



free flight • vol libre

3/96
Jun/Jul





CANDIDATE WANTED

SAC representative to the board of the Aero Club of Canada

- Lives in SW Ontario to minimize travel cost for SAC
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 - Reports to the board of SAC

Very, very low wages but high perceived value

Apply by contacting the National office
(fax, mail, phone, Internet, carrier pigeon, etc)

Approximately 130 SAC members are currently on the Internet. If you just recently got hooked, please let the office know your address as we plan to use this cost-efficient route more and more. SAC now has its very own web home page (<http://www.pubnix.net/~rmacpher/sac.html>). This net address is temporary and we are routing email through the Carleton freenet. It will be easier for our staff to manage this communication channel when we get a permanent SAC address.

We are getting soaked! All of us by various governments, but in eastern Canada at least by Mother Nature. This probably explains why few clubs have sent in the membership fees. Remember, the insurance requires that you be a registered member to be insured, be it your own glider or a club ship! If you have any doubt, ask your treasurer first if your SAC membership has been sent to the National office.

On the topic of rainy weather, how would you feel if you had spent serious money to practise at the site of the 1997 World's and experienced the worst weather that area has seen in 18 years. This is exactly what has happened to Nick Bonnière of Gatineau and André Pepin of Champlain as they attended the Centre de Haut Niveau at Saint-Auban-sur-Durance. The area has an average of 300 days of sunshine per year. By the way, the CHN offers courses open to anyone who cares to register. The National office will have the information.

We are also getting, quite frequently I must say, FAI badge submissions from individuals that have not previously been SAC members. We will only process claims from SAC members. Why? Because the FAI badge system is a privilege we get through our participation in the Fédération Aéronautique Internationale through the Aéro Club of Canada. The cost of this is significant, \$9500 for 1996 and is paid by SAC members through their SAC membership fee. It would be totally unfair to give the service to those who do not contribute. We will not accept abuse of our services by nonparticipants.

Let's hope for good weather, strong thermals and safe landings.

J'ai été très heureux de voir le nombre d'articles en français dans le dernier numéro. Il est à peu près temps que nous affirmions notre présence et utilisons ce véhicule pour communiquer entre nous. J'ose espérer que ceci ne restera pas un incident mais deviendra la norme.

Comme noté plus haut, des stages sont offerts au Centre de Haut Niveau de la Fédération Française de Vol à Voile. Le centre est situé sur le même terrain que le Service de Formation Aéronautique, organisme gouvernemental qui donne entre autres les cours d'instructeurs auxquels Jean Richard fait référence. Les stages du CHN sont ouverts à tous. La documentation est disponible du secrétariat national grâce à la générosité d'André Pepin qui nous l'a rapporté.

Bons vols, amusez vous prudemment!

Pierre Pepin president

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

ISSN 0827 – 2557

the Zen of soaring
a Canadian mountain soaring course
soaring the "Parcours du Combattant"
the 1996 IGC meeting
so, you want to buy a fibreglass sailplane
glider TLC, keeping the water out
glider TLC, an opinion on wax and polish
when are you most at risk? part 2
circuits and landings



Cover

A beautifully restored British Tutor T-31 at the vintage sailplane meet last summer at Elmira. photo: Gilles-André Séguin

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Notice to readers
free flight is now on the net at
free-flt@agt.net

The SAC office has moved down
the hall! SAC's address is now
Suite 101, not 111

The Zen of Soaring

may the force be with you

Bill Hill

from the Seattle Glider Council *Towline*

What a pleasure it is to strap on my Discus and roam about the springtime skies. A soaring flight has been an itch that has been waiting to be scratched all winter!

The first flight of the year was something unique for me in that it was the first time I've flown the ship with only the mechanical vario, as my air data computer was out having a green LED screen installed.

On one hand, I've preached about the need for an audio when flying with other sailplanes but on the other, what a pleasure it was to fly with a big hole in the instrument panel — no noise and almost no needles bouncing around in front of me. The lack of audio, averager and extra indicator really forced me to listen and feel what the ship had been trying to tell me for the last six years. Why, I could actually hear the change in wind noise coming from the tail if I was a bit too aggressive on the rudder when entering a thermal or making a turn. During a stall I could hear pre-stall rumble being transmitted from the wings into the fuselage and forward into the cockpit. Amazing!

For the last six years I have allowed my onboard electronics to keep me separated from the very secrets my sailplane was trying to show/tell me. What a concept — engineless and noiseless flight.

The next rush of enlightenment came upon me as I realized and remembered that this is one of the things I enjoy most about teaching soaring in that trusty old drag bucket ... the "too dirty three". It never goes anywhere in a hurry, but if you can convince your students to listen and feel as well as to see, then Ernie, Paul and Bill Schweizer's strutted wonder can instill all the basics needed by the budding novice.

Does this mean I'll be roaming the skies sans bells, whistles, and buzzers? No. What it does mean is that I'll be making a little stick-on cover for one of the vario indicators and block it from view from time to time. It also means that I'll be turning down the audio (when I'm by myself), and that I'll cover up that LED screen that I spent bucks to have modified.

What all this means is that I will perform the above mentioned exercise in order to ensure the tactile, auditory, and yes, spiritual links that connect me to my flying machine are intact and in place.



The SOARING ASSOCIATION of CANADA

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

free flight is the official journal of SAC.

Material published in *free flight* is contributed by individuals or clubs for the enjoyment of Canadian soaring enthusiasts. The accuracy of the material is the responsibility of the contributor. No payment is offered for submitted material. All individuals and clubs are invited to contribute articles, reports, club activities, and photos of soaring interest. A 3.5" disk copy of text in any common word processing format is welcome (Macintosh preferred, DOS is ok in ASCII text). All material is subject to editing to the space requirements and the quality standards of the magazine.

Prints in B&W or colour are required. No slides or negatives please.

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

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

For change of address and subscriptions to non-SAC members (\$20 per year, US\$22 in USA, and US\$26 overseas - extended subscriptions available at cost savings), please contact the National Office, address below.

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Deadline for contributions:

5 January, March
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September, November

L'ASSOCIATION CANADIENNE DE VOL A VOILE

est une organisation à but non lucratif formée de personnes enthousiastes cherchant à développer et à promouvoir le vol à voile sous toutes ses formes sur une base nationale et internationale. L'association est membre de l'Aéro Club du Canada (ACC) représentant le Canada au sein de la Fédération Aéronautique Internationale (FAI), administration formée des aéro clubs nationaux responsables des sports aériens à l'échelle mondiale. Selon les normes de la FAI, l'ACC a délégué à l'Association Canadienne de Vol à Voile la supervision des activités de vol à voile telles que tentatives de records, sanctions des compétitions, délivrance des brevets de la FAI etc. ainsi que la sélection d'une équipe nationale pour les championnats mondiaux biennaux de vol à voile.

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

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

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Les articles de *vol libre* peuvent être reproduits librement, mais la mention du nom de la revue et de l'auteur serait grandement appréciée.

Pour changements d'adresse et abonnements aux non membres de l'ACVV (\$20 par an, EU\$22 dans les Etats Unis, et EU\$26 outre-mer) veuillez contacter le bureau national à l'adresse qui apparaît au bas de la page à gauche.

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Letters & Opinions

LOSING MY SOARING VIRGINITY

I'm a raw rookie to the sport of soaring. I was born with the dream of flight in my head. Barely had I been potty trained, when I realized that I wanted to be a pilot. Ten years ago I leaped out of a serviceable aircraft at 3000 feet and made another 750 leaps after that. I thought that I had achieved my dream of flight as a 'body pilot' participating in the purest and most exciting form of all airborne sports known to man.

Yet my dream somehow seemed incomplete because I still could not fly a conventional aircraft. Then last fall, while standing in a line at the local bank, I noticed a poster of a Twin Astir on the bulletin board. No starbursts went off, nor were there any fireworks gleaming in my eye accompanied by violin music but I knew I had to experience this form of flight. Two days later I was on an 'intro' ride with Bill Roach catching some decent thermals in the Krosno and having one heck of a good time above the Ottawa River. Yet before I had even settled myself in the cockpit, I could see the glint of that hook angling towards me. Just being around the sleek aircraft (of course any glider looks sleek compared to a towplane or a Cessna) and touching it was enough for me to know that this was gonna be cool! As soon as we landed Bill and I headed for the clubhouse, and before the sun had set, I had become a member of the Montreal Soaring Council.

I gorged myself on flights and did my solo later in the fall. That was finally and truly the culmination of a lifelong dream. To be in complete command of an aircraft, a stick and rudder solely under my control — that was a feeling of immense satisfaction. Thanks to my friend and instructor Martin Hickey for putting up that unassuming little poster in the bank. I'm still a student with a long way to go, but it will be a long time before another flight will give me the same kick in the pants as my first solo.

On the topic of PR, I've just received my third issue of *free flight* and been to my first AGM and already I see a recurring theme — lack of new members. I've asked myself why I didn't start sooner. It's not as if I did not know of the existence of the sport. But as they say, 'Out of sight, out of mind'. All it took was a small colour poster to get me to drive an hour to Hawkesbury. The point is that this sport has no exposure to the public at all. Soaring does have the potential to be very popular for three reasons:

• **It's relatively cheap** In Canada, through our own little form of socialism, we manage to keep costs down by requiring our members (especially instructors and tow-pilots) to put in volunteer time.

• **The interest is there** Go to any airshow and you'll see how many people are excited by the concept of flight. I doubt that most of the spectators there participate in aviation activities. The problem is that most probably don't think they have the money to get a pilot licence. Seeing those expensive jets rip across the sky also makes flying look inaccessible. *They don't know where to go except the local flying club which costs thousands!* One way to promote this sport is as an affordable alternative to powered flight. I realize this isn't exactly a revelation but nonetheless it needs to be conveyed to the public.

