain unclear) I was named Outstanding Student of the Year at the annual dinner. Maybe not everybody watched the carrier-type landing I once did trying to land too short?

One evening on returning to the airfield, I sat outside the bunkhouse. In the fading sunlight, I poured over a circa-1982 Soaring Canada supplement that read "Edmonton Soaring Club — Specialties: Thermals and Mosquitos". The hangar doors were rattling in the evening breeze, and a coyote at the edge of the open farmland was voicing in the brush. And (thankfully) the mosquitoes were nowhere to be felt. I'll have to wait until the 2002 season for my licence — not such a bad thing. as more lessons will be a sensible way to start the new season. As I wait, I dream of joining the giant mosquitoes circling in the Chipman thermals; and eventually flying the Puchacz, the ASW-15 and the club's newly acquired PW-5.

If you're planning to learn to fly, read the Category 4 Medical Declaration form (Form 26-0297) to see if you can in fact self-declare. The form is not just for older folks; some youngsters may need a medical review that might delay their flying. If in doubt, get an aviation medical examination first before starting to fulfill your ambitions of learning to fly.

Also, for accuracy, the mosquitoes at Chipman were almost nonexistent, thanks perhaps to global warming. Does this mean Arizona-like thermals for the Edmonton area in 2002?

So thank you everyone at ESC for helping to make a life-long dream come true, and to Dick Parker (this year's CFI) for the cartoons.

### **SAC** news

### **INSURANCE REPORT 2001**

The purpose of this communication is to provide you with a background to the insurance discussions this year.

For a number of past years the insurance industry generally has been suffering from low profitability. Due to competition, insurers had difficulty raising premiums to economic levels without being faced with a loss of business. During this period we have seen a significant consolidation of insurance companies as they have endeavoured to minimize costs and increase market share.

While more recently there has been some upward trend in rates, the events of last September 11, coupled with the disappearance of many of the companies formerly operating in the market, provided both an added reason and opportunity for those remaining to make significant corrections to premiums and coverages. Forecasts are that vehicle insurance could increase by 15%, and business insurance by 20-30%. In the aviation market, which is more directly affected, certain risks are no longer being covered, and available liability limits are being reduced. Our agent advised us of a number of examples of significant premium increases, eg. Otters going from a 2001 premium of \$25,000 to \$60,000.

While the change of our insurance year to December 31 was undertaken for different reasons, it had a favourable effect on this year's renewal. The insurance treaties for the major carriers are renewed January 1, and are forecast to increase by 50 to 400%. By insuring early we have avoided the possible implications of these rates on our policy which would likely have resulted in an increase closer to 30%.

The 2002 SAC renewal averages an increase of 17%. This is after deducting a 4% premium reduction earned due to the thankfully low overall claims in 2001. Past reports from the

Insurance committee have detailed the long-term poor claims record of SAC and the resultant lack of competition for our business. While 2001 was a good year in terms of our claims we are assessed by insurers on our 10 year performance, and particularly the significant liability settlements incurred. An improvement of our record in the future is the only way to improve this situation.

Our efforts to improve safety and the initiatives taken were noted, and while we would all obviously wish for lower renewal rates, the practicalities are such that we are all grateful they are not higher.

Two changes to the policy coverage are particularly important to note:

- 1 The coverage territory is now limited to Canada, USA, Mexico, and the Caribbean. Worldwide coverage is available by separate application with an added premium.
- 2 Non-owned liability coverage is no longer automatic. This applies where you wish to rent or borrow an aircraft not currently insured under the SAC policy, eg. on a trip to the USA. You can obtain coverage by separate application and premium, but hull coverage is not available. As a result, if you are renting an aircraft you are better off to take the insurance option offered by the operator.

**Richard Longhurst** 

### **A+ for AGM seminars**

The SAC Annual General Meeting was held in Ottawa on 9 March, ably organized by Beth McCollum and a crew from the Gatineau Gliding Club. There were about sixty in attendance, the business meeting was short and very much *pro forma* — but the rest was both enlightening and entertaining.