• **Flight is exciting!**

free flight Admittedly, I've seen only three issues so far. It is probably the single most important tool for communication within the Canadian soaring community and for representing our sport to anybody who cares to open it. Unquestionably and without a doubt, publishing technical articles and information is an important function of this magazine as a means to promote knowledge and safety. But as a financial analyst, I wade knee-deep in technical data everyday. As a newcomer, I am also interested in what's going on out there. Articles on first cross-country flights or first solos; how you got lost on a cross-country and found your way back — or didn't; the feeling after using your first thermal; what mountain flying is like, etc. You don't need to be a brilliant writer to submit articles. Just simple little anecdotes (from any time period) are fun to read and of interest to low time pilots like myself.

One conclusion that I have reached about soaring is that it does not seem to be as visually pleasing as other sports like skydiving. It seems to me that if you've seen one still photo of a glider in flight you've seen them all! Am I wrong? If I'm not, we need some more photos to jazz things up (colour would be nice although I realize that this aspect would increase the costs of publication).

Also, *free flight* should promote the progress of junior pilots as well as competitors. Articles on safety issues and flight techniques geared towards beginners would be interesting also. Any instructor worth his or her name should be able to contribute some valuable piece of advice. Most students only have the local instructors as resources. It would be infinitely superior to have all the fine gliding minds in Canada (and elsewhere) share their knowledge with us in our national magazine. I shall now step down from my soapbox. Blue skies and tall thermals for '96.

Behzad Shroff, raw rookie, MSC

A Canadian mountain soaring course



8750 foot Mt Moberly just northeast of Golden

Dan Daly
Bluenose Soaring Club

I WAS THINKING the other day of one of the most memorable vacations of my life, a Canadian mountain soaring course which culminated in my first solo cross-country flight. I thought others might be interested, so here goes. I found a letter in a back issue of *Soaring* magazine about a Canadian commercial operation, the Rocky Mountain Soaring Centre in Golden, BC. I had been thinking of going to Estrella or some similar place for a change of scenery, but decided to support a Canadian operation instead. After some correspondence, I decided to book a three day course from April 23-25, and stay to fly for a couple of days (and allow for weather). I flew into Calgary, rented a car, and drove to Golden. I stayed at the Country Comfort B&B downtown (highly recommended).

The next morning I presented myself at the crack of ten and met Uwe Kleinhempel and Aaron Archibald, the co-owners. Their equipment consisted of two L-13 Blaniks, one Ka6E, a Pilatus B-4, a Phoebus B (I understand they have since upgraded to a Ventus B and LS-4), and a Citabria towplane. It was early in the season, and one other visiting pilot from England was around. A number of private ships are based at Golden and fly on the weekends.

The course encompassed six hours (more or less) of ground school tailored to your experience level and knowledge, and five dual flights. The plan is for two hours of ground school, a 1.5 hour flight, lunch, and another 1.5 hour flight for two days (last flight is 2.5 hours). The final day is ground school followed by a full day's rental of an

appropriate sailplane, based on your performance.

A word on my experience level. I got my licence through the cadet program in 1974, flew with them until I went to university, where the normal cash flow problems (that is, none) stopped my flying for four years. After graduation, I flew with the Winnipeg club for a year, and then the cadets in Nova Scotia for two more. I drifted away in 1984. I started flying again with Bluenose Soaring Club in August 1994, and although the best of the year was over, flew a fair amount in the fall. So, my experience level was just short of 100 hours, 850 winch flights, mainly on 2-33, 1-26, K7, and K8, and about ten hours in the last year. So, here's what happened for someone of my experience:

April 23 Uwe and I did an hour of ground school on mountain met, the theory of mountain thermals, influences of sun/wind/terrain, and katabatic/anabatic winds. This was in lawn chairs outside, with the mountains on each side of the Columbia Valley as training aids. Uwe has extensive mountain soaring experience, and is an excellent instructor (I taught at the Air Force Navigation School and have seen quite a few). On occasion, we agreed to disagree, but I wrote down his point of view, and have since changed some longstanding opinions as a result.

After reading the Blanik handbook for the first time, we went flying. Considering it was the first aerotow in thirteen years, in a strange glider, everything went well. I promptly fell out after twenty minutes (sigh), and we relaunched for a two hour flight on the west side of the valley, covering contour flying, recognition of katabatic winds,

related safety (escape maneuvers, speed, etc), approaches to the mountain, figure eight turns, and circling over the ridges. A very weak wave was present, very different from what I'd read they were like, and we worked it for a time to 9700 feet. After a short debrief to reinforce lessons learned, I went downtown (five minutes away) for supper and a rest.

April 24 They say that if you don't like the weather in the mountains, wait five minutes and it'll change. Monday was a washout for low ceilings. Another hour spent at school, covering wave soaring, ridge soaring, converging winds in the mountains, recognition of strong winds, stall/spin symptoms, and human factors in mountain flying (stress, fatigue, hypoxia, dehydration, etc). We talked about cross-country, thermalling efficiency, and outlanding field selection in the mountains. Uwe asked if I was interested in going cross-country, and I agreed. He asked me to prepare for a short trip to Parson and return (35 km) for the next day, if there was a south wind, and Donald (26 km) in case of a north wind.

April 25 The weather was magnificent. A brick thrown strongly would've stayed up by itself. The winds were light from the south, and the cloudbase looked like about 11,000 feet. Uwe smiled and said we'd do Parson, Donald, and return, about 118 km. Gulp... After a 5500 foot tow (3000 agl), I released in light lift and approached the mountain, penetrating south into the wind. Lift was right where the lessons had said it'd be, and I took a one knot thermal to 6500. I ran on in zero sink, and hit 6 knot lift to peak height, where it decreased to 4 knots. We proceeded south, picking our way between very scattered snow showers,

practising dolphin flying, taking about an hour and twenty minutes to arrive abeam the turnpoint. I fueled up in an 8 knot thermal to 10,400 and positioned for my first ever turnpoint picture. Uwe had loaned his camera to a chap from Calgary for his Gold distance flight attempt (it was that kind of day) and my bulky Pentax didn't fit the mount, so the photo would be hand-held, in a not-too-familiar aircraft, without a normal horizon (those mountains again). Charming... I left the security of my thermal and positioned for the approach with Uwe making suggestions on how to make it easier. I took the photo around 1700 local, in a flurry of looking out, turning, trimming, cursing, pointing, and shooting. There was amused silence from the back, saying it all. *Lesson 1: practise TP photos before you go.*

I hit zero sink, and ran back to my thermal, now 10 knots, and climbed to 10,400. I maintained altitude and ran north into the wind for twenty minutes, to Mount Moberly. The lift disappeared, and we continued on at best L/D. And on, and on and on. Uwe urged me to a vertical face where there should be lift, and there was; but it was small, strong, and rough. I figure-eighted, but couldn't force myself close enough to the face. Had I been solo, I would have returned to Golden when I was down to 7000. I asked Uwe to take control, and watched him scratch his way up. Steady speed, yaw string dead centre, steep turns until above peak height — it was wonderful to watch, and it showed Uwe's comfort level was much higher than mine. After twenty minutes, Uwe gave back control (he'd tried every few minutes, but my comfort level in the Blanik wasn't there). Very instructive.

I hit the best thermal of the day, 10+ knots, and climbed to 10,000, and penetrated to Donald. After another Snowbird imitation, I almost took a picture of the turnpoint (I had changed my turnpoint that morning, but took the one I had planned the previous evening). A saying came back to me from Navigation School, "*the seven P's: Proper Preparation and Planning Prevent P_ss Poor Performance (lesson two).*"

Uwe asked if we had final glide altitude, which we had previously calculated as 9000 feet. Since we had it, we set off home into the wind (yup, all three legs...). About four miles out we accelerated to 75 knots, arriving with plenty of altitude. After spin practise, Uwe asked for a spot landing into a stiff, gusty wind, after a 2:45 hour flight.

Lest my friends wonder about the detail herein, considering my legendary memory, we were carrying a barograph, which aided the lengthy debrief afterwards. *Lesson three: you can't learn from what you can't remember.* Familiarity with barographs, especially notching, should be part of the Bronze Badge requirements — why not, everything else seems to be (tongue firmly in cheek).

April 26 Another poor day (forecast to be good). Ceiling about 4000 agl. Soloed

the Blanik, 25 minutes after a 3000 foot tow. Watched the wind shift 180° three times between launch and landing. I watched the young wing runner, Shawn Roberts, do his first solo. The forecast is for rain tomorrow, though the clouds are gaining definition*. After a discussion with Uwe, we decided that if Thursday was a good day I'd have a go at Silver distance. Privately, I suspected I'd be doing Silver altitude and maybe duration instead.

A word about maps. The Calgary VFR chart didn't have the required detail for me, but a Parks Canada 1:200,000 "Banff, Kootenay, and Yoho National Parks 1985" from Selkirk Sports, Golden, is just about perfect, though metric. I did a route study and map prep for a Golden/Spillimacheen/Golden O&R, about 62 kilometres each way. Uwe suggested either Radium Hot Springs (98 km) or Invermere (113 km), but I thought Spilli was a better choice. I drove the route, walking fields I might visit (advice from Don Clark, Bluenose CFI). There are a lot of good fields, though some I had liked from altitude were truly frightening when seen up close. Spilli has a cafe with good food.

April 27 After I packed (Calgary tonight) I got to the field about 11 am. The Phoebus launched about noon, and a sightseeing trip in the Blanik stayed up an hour. I paced. Uwe prepared the barograph, camera, etc. while I tried to calm down. We reviewed the badge requirements. I'd release at 4400 msl (1900 agl) for a 100 foot cushion for the 1% rule on a 62 km flight. I was off at 1325, and was dropped in lift at 4400. I overnotched, flew out of the lift, and scratched for 57 minutes finding only zero or slight lift. I was down to 1500 when I decided to return for a relight. I also found the top suction cup on my mount had come loose, so that had I done the trip, the photo evidence likely would've been unacceptable. My mother says adversity is good for the soul; my soul was in great shape today!

Uwe came over and debriefed the attempt — I should turn more tightly at low level; had I gone away from Spilli there was a huge working cu with a Phoebus under it at great height, and since it was into wind I could have tried it and still had a good cushion of altitude on the return to Golden if it wasn't working; had I chosen Radium, I could have released higher, and scratched less; less of a notch is required... sigh.

The day was still young, and the clouds are good, so I was off again at 1425. I notched less enthusiastically and zoomed into a good thermal. By 1500 I was at 8000 msl and proceeded on course. By 1515 I was over Mount Seven (a major hang glider launch site) at 10,000 feet. By 1542 I was over Parson, 35 km south at 11,000 feet, zipping from peak to peak, rather pleased with myself. No answer on the radio.

* "gaining definition" — a Bluenose Soaring Club term used by eternal optimists to describe a sky condition that any reasonable person can clearly see is not going to improve soon.

Forty kilometres south of Golden, I passed up a 6 knot thermal (others were 10 or greater) in order to make better time. BIG MISTAKE. I seem to have offended the lift gods, who decided to teach me a lesson.

I hit BIG sink, best I've seen ever, over 1000 down, abeam Harrogate (52 km south of Golden, TP in sight) at 1552. I pressed on at increased speed, knowing it couldn't last forever. BIG MISTAKE. By 1558 I was below the peaks, down to 5000 more or less (nothing is really clear in my mind from this event), looking up at the majestic mountains, and called back to Golden that I was likely going to have to land out. No answer. I flirted with the idea of gliding to Spilli and landing beyond; there are vertical cliffs there that *had* to be working. I realized that I hadn't gone beyond Spilli to see landing sites in that area (7 P's! 7 P's!).

I decided to head to a good field to land north, over the houses with the red roofs, into a field about 1000 feet long, with a hump in the middle, 2600 feet asl, if things didn't improve. I was happy to see the huge wheeled irrigation thingee (I hope I'm not being too technical here) still parallel to the fence. I planned touchdown halfway to the hump, uphill. I was angry, I had passed up the earlier lift, and tried to clear my head and concentrate on the task at hand. At least I was familiar with the field from the previous evening.

At 2200 feet agl, I hit good but rough lift (head hit canopy, shins hit bottom of instrument panel) and figure-eighted up a steep slope to the point I could turn above the peak. I can't remember what the lift was from, how much it was, or anything, just that I was extremely happy that it was there. In retrospect, the exercise with Uwe two days before over the cliff at Moberly allowed me to climb away where otherwise I would've had to land. I was reluctant to leave the lift, but saw a nice cu right over the turnpoint. I pushed on in zero sink all the way to Spilli.

Thinking back, I had noticed I was drifting west from Castle Mountain and had corrected for it. I should have thought that sink would be on the west side of the Beaverfoot range, and made every attempt to stay above the peaks. Also, the area near Harrogate is built like a funnel for subsiding air, and I had wondered in passing why those peaks had no big cu over them like all the rest did. Live and learn.

Over Spillimacheen at 1630 and at 9300 feet, I found turnpoint photos easier with a fixed camera, and being centred in a wide, gentle thermal didn't hurt. I took repeated shots to ensure I got a good one, and headed north. I gave the sink hole a wide berth. I called Golden and noticed for the first time the LCD panel was blank. Oh well, aviate, navigate, communicate. I ate a granola bar, drank some water, and ran to areas where there had been lift on the way there. I climbed to 11,500 and penetrated north.

⇒ p24

Soaring the “*Parcours du Combattant*”

Frank Pennauer
York Soaring

DURING OUR TRIP through Western Europe in the spring this year, we visited several flying fields with gliding operations. Among them was Cerdanya airport in the Eastern Pyrenees in Spain near the French border at which Puigcerda Gliding Club is based. There was no flying activity on our short visit, but the airport is certainly located in a spectacular setting at 1100 metre asl on an alpine plateau surrounded by mountains between 2500–2900 metres. The next airport we visited was St-Auban, the National Gliding Centre of France in the Alpes de Haute Provence, the site of the World's in 1997. It is a large airfield with excellent facilities.

Our next stop was the airport of Gap/Tallard, 38 kilometres north of St-Auban. Gap/Tallard is a beehive of aviation activity with parachuting, ultralight and motor flying, ballooning and glider flying. It is also the base of the European Mountain Gliding Centre. The Centre was founded by Roger Biaggi and Jacques Noël in 1992. Biaggi, with some 9000 hours gliding out of his 20,000 hours flying, is one of the most experienced French mountain pilots who developed thirty years ago the famous *Parcours du Combattant*, the soaring highway which runs south from Lac de Serre-Ponçon to the northwest of the Gorges du Verdon. Jacques Noël with some 6000 hours of gliding is very well known in the European gliding community not least for the fresh and original approach he brought to mountain flying instruction.

They operate the Centre with two Janus two-seaters, have their own hangar with fully equipped briefing and class room. Their main course runs for five days from Monday to Friday during March to October and consists of theoretical instruction in the

morning and flight instruction in the afternoon. Each student (maximum four on each course) flies three hours per day on average.

The cost for the five day course which includes fifteen hours flying is FF5100 (about \$1400 Canadian) plus five aerotows at an average of FF180 (\$50) each. The Centre also provides a special introductory flight to mountain soaring on Saturday and Sunday afternoon at a cost of FF600 (\$166). This includes two hours flying with an instructor in a Janus, aerotow, briefing and debriefing and a day membership in the Aero Club Alpin which provides full personal insurance. As we were only one full day in Gap, I decided to take this flight.

I met my French instructor, Yves, at noon in front of the Centre's hangar from where we took the immaculately kept Janus A to the flight line. As the launching operation started only around 1100, there were still about fifteen gliders to be launched by two towplanes, with several self-launching motor gliders taking off between the towing.

We took off at 1400, being towed to a ridge 600m above and seven kilometres south of the field, the starting point for the 140 kilometre triangle we were to do. This was achieved by utilizing ridge lift when possible and thermals coming off the south to west facing slopes. During this flight we reached a maximum of 2800m, just above the highest mountain peaks on the route. We could have climbed higher in the available thermals but my instructor wanted to get me accustomed to fly in close proximity to the mountains and their vertical rock walls and to make use of all available ridge lift. I was flying the glider from takeoff to landing, with the instructor giving verbal advice

on ridge soaring techniques, the possible location of thermals, advising decision heights, when to cross valleys and where to enter the next ridge lift — pointing out other airfields and emergency landing fields along the route.

The instructor only took control of the glider after we had crossed a 15 kilometre valley from a west facing ridge to a south facing slope which did not produce any lift except for a strong but narrow lee thermal with extreme turbulence.

This flying experience and the spectacular scenery of flying along the rock walls and above the snow-covered peaks in close proximity to the icefields, crossing lush green valleys, was the high point of the trip.

The people I met on the field were all friendly and helpful, the atmosphere was relaxed, and the operation worked well without any stress on the individual participant. The airport has all the infrastructure needed including a new main building, with pilot shop, administration offices, bar, restaurant, control tower and....

The area itself has a beautiful landscape with picturesque mountain villages surrounded by the snowcapped French Alps. Good shopping in nearby Gap (14 kilometres) with a typical French farmers' market on Saturday. There are many historical sites to visit and sports like swimming, tennis, golf, horse riding, canoeing, walking and paragliding are available.

One can choose from many hotels in the area in all price ranges from FF100 (\$28) to FF340 (\$95) for two. We stayed in a hotel/auberge three kilometres from the airport in a small mountain village at a cost of FF360 (\$100) per day for two including room/breakfast/dinner with wine. Altogether we had a fabulous weekend with an unforgettable flying experience for myself, and we shall return!

Anyone interested should contact:
European Mountain Gliding Centre,
Jacques Noël, 16 rue Emile Boyoud,
04600 St-Auban, France



The Janus A at Gap/Tallard

Frank Pennauer

1996 IGC Meeting

Hal Werneburg
SAC IGC delegate

THE 1996 IGC (International Gliding Commission) meeting was held March 14–16 at Marly-le-Roi, a suburb of Paris, France, at a French Government Youth Ministry Conference Center. About 30 countries sent delegates to the meeting. The Soaring Association of Canada appointed me in the fall of 1995 as our IGC delegate and through the generous financial support of the Alberta Soaring Council, the Soaring Association of Canada and my employer, Westech Industrial Ltd., I was able to attend this meeting and present the views of SAC members.

The FAI (Fédération Aéronautique Internationale) is the world governing body for aeronautical and astronautical activities. Its members are national and international organizations such as national aeroclubs; in our case, the Aero Club of Canada (ACC) is our official representative at the FAI. The ACC appointed Mr. Robert Clipsham of Toronto as Canadian delegate to the FAI. A number of commissions operate under the FAI umbrella — parachuting, aeromodelling, gliding (soaring), hang gliding, ballooning, and others. Each country's soaring association can appoint a delegate to the IGC through their national aero club.

The IGC had published a meeting agenda in February which I duplicated and distributed to interested parties including the SAC office, Sporting committee, Canadian Advanced Soaring, *free flight* and others. Final discussions to establish Canadian positions were held at the SAC AGM in Regina. The agenda covered quite a number of topics of which the following ones might be of interest to the reader:

Working Group Reports

a) Competition philosophies

A new "free triangle" task concept was introduced involving a free first leg (in both direction and length) with the remaining constraint that the second turnpoint must generate an FAI triangle conforming to the 28% rule. Organizers are being encouraged to try this idea. Also, proposals for new types of tasks which encourage pilots to accumulate maximum flying results (speed distance etc.) on any given soaring day are being sought.

b) Fixed rotation of a limited number of World Gliding Championships sites

This proposal was discussed and defeated but during the discussions several other

points were brought up and noted such as combining only two classes (ie. Std/15m and 18m/Open) for alternate competitions, reducing the number of pilots per class and country to only two, creation of a new combined 18m/motorglider competition class. The general feeling in the working group was that smaller and less complex world competitions are desirable and input is sought from members on how this could be accomplished.

c) Sporting Code rules

This working group had extended meetings (in one case until 2330). Several possible rule changes were under discussion. In any case, rule changes will not become effective until 1 October 1996.

FAI and the Internet

FAI is now on the internet at the following email address: info@fai.org. In addition, a web server is being installed and should be operational soon (<http://www.fai.org/~fai/>).