This AGM was advertised as a one-day "AGM Lite", but I and all attending can tell you that the set of seminars presented was one of the most interesting in recent memory:

**The ORBIS program** The lead speaker was Dr. Brian Leonard, the eye surgeon who is

heavily involved in *Orbis*, the reknowned international program to teach improved eye surgery methods by demonstration in developing nations. This is done through the use of a small team of volunteer doctors and nurses operating out of a DC-10 which has been outfitted with a modern operating room and a multimedia TV teaching system. Local surgeons are brought in to work on selected patients from the area, using the latest procedures. The hold of the aircraft contains older eye surgery equipment which can be used to demonstrate new techniques with existing gear in the area hospitals.

Dr. Leonard gave a long slide show illustrating what they do worldwide and the tough conditions under which they work.

### **World Class Glider Competition**

Glenn Lockhard led a general discussion on the use of under-15m gliders for early solo, badge work, and beginner competition like the "Mayfly". Although numbers do not allow a dedicated PW-5 contest in Canada, the importance of using simple, easy-to-fly sailplanes of this type to build and encourage cross-country skills at the club level is seen to be an important means to increasing enthusiasm and skills.

### The UAV world

Howard Loewen from Winnipeg gave an overview of the state of development and use of unmanned aircraft. Howard runs a small company which designs and builds autopilots for small UAVs. RC models have definitely moved from the hobby world to use in many surveillance and data gathering or transmitting roles on Earth and later even on Mars.

The US military is increasingly using large UAVs for missions in which the weight or physiology of a human pilot present limits. Tiny man-portable UAVs are being developed for tactical use. Interesting current work in the field is directed towards miniaturization of stability and control gear and the sensors carried.

### A funny aerobatic lesson

The lunch speaker was Garth Wallace. He is an aviation writer who contributes to and

| SAC INSURANCE HISTORY, 1990 – 2001 |      |      |      |      |      |      |      |      |       |       |       |      |
|------------------------------------|------|------|------|------|------|------|------|------|-------|-------|-------|------|
|                                    | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998  | 1999  | 2000  | 2001 |
| Insured Clubs                      | 43   | 38   | 39   | 41   | 40   | 39   | 32   | 37   | 37    | 39    | 41    | 38   |
| Total Aircraft                     | 361  | 370  | 384  | 384  | 417  | 413  | 393  | 387  | 411   | 359   | 376   | 306  |
| Hull Value (\$M)                   | 6.77 | 7.33 | 7.99 | 8.57 | 9.09 | 9.43 | 9.13 | 8.61 | 10.15 | 10.55 | 10.89 | 9.49 |
| Hull Premium (\$K)                 | 211  | 201  | 229  | 198  | 221  | 244  | 247  | 241  | 267   | 289   | 306   | 300  |
| Hull Losses (\$K)                  | 263  | 48   | 153  | 258  | 205  | 225  | 185  | 151  | 340   | 347   | 280   | 127  |
| Hull Loss Ratio (%)                | 124  | 24   | 67   | 130  | 102  | 89   | 75   | 63   | 127   | 120   | 92    | 42   |
| Total Premium (\$K)                | 312  | 295  | 328  | 298  | 323  | 354  | 356  | 347  | 423   | 435   | 466   | 493  |
| Total Losses (\$K)                 | 324  | 53   | 164  | 274  | 253  | 240  | 1616 | 1717 | 456   | 401   | 339   | 127  |
| Premium/Losses (%)                 | 104  | 18   | 50   | 92   | 79   | 68   | 454  | 495  | 108   | 92    | 73    | 26   |

edits the COPA magazine, Canadian Flight, and has authored several humorous books on general aviation. He kept the AGM in stitches with an acted-out description of his first session in a Citabria as a new aerobatic instructor at a flying club. His first student was a quite determined and assured, five-footminus, cushion-packed young lady who had to go through great leg-stretching, twisting and contortions to reach all the controls in the right order to complete a spin or roll.

The impossible was always accomplished with a quiet, smug, "See ...!"

### The international Mars Project

Alain Berinstain, a Gatineau Gliding Club pilot, works at the Canadian Space Agency. He heads the group which is planning future Canadian experiments for Mars missions. Alain gave a fascinating illustrated talk on the history of missions to Mars and current planning by NASA and other international groups for trips up to 2011.

Canada is very active in its areas of national expertise such as remote manipulation. In particular, remote hard rock drilling is going to be a big requirement in future missions which are concentrating on subsurface sampling to examine material which hasn't been affected by high surface irradiation and chemical alteration.

Alain spoke on the philosophy of possible manned missions, the physical problems, current theoretical and practical experiments towards this goal, and the kind of public perception and acceptance of manned exploration which ultimately drives the funding of these programs. Very interesting.

### Simulator use for gliding training

Paul Moggach and John de Jong of York Soaring are designing and constructing a working two-axis motion glider simulator based on a rebuilt Ventus cockpit. Such a project has only

### **Coming Events**

3-7 June SAC Eastern Instructors Course SOSA. Information: Tom Coulson, (519) 651-2779, <tcoulson@istar.ca>

26 Jun - 5 Jul **Canadian Nationals**Practice 24-25 June. All classes,
Hawkesbury. Info and registration
on SAC website.

### 22-26 Jul CAS (Eastern) X-C Clinic

Club de Vol à Voile de Québec at St. Raymond (close to Quebec City). For information about clinic, go to CVVQ clinic website at <a href="mailto:kww.cvvq.net">kww.cvvq.net</a>>. Contact: Bruno Bégin, <a href="mailto:kww.cvvq.net">bruno.begin@hospitalite.com</a>>.

### 27 Jul - 5 Aug Cowley Summer Camp

The biggest and best soaring camp in Canada. The Alberta Provincial gliding contest is held mid-week. Hosted by ASC. Tony Burton, <free-flt@agt.net> (403) 625-4563. Detailed info on Cowley at <www.soaring.ab.ca>.

12-16 Aug CAS (SW Ontario) X-C Clinic
Hosted by SOSA. Spencer Robinson,
<contactcas@netscape.net>.

5-14 Oct Cowley Fall Wave Camp

Camp has been extended this year to increase the odds for long distance visitors. General Cowley info at <a href="mailto:kwww.soaring.ab.ca">kwww.soaring.ab.ca</a>. Tony Burton, <a href="mailto:free-flt@agt.net">free-flt@agt.net</a>> (403) 625-4563.

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become possible recently due to the rapidly increasing power of simulation software and computing speed per dollar.

Paul, who has done a lot of work in defining the "choke-points" in conventional training and has written a new instructor manual, believes that an effective simulator can be just as useful a tool in gliding as it is for the commercial aviation world. He is convinced that a workable, affordable simulator is now possible and, with John, is actively trying to prove the concept. Good luck to them — I await further developments on progress with this project.

**Tony Burton** 





### **Roger Hildesheim**

49 Maitland Street, Box 1351, Richmond, ON KOA 2Z0 (613) 838-4470, < lucile@istar.ca>

It has been quite a busy winter for records. Summer soaring in Australia seemed to be the ticket this year for Tracie Wark, Spencer Robinson, Pat Templeton, and Dave Springford. Great show, folks. I'm looking forward to going through your flight recorder files.

The claims that I have received show that a bit of clarification is in order regarding "citizen" records (flights flown outside of Canada). A citizen record is not a separate class of records such as Open, Club, etc. Therefore, a Citizen record claim may be made only if:

- the distance or speed performance exceeds the existing record in that class flown within Canada ("Territorial"), or
- there is no existing Territorial record.

Now that OUR summer is approaching, don't forget about the Club class record category, which is still quite empty (see current records table in the 1/2002 issue of free flight or on the SAC website documents page). This is a great way to get those club ships (and pilots) out and flying challenging tasks. Note that there is no restriction on the sailplane flown, it is open to all sailplanes. The appropriate handicap is applied to the actual distance or speed performance you achieved on your flight.

The following nine claims have been received:

**Tracie Wark** Pilot

Date/Place 18 January 2002, Tocumwal, Australia Record type 100 km speed to goal, Feminine, citizen

FAI category SAC only Sailplane type LS-4, VH-CXP 106.42 km/h Speed claimed

Task completed Start: 35° 36.212 S, 145° 50.271 E

Goal: 34° 52.679 S, 146° 36.734 E

**Previous Record** Not claimed Pilot **Tracie Wark** 

Date/Place 18 January 2002, Tocumwal, Australia Record type Free out & return, Feminine, citizen