IGC logo

A new logo is being sought. Five proposals from two people have been received so far. More are invited.

World Gliding Championships

1997 St-Auban, France
1999 Bayreuth, Germany
2001 firm proposals have been received from Poland, Australia and a verbal intent from South Africa.

World Air Games

The first FAI World Air Games are being staged in Turkey in 1997. Soaring is one of the aerospports represented. The 1st World Class Glider (PW5) Championship will be flown during the Air Games.

World Class glider

The Polish manufacturers promise higher delivery rates in 1996 and have been given authority to raise their prices as follows: April 1996 21,500 Swiss Francs and April 1997 SF23,000. If a purchaser places an order for a PW5 with the intent to fly at the World Air Games in 1997, a refund will be given reducing the purchase price to the current price of SF19,200.

Other items from the plenary meeting

The Sporting Code is to be slimmed down to pocket size and will only contain the absolute essentials for the pilot. All other material will be contained in a separate appendix.

The FAI is proceeding to reduce their number of officials considerably. I made strong representations to Mr. Max Bishop, Secretary General of the FAI, regarding SAC's perception of the unfair FAI funding required from Canada. We are not alone in our concerns and the FAI has established a commission to look into the creation of a more equitable funding system.

A group of designers in Germany is working on the development of a battery powered motorglider using technology (zinc/air batteries) from the automobile industry.

The following GNSS flight recorder systems are under evaluation by the IGC GNSS subcommittee: Filser, Peschges, EW. They hope to be able to complete these evaluations by the end of 1996 and have these units approved for use in badge and record attempts.

An interesting simplified scoring system was discussed which awards 1 distance point per kilometre flown plus 1 speed point per km/h achieved. Experimentation by the Austrian Aero Club has shown that a speed factor (V factor) needs to be introduced (up to a factor of 2) in order to approximate the results of present scoring systems. IGC encourages contest organizers to try out this system and report back.

The non-issue of the 18m vs 15m classes reared its ugly head but was beaten back. There will be *no* change in competition classes this year and the only change that may happen down the road is the creation of a combined 18m/motorglider class.

There are several planned international IGC-sanctioned gliding competitions in Europe plus the 1st Austrian World Class Glider Cup in 1996, and the 1st World Masters Gliding Champs in New Zealand in November 1998 (for pilots 40 years and older, must have Gold C). *Contact free flight for more info if interested.*

Once the official minutes of the meeting have been distributed, I'll prepare another report focusing on the approved changes to the sporting code rules plus any other issues which may be of interest in Canada. In addition, I will discuss items which have been deferred for action at next year's IGC meeting plus topics which we feel should be included in next year's agenda. (*The complete minutes are posted on the IGC's home page, <http://www.fai.org/~fai/gliding/>*)

Your input is valuable and highly appreciated. Please contact me in any of the following ways :

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So, you want to buy a fibreglass sailplane

checking under the hood

Aland Adams
from SOARING

YOU MAY NOT FIND IT VERY HARD to choose a sailplane to buy based on your flying skills, pocketbook and advice from instructors and friends. But, evaluating and purchasing a *used* composite sailplane can be more difficult. They are harder to evaluate and it can be difficult to find help. To give you a start, the following are some items I pay attention to when checking out a glass sailplane prior to purchase. I've also included some general advice on purchasing sailplanes.

Finish Check the finish carefully for fine cracks. These should be most noticeable along the wing leading edge and the top and bottom of the fuselage. This is where the fibreglass shells are joined. Extra filler is used to maintain the contour in these areas. Numerous fine cracks indicate a refinishing job is in the offing.

Larger cracks (severe) can indicate something worse especially if found in nonjoint areas. Severe cracks that start in the finish may have propagated into the glass cloth. If so, these will require the glass cloth to be replaced, in addition to removing the gel coat. Severe cracks may also indicate delamination of the skin. You can check for this by carefully pressing with a dime adjacent to the crack. If the dime side of the crack deflects more than the other, there may be a problem. Also, any cracks that form a regular pattern could indicate some kind of structural damage and should be checked out by a professional.

The gelcoat most susceptible to cracking, *Vorgelat*, is used on many German sailplanes. Grobs and DGs have *Schwabamac*, which is less susceptible to cracking. Some sailplanes in North America have been refinished with *Prestec*, which stands up well. PIKs do not have gelcoat. They were built with high temperature curing resins. After curing they were assembled, shaped, sanded and painted. This provided PIKs with a long lasting finish and other advantages noted below. So, if you see cracks on a PIK, wonder about how it has been treated. (*A total refinish can cost over \$10,000.*)

Sometimes while examining the finish, you may notice broad lumps or bumps. You may see these, or they can be found by lightly rubbing your fingertips along the skin surface (chordwise on wings). These bumps may be most noticeable along the spars,

especially on older sailplanes. They are usually a result of the sailplane manufacturer using room temperature curing epoxy. While manufacturers may speed up the cure process by elevating the temperature, these epoxies continue to cure with time and can (and typically do) change shape. Again, PIKs are an exception since they were nearly fully cured when removed from the ovens. The resulting deformations shouldn't pose a structural problem, but can degrade performance, especially if they are along the leading edges or spar. Performance can be improved with careful reprofiling, but again, this is a labour intensive process (read expensive).

Try to determine how the finish has been cared for. For good longevity, composite sailplanes should be waxed at least once a year. While there is a lot of controversy on the type of wax to use, it is best to use one without silicone (to make any subsequent gelcoat repair easier). Finally, find out how the sailplane has been stored when not flown. Hopefully, exposure to moisture has been minimized, and it has been kept in a trailer or hangar. While moisture is the major factor in gelcoat damage, ultraviolet light and extreme cold temperatures are harmful as well.

Canopy A canopy is expensive to replace (\$3000) and will make you mad, surprised and maybe even windblown if a crack propagates across it. Check carefully around the access hole (window) and all of the screw holes near it for small cracks (small cracks grow with stress and become big ones). Stop-drilling sometimes helps but does not always last. Also, cracks may be glued. If done properly this can be successful. Make sure the frame fits the fuselage well. Finally, check that the hinges have not been bent and that there aren't any stress cracks in the finish around them. Sometimes canopies flip open in a gust and cause damage around where the hinges attach.

Wing root fittings Check for fore and aft motion of the wings when the sailplane is assembled. There should be *no* noticeable play. To check this, have someone apply about twenty pounds of pressure fore and aft on the wingtip while you watch for motion at the root. Or, if alone, find a slightly tapered shim and wedge it into the gap at the root, from the bottom, at the trailing edge. Then, apply pressure at the wingtip and see if it falls out. Repeat for the leading edge and the other wing.

Looseness indicates that the wing root rib pins and sockets are not where they were when the sailplane was built. This can be caused by people moving the sailplane by pulling on the wingtips (something you promise *never* to do when you buy a glass bird). Sometimes shimming can cure this, but many times the wing pins and sockets must be removed, the glass around them rebuilt and the pins and sockets put back in — another expensive (\$3–7000) operation.

Main fittings Check the main pin(s), their sockets and other wing fittings. The bearing surfaces are usually not plated and need to be kept greased to keep them from rusting. Rust, or any kind of marring, *is* a problem. Sometimes, these problems can be polished out (with emery cloth). If it's bad, like deep rust or a deep scratch, the offending part will have to be replaced. Most inspectors check this *very* carefully. You may have difficulty getting an annual until problems in this area are resolved. If the main pin sockets in the spars are loose or damaged, repairing them will be expensive. Also, check the attachment fittings for the horizontal stabilizer. These are usually smaller versions of the pin and socket assemblies found on the wings — examine them the same way. Make sure that there isn't any play when fore and aft or up and down pressure is applied at the tip after assembly.

Controls Check all the exposed control mechanisms (look at those under the seat pan as well, if you can). Make sure they are not loose, are in good repair and that the connection points are not worn. Hopefully they have been kept lightly lubricated (with some kind of greaseless product which helps to keep them from attracting dust and dirt).

Check for play in the control system by holding the control surfaces in their neutral position and gently moving the control stick. If the stick moves more than 1/16 of an inch, there could be problems. The owner's manual should have exact specifications. If this stuff is loose, I would wonder if someone has had flutter in the controls (and maybe elsewhere).

Check all of the control surfaces carefully. Look for cracking around the hinges and at the actuation points. Gently tap the surface (especially along the trailing edge), and listen for buzzing sounds which would indicate delamination of the fibreglass. This can be another sign of flutter damage. On most fibreglass sailplanes the weight and

balance of these surfaces is controlled carefully to prevent flutter. If you see signs of repair, try to determine if they were balanced and are within the allowed weight. Because of the criticality of control surface weight and balance, control surfaces often cannot be repaired when damaged.

Finally, check for cracks around the spoiler boxes. These are usually found emanating from the corners of the boxes. This is an area of higher than normal stress, so many sailplanes develop these cracks over time. Since they may be unavoidable, make sure they do not look severe as this indicates the structure under the gelcoat should be repaired. This is usually a several hundred dollar repair.

Landing gear Off-field landings can be hard on the undercarriage. Take a look inside the wheel well at the gear mechanism. (Don't forget your flashlight!) Make sure that the tubes look "normal" (straight, undented). Carefully check the paint for cracks since they can indicate areas of over-stress or bending. Ensure that the gear doors fit snugly when the gear is retracted. Ill fitting doors (slightly open due to interference with the tire) usually indicate something isn't the same as when the sailplane was built.

Radios/instruments Make sure the air-speed, altimeter and compass are in good condition. These instruments are required by regulation so if they are not functioning properly (like a dry compass), the sailplane is not airworthy. Many manufacturers specify dial markings for critical airspeeds (see the owner's manual). If these markings aren't present, the sailplane is not airworthy.

Unless the radio is a 720 channel model, you are probably facing replacing it as the government is slowly regulating the older ones out of existence.

Variometers and flight computers are purchaser-dependent. If you like what's there, its valuable, otherwise you'll probably get around to replacing them eventually. The needle on older mechanical variometers can "float" up. The aging (outgassing) of the paint on the needle makes it lighter. If it's a Winter, it can be overhauled; if it's a PZL, you are out of luck. This costs about half as much as a new one, and you'll be surprised how much better they work.

Plan to replace all the instrument plumbing and electrical wiring. Most plastic instrument tubing takes a set and loosens slightly with age. Some sailplanes have rubber tubing which deteriorates rapidly. Both problems cause leaking and your instruments (especially variometers) can start telling you lies. Most sailplane wiring has been hastily patched together as well, and it's real inconvenient to have your favourite vario and radio quit half way to nowhere. When you replace the wiring, make sure the solder joints are secure and covered.

Finally, try to determine how the batteries have been cared for. This will help you

determine how much life is left in them. Some folks don't properly care for their batteries. So, while they may reach full charge, they die off real fast. Batteries should be stored at room temperature. Gel type batteries should be charged once a month when stored. Periodically, NiCads should be discharged to the point where the electronics don't work properly, then recharged.

Release Almost all sailplanes have Tost releases. These have a specified service life after which they can be overhauled and recertified. The service life of older ones is three years. A recently rebuilt release, properly certified by Tost, has a four year service life. The service life is specified in the Tost manual which should be with the sailplane's manual. The springs in Tost releases become weaker with time and use, and the Tost folks are very serious about having the releases rebuilt.

The sailplane's logbook should have entries for each time a release was rebuilt or replaced. Many aircraft inspectors haven't known to check release service life. Most are learning about this and could require compliance for the next inspection. Out-of-service equipment in an aircraft makes the aircraft non-airworthy.

Oxygen systems Watch for out-of-service systems. Components of oxygen systems have to be tested and certified periodically. Cylinders have service dates stamped into them. Most cylinders have a five year service life if not being used commercially. Other components (even cylinders) have tags when purchased indicating when the items must be serviced. Most owners keep these tags with their owner's manual. Again, installed, out-of-service equipment makes an aircraft non-airworthy. You should not be able to get an annual unless they are current or removed. Note: A8A regulators contain a part which is not made any more. If the regulator fails a recertification test you are going to have to replace it.

Trailers This is usually one of the most neglected glider accessories. In addition to checking the overall state of the trailer, take a look at the tires. Usually tires rot from the sun before they wear out. I've had tires with real good tread disintegrate on the road. For this reason I replace them based on age and I like to have a spare. Another good reason to have a spare is that correct size rims can be hard (sometimes impossible) to find. Find out how the running gear has been cared for. Out of balance tires can do more damage to your instruments than anything else. If you buy a sailplane, make sure this is done before you trailer it home.

For the best UV protection of your sailplane, the trailer should be enclosed. There should be good vents and a solar powered fan (especially in humid climates) to help keep moisture from condensing on the sailplane while it is in the trailer. Well designed fittings and assembly gear make a big difference in the enjoyment of your sailplane. Good and well maintained gear

keep trailer rash to a minimum and will keep crew happy. Make sure to ask the current owner if there are any special tricks to assembling the sailplane.

Parts One important factor to consider is the availability of parts. Some manufacturers are no longer in business. This can make getting parts hard. Landing gears, gear doors, tail skids, wheels, etc. can be damaged on an off-field landing. So if you're planning to fly cross-country you might want to choose a sailplane whose manufacturer is still supplying parts.

Documentation Make sure there is an airworthiness certificate and note who the registered owner is on the registration. If you know an aircraft mechanic, he can show you the AD's in force against the sailplane. Look in the logbook to ensure all AD's are done. Also, try to determine if any other service bulletins have been issued by the manufacturer. Sometimes owners have copies of these bulletins, but I'd contact the manufacturer, dealer, sailplane repair folks and other owners, if need be. If you purchase a sailplane whose manufacturer is still in business, notify them that you own the sailplane. This allows them to send you new service bulletins or other notices as required.

Review the logbook, looking for any repairs that may have been done. Also check for reports of major repair or alteration. If you find these, check up on them by calling the noted repairer and/or others to learn about the extent and impact of the work. Finally, check the logbook to see if the sailplane has a current annual. If the sailplane is not "in annual", or if you are uncomfortable about some aspect of its condition, include getting a new annual as a condition of sale, done by someone you have confidence in and who understands composite sailplanes.

Check the weight and balance. See how recent it is and see if the equipment list matches what is in the sailplane. In any case, you should plan to redo the weight and balance before you fly the sailplane (do you really know if someone didn't put lots of lead in the tail and not properly document it?).

Another thing you *must* do is to double check the sailplane's ownership so that you can get a good bill of sale. (For US registered aircraft, the AOPA will research this for you for a fee and provide you the noted owner on the last recorded bill of sale. Also they will give you a list of any lien holders who have registered with the FAA.) Make sure you can get a bill of sale, title, or other proof of ownership for the trailer. Many states require you to prove ownership before you can register a trailer and get a licence plate.

Insurance You should have your policy set up and in force when the transaction occurs. Sailplane insurance is different from car insurance in that you declare the value of the sailplane. The premium is ⇒ p24

Glider tlc – keeping the water out

Gary Sunderland
from *Australian Gliding*

EVEN IF RAIN is not pelting down where you are at the moment, high humidity and condensation inside our sailplanes can result in all sorts of deterioration. Glider structures of wood and plastics composites are particularly vulnerable to water absorption and damage. Even metal structures and metal controls in sailplanes can be severely damaged by corrosion. The amount of damage due to water penetration and the resulting cost of repairs and refurbishment to our glider fleet is enormous. It must be many times the cost of damage due to accidents, at least as far as airframes are concerned.

In the early days we were justifiably concerned in avoiding any excess water getting into our wooden gliders and attacking the glue lines. I remember an occasion when the hangar roof developed a leak. One weekend we had a perfectly serviceable glider. The next weekend we had a major repair to carry out on the wing which was underneath the leaking roof.

This was a sudden and spectacular result of water damage, but slower and less noticeable damage can occur from incorrect storage. Later I was involved in inspecting an old Kookaburra, which had spent most of its life in a semi-desert area. The airframe was in excellent condition, with very little water staining, and the glue lines were sound. But I was very concerned that the ship was stored in a backyard with only a tarpaulin cover. The owner agreed that this was unsatisfactory but the aircraft was being advertised for sale, so it was a short term arrangement only. The Kookaburra was stored like this for three winter months and, when it was eventually sold, the new owners were not pleased to discover extensive water damage and glue line failures. Bad storage can promote water damage, particularly of glued wooden structures. If a sailplane is under a tarpaulin or a plastic sheet, this can produce high humidity underneath the cover. As the temperature rises during the day this will “stew” the aircraft. *Don't* use plastic or “waterproofed” covers.

All sailplanes must be stored in a dry, well-ventilated hangar, or in a trailer providing similar conditions. Wing covers used to keep off dust and bird droppings must be of porous fabric which can “breathe”. When fibreglass sailplanes first appeared we all thought our airworthiness worries were over. The smooth and hard outside surface looked so permanent compared with the fabric and paint covering on our old wooden sailplanes. They make boats out of fibreglass, don't they? So it must be pretty good stuff to resist water! Little did we know.

We had been used to the paint on our wood sailplanes deteriorating with time and we repainted them every five years or so. Glass sailplanes looked like they would last forever. We now know that most gelcoat surfaces are vulnerable to degradation, surface cracking and breakdown, which can even lead to the cracks propagating into the composite underneath and causing structural failures. The rate of surface deterioration and failure is usually slower than experienced with our wooden sailplanes, but the repairs are much more difficult and expensive. It's not usually appreciated that all paint surfaces are porous. If you look at a paint surface under a microscope you will see that it is actually quite rough and contains numerous cracks, voids, and holes which render it liable to penetration by any liquid. Gelcoat is really only another paint, using polyester resin as a basis, and is similar in appearance, under a microscope.

When water is placed on such a surface, it will “wet” the surface by penetrating and spreading out into the paint or gelcoat film. This leads to chemical oxidation with time, but other forms of mechanical damage can be more rapid and spectacular.

If the surface temperature decreases below zero the absorbed moisture will freeze and literally blow the surface apart. This actually occurred to one type of jet airliner, which experienced chunks of composite skin departing in flight. Many of our sailplanes may operate at temperatures below zero, particularly when wave flying, so it is vital that we keep water out of these structures. There may be a similar effect within the surface layer at high temperatures. Admittedly the maximum temperature of the skin will be considerably below the boiling point of water, but the effect of trapped water vapour will degrade the surface layer as the temperature rises.

All manufacturers of composite sailplanes strongly recommend that external surfaces should be kept clean and polished. This is good advice for all sailplanes, including those of timber, fabric and metal construction. In the case of composite structures, the polish recommended is usually beeswax or a synthetic equivalent (*see the article on waxes on the opposite page*). The purpose of the wax or polish layer is to act as a physical barrier to water.

Some years ago contest pilots noticed that these surface drops of water created a considerable performance loss in rain and many pilots ceased waxing the wings, or even started sanding the gelcoat to provide a microscopic “rough” layer. This certainly reduced the beading, but greatly acceler-

ated the absorption of water and consequent deterioration of the gelcoat. I hope that this practise has now died out and contest pilots are back to frequent waxing of their sailplanes.

A wax surface is quite soft and rapidly oxidizes away. This means that we must frequently clean the surface, re-apply the wax, and re-polish the surface if we are to maintain this moisture barrier. A university investigation into gelcoat problems found that the typical club sailplane was not polished sufficiently to protect the gelcoat. In fact, the practises adopted by most gliding clubs lead to the rapid deterioration of the gelcoat layer, in that the sailplane was usually only cleaned and polished once each year. As a result of such infrequent cleaning, there was no wax protection present for most of the time the sailplane was in service, so that the surface was exposed to oxidation and dirt. This damaged layer was then removed each year by rigorous cleaning and the next layer exposed as soon as the wax disappeared, forming a vicious cycle of rapid deterioration and destruction. To be effective, cleaning and polishing needs to be carried out every few days in service and re-waxed when a lack of gloss indicates the wax layer has gone.