FAI category DOF 3.1.4b Sailplane type LS-4, VH-CXP Distance claimed 320.2 km

Tocumwal to 34° 34.904 S, 146° 46.293 E and return Task completed

Previous Record Not claimed

Pilot Tracie Wark

Date/Place 20 January 2002, Tocumwal, Australia Record type 500 km out & return speed, Feminine, citizen

FAI category DOF 3.1.4g LAK-12, VH-GDE Sailplane type Speed claimed 99.58 km/h

Task completed Tocumwal to West Wyalong, and return

Previous record Not claimed

Pilot **Tracie Wark** 

Date/Place 20 January 2002, Tocumwal, Australia Record type Out & return distance, Feminine, citizen FAI category DOF 3.1.4e

LAK-12, VH-GDE Sailplane type Distance claimed 510.3 km

Task completed Tocumwal to West Wyalong and return

Previous record Unclaimed Citizen flight

Pilot **Spencer Robinson** 

Date/Place 24 January 2002, Tocumwal, Australia Record type 200 km triangle speed, Club, citizen

FAI category SAC only

Sailplane type Standard Cirrus, VH-GZR

Speed claimed 81.6 km/h

Tocumwal, Urana, Wood Park, and return Task completed Previous Record

Not claimed

Pilot **Dave Springford (Pat Templeton)** 

Date/Place 24 January 2002, Tocumwal, Australia Record type 200 km triangle speed, Multiplace, citizen

FAI category SAC only

Sailplane type Duo Discus, VH-GIE

### Tim Wood earns top flight trophies for 2001

The best flight of the year for the **BAIC Trophy** (left side of photo), and the best five flights for the Canadair Trophy were both scooped up by long-time glider pilot *Tim Wood* of SOSA. All were flown from Invermere, BC in his LS-3A.

Tim's best flight, 776.1 km, which took place on 19 June, also won him a new Canadian record for Free 3-turnpoint distance. The flight lasted 9 hours and 17 minutes, for an average speed of 86.3 km/h. It took place along the east wall of the Columbia Valley. Declared start and finish point was the Swansea hang glider launch site. The declared turnpoints were the Blaeberry bridge, Elko railway crossing, and Mount Seven hang glider launch site.

Tim's best flight was almost equalled by that of Tony Burton, flying from the same airfield, whose handicapped score in his RS-15 almost matched Tim's.

To earn the Canadair Trophy, Tim had additional flights of 727.1, 323.8, 667.6, and 463.9 km.

David McAsey, Trophies chairman



Jackie Wood

Speed claimed 108.5 km/h

Task completed Tocumwal, Urana, TP 35°14.16 S, 145°39.67 E, return Previous record

Charles Yeates (Kris Yeates), 79.5 km/h, 1987

Pilot **Dave Springford (Pat Templeton)** 

Date/Place 24 January 2002, Tocumwal, Australia Record type 100 km triangle speed, Multiplace, citizen

FAI category SAC only

Duo-Discus, VH-GIE Sailplane type

Speed claimed 112.7 km/h

Task completed Tocumwal, Savernake, Berrigan NW, and return Previous record Charles Yeates (Kris Yeates), 102.7 km/h, 2001

Pilot **Tracie Wark** 

Date/Place 25 January 2002, Tocumwal, Australia Record type 400 km triangle speed, Feminine, citizen

FAI category SAC only LAK-12, VH-GDE Sailplane type Speed claimed 95 km/h

Task completes Tocumwal, Yanco South, Walla Walla, and return

Previous record Not claimed

Pilot **Tracie Wark** 

Date/Place 26 January 2002, Tocumwal, Australia Record type 200 km speed triangle, Feminine, citizen

SAC only FAI category LAK-12, VH-GDE Sailplane type Speed claimed 99.9 km/h

Task completed Tocumwal, Bundure SW, Daysdale, and return

Marion Barrit, 68.7 km/h, 1970 Previous Record

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### Sporting

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David McAsey 47 - 2300 Oakmoor Dr SW Calgary, AB T2V 4N7 (403) 281-7962 (H), 281-0589 (B&F) mprsoar@home.com

### **Video Library**

Ted Froelich 2552 Cleroux Crescent Gloucester, ON KIW 1B5 (613) 824-6503 (H&F) 102375.1616@compuserve.com

### Website

See Prairie Zone Howard Loewen members:

Tony Burton free-flt@agt.net Martin Vanstone mvanstone@ltinc.net

## SAC Video Library

### **Ted Froelich**

2552 Cleroux Crescent, Gloucester, ON K1W 1B5 (613) 824-6503 ph & fax – call first if faxing 102375.1616@compuserve.com

Video tapes are available to clubs and members from the SAC library. Rental is free but you pay shipping both ways. Send cheque to Ted Froelich at address above. Copies: \$3 per tape + 10¢/min of video duration.