If the glider is wet during cleaning or as a result of moisture in the air, it must be wiped dry at once. Should any excess water actually make it to the inside of the structure, there are drain holes installed to allow it to gravitate away. Old wooden sailplanes have lots of drain holes because there are lots of small compartments inside the structure which need individual drains. Modern shell type structures, as we see in composite sailplanes, have only a few drain holes in their structures; nevertheless, it is just as important that these are kept free of dirt and open.

The edges of any holes in the structure need to be sealed to prevent water absorption into the laminate. This sealing is particularly important for composite sailplanes which have a balsa sandwich, or which have plywood frames, bulkheads, or other parts. Some modern sailplanes use aramid fibres in the composite. These are also susceptible to water penetration, and any raw edges need to be protected by resin.

Finally we should not forget what happens to the sailplane inside its trailer. The sailplane must be kept dry, but we also need to consider how it will survive if it is derigged in the rain, for example. Those drain holes inside the structure will no longer function as intended. We will also have water draining off the elevator and ailerons into the spar webs and lying there for an extended period if we leave it. If a glider gets put away wet, we must remove it and dry it as soon as possible afterwards. And don't forget to dry out the felt in dolly supports very thoroughly before the glider is put back into the trailer. Dampness in these pads is the number one cause of gelcoat cracking. So, safe flying, and keep 'em dry. ❖

Glider tlc – an opinion on waxes and polishes

Tom Knauff
from NZ Gliding Kiwi

WAXING A FIBREGLASS GLIDER is very important. Sealing the surface from moisture and dirt will absolutely prolong the life of the gelcoat. We wax our gliders twice a year. (There are some theories about performance gains in not waxing your glider. Not waxing will create finish problems that are very expensive, and it is unlikely you will ever notice any performance difference if the glider is waxed or not.)

The very best wax to use is a pure carnuba wax. Interestingly, this wax is very difficult to find. We have called all the wax companies and have found none that do not have polymers and/or silicones added. Some cans of car wax have a statement such as "100% Pure Carnuba Wax." We phoned the company and they verified the wax in their product is pure carnuba wax, but it also contains 40% polymers! Polymers and silicone that penetrate the glider structure can make it difficult to obtain a good repair if you damage the glider.

We had extensive conversations with a representative of "Mother's" wax products. They have recently come out with a "Natural Formula" that has the least amount of polymers or silicones of any automotive wax product we know. This product is easy to apply by hand, and is a possible compromise. We are using it on our Ventus 2. "Wonder" products seen on TV that give a lifetime finish, or resist laser beams and fire,

should never be used on your fibreglass glider. "Stahlfix", a German product for polishing the glider and removing tape residue and bugs, is simply the very best product to polish your glider before waxing.

The carnuba wax should be applied with the aid of a high speed polishing machine. We recommend a Makita variable speed polisher for amateur use so you have less chance of burning the finish or doing other damage. Hire an automotive finisher for a few hours to polish your glider. He has the skills and tools to do the job and will probably do your whole glider for \$50 or so.

For cleaning canopies, nothing beats soap and water. For the final touch, you might try a product that makes the canopy static electricity proof. Static electricity attracts dust which then cause scratches when you clean the canopy. We like a product called "Miraguard".

There are paper towels specially made for cleaning canopies. A normal paper towel should never be used as they can scratch the plastic surface. The "EX-L" nonabrasive tissue is also good to place in the leading edge wing pad on the bottom of some trailers to keep dirt from damaging the wing. Finally, we caution you not use acetone or other harsh solvents. You can clean tape residue with naphtha, or 3M makes a special tape residue solvent available at better hardware stores.

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“Simplifying gliding instruction to keep your students happy”

Notes from a talk by **Derek Piggott**

DEREK ASKED THE QUESTION, “Why don’t students think that they are making progress after 10 or 15 flights?”

Many students drop out before solo at this point when some discouragement sets in. The student can’t see he’s making progress during a “learning plateau” of gaining skills experience rather picking up new ones. Therefore, instructors should not be too enthusiastic about jamming too many new skills into early flying lessons. The instructor should deliberately hold back on introducing *planning* skills until later on in the learning process.

Training should occur in two major phases — physical and mental flying skills:

Phase 1 Learning to fly, handling the glider, coordinating turns — the *physical* flying skills. The instructor can make all the judgement decisions during this period, telling the student where to go, when to turn, how high he is, etc. Handling/coordination requires training of muscles and will take *time*. Aside: flying straight and level is *not* an early skill, it only comes after coordination has been memorized by the muscles.

One may make the objection that the student isn’t going to be able to make decisions later if he is being told what to do all the time!

The instructor can be briefly saying *why* he is telling the student to turn here, etc. Some early decision-making processes will be absorbed subliminally, so to speak, without overloading the student who is busy enough trying to make the glider behave. The point of transition should be about the time the student has developed the coordination/motor/muscle memory skills to flare the glider smoothly at landing without ballooning, etc.

Phase 2 Learning to plan — where am I?, circuit judgement, proper heights/speeds, situational awareness — the *mental* flying skills. Keep the interest by having something new to teach throughout the training, even during the later experience building time. Aside: never tell the new student that this is the flight we are going to *stall* the glider! He will be a wreck anticipating what he has grown up to believe is a life threatening event. Sneak into it with the slow flight demo, and after a stall buffet and back pressure release, you can say, “Guess what, you have just stalled the glider!”

Major thoughts about teaching the circuit

The big problem for the instructor is to trying to stay one step further along in the circuit while getting the student to make decisions *and act* right now.

- Circuit planning — the instructor should not talk too much. Watch circuit progress, give the student time to make a decision (Tell me when you think we should turn base?) — and then make sure that he *does* something — he ACTS — turns planning into flying and takes personal control of the situation. Always make the student act on his decision (unless it is to kill you, of course!).
- The “Standard Circuit” — Once the student has demonstrated that he can fly the standard club square circuit at thus-and-so heights, only *rarely* do it any more! Drive home the idea that the whole point of a circuit is to make that turn onto final at good height/position/speed. Now, always give the student something to decide on every circuit — a situation to solve. Be on the wrong side of the airfield, be dead overhead at 600 feet, be at the normal circuit entry point but practising turns and have him concentrating on a couple of extra good ones so he is then low, be at a point after a lesson that only a downwind landing is the *reasonable* option, etc.

Without telling him explicitly, you are giving the student the necessary judgement skills to not kill himself or wreck a glider on his first solo screw-up or inadvertent outlanding!

Derek is now teaching a modified square circuit where there is a diagonal on the base turn ‘corner’. The big advantage is that the touchdown point remains easily visible, the that-looks-about-right angle doesn’t get too low in the corner, and there is much less likelihood of getting too low or too far back in the circuit in windy conditions.

And finally, for the towpilots, give them a spoilers-out situation at a safe height to experience the result. ❖

Comment from Ian Oldaker

Derek Piggott has some interesting thoughts about keeping up the student’s interest, and these were discussed at his seminar at the Ottawa AGM in 1995. I can only agree with what he advocates here. However, he

is now adding some comments about the instructor making all the judgement decisions in Phase 1.

I think it is generally agreed that to get students thinking about “planning” and then applying this throughout their flying, the instructors need to introduce the students to the concepts of pilot decision making (PDM) very early on. The law of primacy will say that this is what we should be doing! I don’t think it is sufficient to let the student absorb this process subliminally — by the time they reach the level of being able to fly most of the flight, it is too late to really effectively introduce PDM; they haven’t had to use it early on, so why now? It must be used by the student from the first flight! Hence we advocate an introduction to the SOAR technique for PDM early in a student’s training, and this is covered at our instructors courses. Other instructors should take note!

The holding back of some training should be done carefully as many students could get bored and/or frustrated with doing the same thing too often without being taught a new skill (instructors should beware of insisting on too much accuracy early on, what the student needs to do is practise and to find out the sailplane’s response).

It is interesting to note that many students suddenly seem to ‘click’ with their flying abilities, and then advance really quickly. It is at this stage that the instructors should be asking for better performance, for example a closer control of airspeed during the approach. If one wants to delay something, a good lesson to hold back is aerotowing, for example. Then the instructor can discuss the upcoming lesson during the early tows, and can “teach” many aspects of judgement training and pilot decision making, or height judgement, lookout technique, etc. No time need be wasted! This I would prefer.

Thoughts about teaching the circuit are good, and reflect the discussion of the 45 degree cutoff of the base leg that has now been going on for two years in various countries. I have prepared an article on aspects of flying the circuit that addresses the question of the 45 degree cutoff, and I think you will find the arguments interesting and in agreement with Piggott.

A very good suggestion is to demonstrate the “spoilers out” situation on aerotow.

Not only does this give the tug pilot the feel of the terrible climb rate, but will allow him to demonstrate the rudder waggle — this is not an easy demonstration to do well, and we have had a number of glider pilots releasing when they see this signal, with dire consequences. Hence a demonstration to the glider pilot is becoming almost as vital a demonstration as for the tug pilot! I recommend it also be done during regular training for the wing waggle signal; again not that easy for tug pilots to give cleanly, unless practised. ❖

When are you most at risk?

Part 2 – Premature Termination of the Tow

Tom Knauff

HE WAS a grizzled veteran of many combat missions. With a mighty rush and roar the steam catapult shoved his jet fighter at a terrific acceleration past the end of the carrier flight deck. But this time the acceleration was not strong enough — the fighter was too slow and was dropping. One and a half seconds after it cleared the flight deck, the fighter would be in the sea. The canopy was seen to barely precede the rocket-powered ejection seat with the pilot. Seconds later a helicopter plucked the pilot from the cold sea...

That evening, a new carrier pilot asked the senior officer, "Everything happened so fast! When did you decide to eject?" The officer paused slightly and then replied, "I made that decision eighteen years ago."

The pilot survived because he had mentally gone through the scenario many times. He fully expected an emergency to occur some time, and had a specific plan of action in case — no — *when* it finally happened.

Previously we identified the three major instances of fatal glider accidents: Premature Termination of The Tow (PT3), low altitude thermalling, and landing patterns are the major culprits. The wise pilot will be aware of these high risk events, fully expect an emergency to occur some time, and have a specific plan of action for when it happens. Accident statistics indicate upwards of 20% of all fatal glider accidents occur during the first few seconds of flight. Let's look at early tow emergencies and see what can be done to avoid an accident.