### **Professional videos**

- P1 Running on Empty (USA) 22 min Top pilots compete in Arizona. Narrated by Cliff Robertson.
- P2 Free flight (UK) 51 min Soaring in the UK, its history, and how gliders are made.
- P3 Pure flight (UK) 30 min Cliff Robertson tells power pilots about soaring in Vermont and Colorado.
- P4 Soaring (USA) 20 min A history of soaring and the 1988 Region 8 competition.
- P5 Soaring in harmony with the wind (USA) 14 min Excellent ridge soaring from Stowe, VT.
- P6 Delta Fox (France) 24 min A flight over the French Alps (to music).
- P7 Riding the Mountain Wave 27 min The 1982 Cowley wave camp (produced by CBC Edmonton).
- P8a Wind Born 55 min
  A young lady learns to fly gliders and then goes on a spectacular trip across the Southern Alps.
- P8b Champions of the Wave 52 min World championship in New Zealand. Good time lapse footage of wave.
- P9 Soaring in France Collection of 20 professional and amateur soaring films from 4 to 35 minutes.
- P10 *25ème Championnat* 37 min 1997 World championships in France.
- P11 Segelflugschule Wasserkuppe 1992 Soaring school where ASKs are made.
- P12 Bayreuth 1999
  The World championships in Germany.
- P13 The Space Shuttle 60 min World's most expensive glider, L/D = 5.

- P14 The Hot Air Blimp 60 min
  Take the thermal with you yet keep control.
- P15 Space (USA)
  Secrets of the unknown.
- P16 Apollo 11 & Columbia '59 (USA)
  The first landing on the moon and the Space
  Shuttle Columbia.
- P17 Apollo 13 (USA)

  Dramatization of the eventful moon flight.
- P18 Silent Flight (Canada)
  Gliding a good video from the Discovery
  Channel "Flightpath" series.

### **Canadian Club videos**

- C1 SAC 50th anniversary (eng & fr) 15 min Soaring from Hope to Halifax.
- C2 GGC and Pendleton's 50th anniversary
  Tiger Moth gathering, giving rides and tows.
  Displays, aerobatics and speeches.
- C3 Base Borden Soaring Group Winch soaring at its best.
- C4 Chasing Phantoms, Hope BC 8 min
  A professionally done filmed slide presentation with musical background, and some
  breathtaking aerobatics.
- C5 Winnipeg Gliding Club 29 min
  TV documentaries and some interesting
  amateur shots at the field.
- C6 1982 Nationals at SOSA 27 min High quality documentary by Molson's.
- C7 Bluenose Gliding Club 90 min
  - a. The Harris Hill Soaring Museum
  - b. The quiet challenge
  - c. A motorglider visit from Florida
  - d. Sailors of the sky
- C8 1989 Flying Week at Bluenose A documentary of activities at Stanley, NS, and a visit to St. Raymond, PQ.
- C9a Interview with Tony & Ursula 32 min
  TV interview answering many layman's questions about soaring in general and is very useful in introducing the public to soaring.
- C9b Building the AV-36 37 min
  The flying wing gliders built by the
  "Tenardee" club members in Calgary in the

early 50s. Flying activity in southern Alberta that led to the discovery of the wave at Cowley. Transcribed from 8mm film by builder Bill Riddell who does a "voice-over".

- C10 SOSA in the 60s When club in Brantford (from 8mm).
- C11 Soaring at GGC in the early 70s.