What are the odds of an emergency occurring on any one tow? A towplane uses full power to climb, then no power to glide back to earth. Full power – no power – full power – no power – for thousands of tows. It rarely flies straight and level. A winch engine or car tow is similar. Failure of some critical part, operator error, or running out of fuel are only a few of the many things that can, and do, go wrong. It's naive to believe you will not experience a failure during the launch. What are the odds of something happening on your very next tow? The odds are exactly 50/50 — either it will happen or it won't!

The frequency of tow emergencies emphasizes the importance of emergency training. During flight training there are relatively few opportunities for the instructor to present realistic emergency situations. Early tow emergency instruction is excellent training that emphasizes lifesaving techniques such as plans of action, proper use of checklists, stress management, aircraft performance, environmental considerations, human response, and more.

How rope breaks are taught at Keystone Gliderport

Rope break emergency training occurs shortly before solo in calm conditions. The student pilot has read the chapter on launch emergencies in his text book. The first practise emergency occurs at an altitude that allows a landing ahead on the runway. Most pilots will not respond well to this simple emergency. The experienced instructor will allow the student to control the aircraft as long as possible, but will not allow any risk that may result in an accident.

A long discussion (about 45 minutes) on how humans respond to an emergency immediately follows the flight. Major emphasis during this discussion is expecting an emergency on every launch and having a specific plan of action. Additional discussion items include other emergencies one must be prepared for, aircraft considerations (where is that release knob when you really need it?), and environmental problems (wind direction, possible turbulence).

The second launch is another emergency at a height that permits a 180 degree return to the airfield. For aerotow training, this will occur slightly above 200 feet for most training environments. The student usually does not perform satisfactorily. Common errors include failure to immediately lower the nose of the glider to a proper gliding attitude, failure to execute the plan of action quickly, failure to keep the yaw string straight, failure to attain and maintain proper airspeed, and failure to establish a proper bank angle.

After a critique, the next launch repeats the last one, and the student usually performs within limits. Three emergency launches have now been made. Can you guess which flight is the most important? Would it be the first one since it is often the first simulated emergency during flight training? The second, since the result can be so tragic if the pilot performed improperly, or perhaps the third when the pilot has finally realized the importance of being fully prepared at the beginning of each flight?

The most important flight is *flight number four*. On flight four, when the glider is passing the magic 200 foot altitude, the instructor leans forward and says to the student,

"What are you thinking right now?"

The student has just experienced three emergency rope breaks, and is fully expecting another rope break. The student is primed,

ready to act with a logical plan of action. The student knows exactly what to do. This is how every pilot should feel at this moment from this time forward.

At the beginning of every launch, the pilot *must* expect an emergency to occur, and have a specific plan of action in case it does.

Plans of action There are often signs of potential trouble before the flight begins. Frayed tow rope, oil on the towplane, strong winds, turbulent conditions, not feeling well, distractions — all give the pilot reasons not to attempt a launch. Unless you are being called to defend the country against an invader in your high performance, heavily armed glider, no one is forcing you to go!

Most pilots use a written and/or a memorized pre-takeoff checklist. Adding the letter 'E' to the end of the checklist reminds the pilot to be prepared for a possible emergency and to have a plan of action. Wing runners can play an active role in flight safety by reminding the pilot just before takeoff, "Are you ready for an emergency?"

If an emergency occurs at the earliest stage of launch, the pilot must be prepared to stop the glider before running into something. After takeoff, the pilot needs to lower the nose to avoid a stall, and to effect a landing on the remaining runway. It may be necessary to avoid a disabled towplane. The towplane should turn to the side of the runway to allow room for the glider to pass.

A higher height may require a landing on an intersecting runway, or a field beyond or beside the airport boundary. Finally, higher still, the glider may be able to safely perform a 180° turn to return to the airport. It is generally accepted that 200 feet is the minimum altitude to perform a safe 180.

Before launch, a pilot must perform a proper pre-takeoff checklist. When it's completed, the pilot's attention should be completely directed towards a potential emergency. A specific plan of action should be formed for each moment of the launch. Should an emergency occur, the pilot should execute the plan of action with no hesitancy.

Many instructors teach their students to announce critical points during the launch. Some instructors only teach to announce the critical "200 feet" aloud. The first response to an emergency will always be to lower the nose of the glider to a normal gliding attitude to prevent a stall.

The bottom line is this — *emergencies at the beginning of the launch are common*. Pilots should fully expect an emergency at any time during every launch. They are so common it should be a surprise if the launch succeeds without incident, and every pilot should expect them and have a plan of action ready to execute.

There is no reason for anyone to die during a glider launch. ❖

Circuits and landings

some (new?) thoughts

Ian Oldaker
Chairman, FT&SC

WHEN APPROACHING over a hazard, have you noticed that it is typical for pilots to concentrate on the hazard, not on the 'aiming point'. These notes are written to add to those you may have received at an instructors course, and are directed not only to the instructor but to every pilot. I hope that you may recognize some of the points yourself so you can plan ahead for the next time the situation appears and avoid running into difficulties when making a landing at your club or away from it in some unfamiliar farmer's field.

Why did the fellow hit the windsock when he had the whole open field to choose from? Because it grabbed his attention. Why did the fellow hit the wires at another location? Because ... same reason. How does this relate to flying the circuit and final approach, you may ask? Well, there is the normal human tendency to land shorter and shorter to avoid pushing gliders back to the launch point. This can occur especially to high-time pilots who turn onto their final approach, then use the brakes (spoilers) so as to land *as short as possible*. Pilots will mention by how much they cleared the trees/buildings, so the hazards *were* tending to grab their attention!

The tendency to do this results in the 'aiming point' being moved ever closer to the airfield boundary, with the dive brakes used as a *landing control*, not as a glide path control, as should be done for a correctly flown approach. In a correct approach, the pilot should be using the aiming point to adjust the glide path, flare over the aiming point, then land slightly beyond it.

How should we be flying this final approach, and how should we be teaching correct glide path control? The *aiming point* should be the point of attention when we are in the circuit, especially when opposite the field on the downwind leg of the circuit pattern. We should be using the aiming point to plan when to turn onto final (a motherhood statement really, but it deserves repeating from time to time!). Teach this turn to be made initially with brakes closed (early students can't really judge whether they are high or low before they turn final for some number of flights yet). Having made this final turn, level the wings and then establish a stable, well-controlled descent at a constant airspeed.

Now *establish an 'overshoot'* condition before opening the dive brakes. Actually what we wish to see is that we do have some

height to spare, that we are in fact going to overshoot slightly. Obviously an undershoot is not what we are looking for but, by keeping the brakes closed, we are at least reducing the risk that we will undershoot if the remaining height is on the marginal side. This exercise requires practise. It is worth mentioning that recognizing an overshoot is actually easier than recognizing an undershoot. By keeping the brakes closed during the turn we are also reducing the risk that, if flying too slowly, we will induce a stall of the lower wing — not a good idea at such a low height as a spin entry could quickly develop. If the brakes are opened immediately after turning onto final, it will be much more difficult to teach proper glide path control, because the student will learn that the brakes are opened automatically now as a 'landing control', not in response to the desired overshoot! Chances are they will be low one day and will close the brakes far too late, as they have not learned how to judge the glide path properly. Panic, even mild panic with cessation of decision making, tunnel vision and so on, may set in and they won't be able to react rationally.

The need to monitor the ASI can't be emphasized too much on final, as wind gradients have to be traversed, and the glider's (pitch) attitude close to the ground at the faster approach speed appears different than when higher up at altitude, so **MONITOR THE ASI OFTEN WHEN ON FINAL**.

The *aiming point* must be used for its proper intended function, that is to judge an overshoot and/or undershoot, and to teach proper glide path control so as to land beyond the aiming point.

A further observation might be made that at locations where there is a noticeable slope to the ground approaching a runway, pilots might have difficulties judging their final glide, flare and touchdown. This may be particularly so at an unfamiliar airfield such as at a wave camp, or even during a landing into an unfamiliar field. If a pilot is low over 'low' ground when approaching the field boundary, the runway will appear rather high up and so a landing on the upslope is almost inevitable. Care is needed to maintain speed as the apparent horizon will be higher than the actual horizon, and the tendency to fly too slowly will increase! Since hazards (such as trees or wires) at the boundary are a bit close, the pilot will not be concentrating on the proper glide angle and its control, but is instead trying to avoid the trees! This all adds to the workload.

To aid yourself when on downwind, choose the aiming point further into the landing field, then it will be somewhat easier to maintain proper glide path control, because the hazards are less obvious and will not be a distraction. With the aiming point moved up the runway a bit, this should then give adequate clearances even for a person who gets low on a longish final. By starting with adequate height, you will reduce the stress under these conditions, and if you see that you are eventually going to overshoot, wonderful! Even if you are a bit fast, you may hit the fence at the far end of a (short) field much more gently than you will hit the near end if too low! Try it ... not the fence hitting, but moving the aiming point further into the field!

What about winds and how to penetrate against a higher than normal wind? Of course it would help if the technique of increasing speed to penetrate against a wind is taught over an unobstructed runway! However, bearing in mind that we do teach this when approaching a fence or other hazard, the pilot must be taught to monitor the ASI and to then fly 'over the hazard'.

Another useful technique to adopt, even in light winds, is the 45 degree cutoff when flying the downwind leg. The accompanying figures show this. Figure 1 shows the typical square circuit pattern and the problems that occur when a pilot extends the downwind leg beyond point D to point E. "How many instructors have experienced the 'leans'", says Chris Rollings, the UK senior National Coach, "trying to urge the student to turn NOW!!" It was he who came up with the idea at the OSTIV Seminar at Alleburg in Sweden a couple of years ago, and we who tried it there were convinced of its merits.