  Soaring before fibreglass (from 8mm).
- C12 AVV Champlain (French) 5 min
  Intro flight over Eastern Townships

### **Educational videos**

- E1 To be a Pilot (TC) 21 min

  Overconfident student prangs the club's

  Cessna 150 in a crosswind landing but is

  given a second chance.
- E2 The Wrong Stuff (TC) 51 min
  A warning to complacent pilots.
- E3 lan Oldaker et al (SAC) Eight interesting 1 hour lectures.
  - a. Dangers on tow lan Oldaker
  - b. Airspace use Kathy Fletcher (TC)
  - c. Stall prevention on final
  - d. Joining gliders in a thermal lan
  - e. Stress overload lan
  - f. Dehydration Dr. Hanson (TC)
  - g. Post-solo training
  - . The important first flying lesson lan
- E4 Collision Avoidance in gliders (SAC) How to enter a gaggle safely.
- E5 Why Airplanes Crash (NOVA)
- E6 Better Communication for Better Safety (TC) 26 min
- E7 Safety by Stress Management (TC) 40 min
- E8 Accidents and Pilot Planning (SAC) 24 min
- E9 When in Doubt (TC)
  About ice on the wings.
- E10 Bon Voyage. But ... (External Affairs)
  Travel tips for Canadians abroad.
- E11 Speed to Fly
  Karl Striedieck from a cross-country
  video series.
- E12 CAS Symposium ~60 min ea Eight lectures in Hawkesbury in 1999.



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**L-33 Solo**, 1997, zero hours, basic inst, Becker radio, excl cond, located in BC. U\$\$23,500 obo. (604) 894-5727, eves (604) 894-5707, <pemsoar@direct.ca>

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**Std Austria SH-1**, CF-RSO, 1234 h. Basic instruments and Varicalc 1, encl. trailer, wing/tail/canopy covers, new control cables installed in 2000. At London SS. \$13,000 obo. Bob Morse (519) 453-0724, or Matt Keast (519) 680-0574, <a href="mailto:richerate">mkeast@golden.net</a>.

**Std Jantar 1a**, C-GXTS, 540h, all ADs done, no damage, basic instruments, ATR 720A transcvr, boom mike, two total energy varios with audio, trailer and ground handling gear, wing & canopy covers, solar charger, camera, chute. \$28,000 obo. Al Sunley (780) 464-7948, *<alsunley@freenet.edmonton.ab.ca>.* 

**SZD Cobra 15**, C-GQWQ, about 830h, all ADs done, true 38:1 glide, no damage, basic inst, relief system, spare parts. Encl fibreglass trailer, full covers. This Cobra has lived in its own private hangar since new.\$18,000. For more details and pictures go to <a href="https://www3.sympatico.ca/bobleger/index.html">https://www3.sympatico.ca/bobleger/index.html</a> Contact: Bob Leger at (905) 668-5111 (H), e-mail to: <a href="https://wbw.gov.npatico.ca/">bobleger@sympatico.ca/</a>.

HP-14\_ Construction\_Index.html> <www.soaridaho.com/Schreder/HP-14/C-FAXH> <www.soaridaho.com/Schreder/HP-14/hp-14>

RS-15, C-GPUB, 2100h. Honest almost-Cirrus performance, Hollestelle winglets give big gain in low speed handling. Cambridge & Filser varios, Oz, encl trailer, misc RS-15 plans & odds & ends. \$16,000. Tony Burton (403) 625-4563, <a href="free-fit@agt.net">free-fit@agt.net</a>>. For air photo, go to <a href="www.soaridaho.com/Schreder/">www.soaridaho.com/Schreder/</a>>.

Cirrus 75, Toronto, 660h, plane and trailer refinished in 1996. Trailer modified for ease of use. One-man rigging. Filser LX160 computer with GPS. Delcom radio, Winter barograph, Security parachute. \$27,000. <a href="mailto:keithmck@idirect.com">keithmck@idirect.com</a>.

LS 4, T2, 1983, 1376 h, full instrumentation with Filser LX 4000, Sage vario, EDO-AIR 720 radio, alum Cobra clam shell trailer, tail dolly, US\$29,000. Contact Carsten (905) 465-0750, <susanaycarsten@aol.com>or Paul (905) 765-9809. pault2thompson@aol.com>.

**ASW-20B**, 1985, 1450h. Excel gel coat and general cond, never damaged, Dittel FSG60M, Sage vario, Winter ASI, and 2  $\pi$  vario, Cambridge L-NAV, relief system, wing covers, tow-out gear, Komet trailer, outstanding performer. \$59,000 (US38K). Ulli Werneburg, (613) 826-6606 or < wernebmz@magma.ca>.

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