The 45° cutoff of the base leg 'corner' is a relatively new technique and it has been adopted now in some gliding organizations and it warrants consideration. The 45° cutoff is flown when the pilot who has just moved past the aiming point on the downwind leg, point C in Figure 2, turns at D toward the runway with a 45° turn. Many pilots who have been flying some years say they use this type of circuit more often than not anyway! The turn at point D has the effect of keeping the glider essentially at the same distance from the aiming point, AP, while allowing the pilot an excellent view of the runway. Note the instructor in the back seat can also really see the runway, compared to when at E or E' in Figure 1.

When seen from the cockpit, this gives a much safer feeling to the circuit because the pilot is not flying further away from the runway when compared to the usual downwind leg, and the instructor no longer gets the leans. While flying this cutoff, you will be able to more easily see any strong wind effect and can then compensate for this in deciding when to turn onto the base leg. In the case of flying on downwind past the runway over featureless terrain such as trees

or large prairie fields, a pilot can get pretty low and not realize it until he or she turns onto base leg. Then it is getting a bit late, especially in a strong wind! Look at the angles in Figure 3, and consider what the runway must look like when you turn at E and now get a good look — it can seem very far away! At the 45° angle (as I say again, from the rear seat of many two-seaters, the view backwards is somewhat restricted) the pilots have a far better view of the runway and aiming point and will

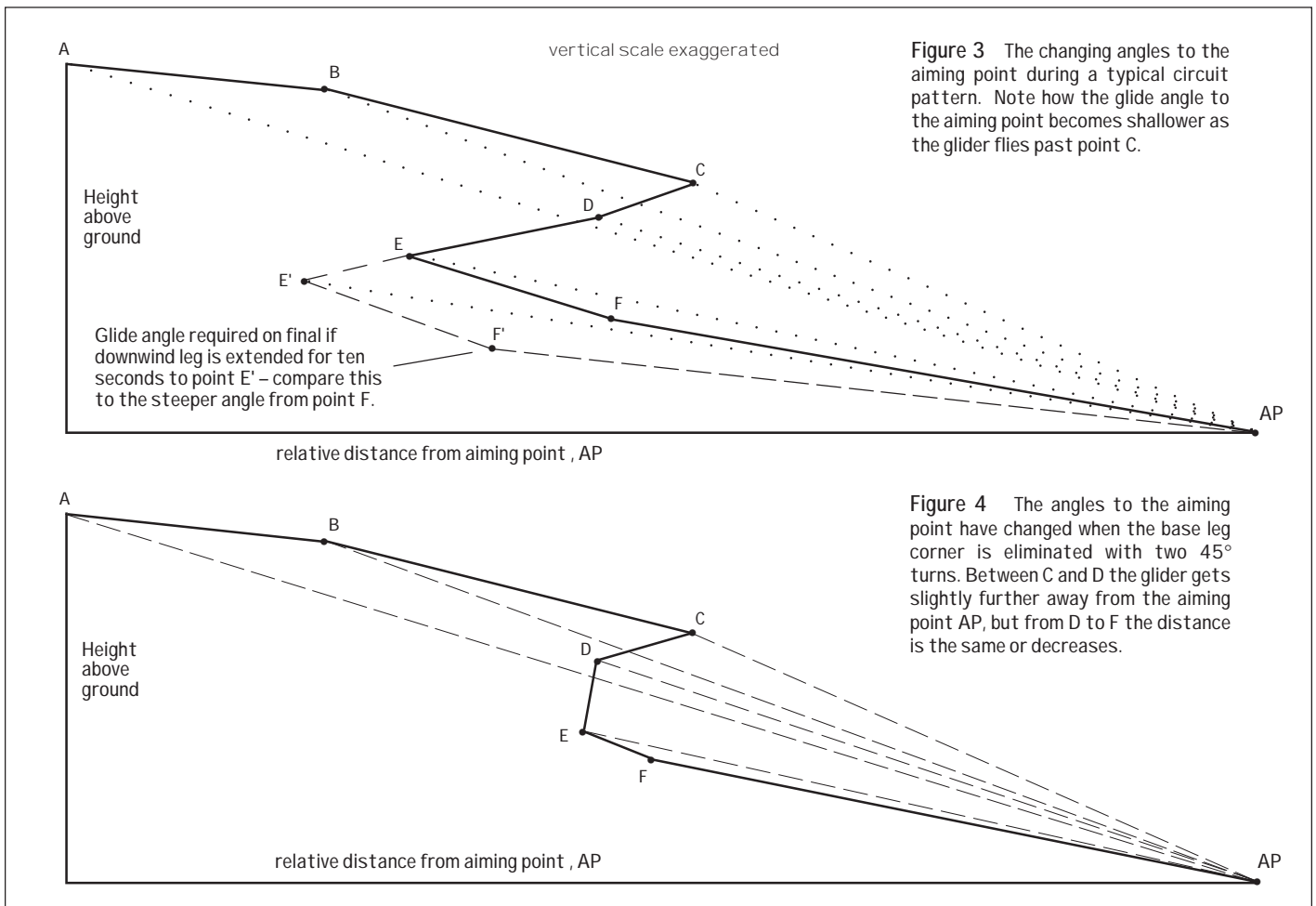
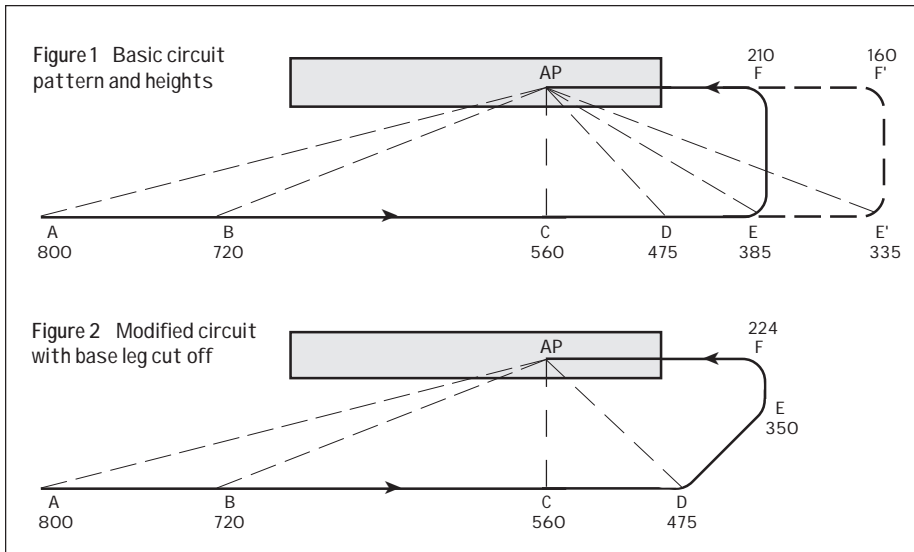
be able to better judge the effect of the wind. Also we can turn onto the base leg or cut in early to make the final turn at any moment, if we judge we are getting low. Figure 3 shows the height and distance to the aiming point from the various points in the circuit. Note the distance to go increases from C to E, and the required glide flattens! If a pilot extends the downwind by ten seconds, as shown from E to E', the final glide angle can really suffer. Figure 4 then shows the effect of the 45° cutoff, which is to pre-

vent the distance-to-go from increasing and at the same time keeping the final glide angle very comfortable and therefore achievable even in strong winds.

Having flown a good circuit and approach, this should end with a well held-off landing so that the main wheel and tail (wheel or skid) touch at the same time. A 2-33 should not be held off this much; the tail will be too low, and the glider will be awkward at touchdown. (A point here in giving glider transition training to taildragger power pilots: they should be shown the correct *held-off attitude* before takeoff and be reminded to adopt this as they flare.) On all gliders the tail skid or wheel should still be just off the ground at touchdown, and though a tail-first touchdown will sometimes occur, this is OK.

As instructors, we should be teaching all our students to recognize the correct held-off attitude before takeoff, then reminding them as they flare before landing. Of course the glider should be slowed down as much as possible in the air before the touchdown.

Reading about the circuit and landing in our manual *SOAR and Learn to Fly Gliders* will add to the above, by discussing the different ways of judging heights and positions in the circuit. Instructors too will find this useful, and will be reminded of what students are reading!



hangar flying

NEW WINGLETS FOR OLD LIBELLES

Between 1969 and 1974, Glasflügel built exactly 600 Standard Libelles. For the first time, it was Eugen Hänle who supplied such a large number of composite sailplanes of one type, and now for the over 500 remaining owners worldwide, a value adding item is offered — winglets — especially developed for this famous old sailplane. After two years of struggle, German LBA approval for this modification has been received, which is indeed an improvement for the Standard Libelle.

Completely built from carbon fibre reinforced plastics, the winglet (with skid) weighs exactly the same as the former straight original wing tip including the small wheel. As the additional winglet mounting rib, which has to be fitted to the tip of the wing, increases the weight by about 200 grams, the mass of the wing hasn't been changed significantly. Only the latest technologies in laminating and the knowledge how to design such components made it possible to keep the weight almost the same.

Their advantage is the better handling in takeoff, in circling flight and on landing. Particularly at low speeds, like the beginning of the ground run and during the landing run, the winglets improve the aileron response of the Standard Libelle to such an extent that its tendency to drop a wing hardly exists. Also when circling near stall speed the pilot feels he has control over a completely different sailplane compared to their 'old' Libelle. The reason for these more gentle and pleasant flight characteristics is the better stability about the vertical and longitudinal axes which the winglets provide. Especially on winch launch the pilot is able to feel and see the new flight behav-

our, and the former nervous transition zone between lift off and steep climb has gone.

There is no loss in performance at speeds up to at least 160 km/h (100 mph or 85 kts) TAS, proven in a number of comparison flights. Because of the very low additional mass at the wing tip, there is also no risk of flutter for this 'old' design, so the original speed envelope of the Standard Libelle is still valid.

A complete kit is offered for about DM2500. The effort in installing them will depend on the manufacturing date and the tools available. Ordering the kit in winter time has the advantage of a shorter delivery. Contact: Peter Selinger, ph 49-711-4790848, fax 49-711-474636.

CANOPY CRACK REPAIRS

A minor canopy repair, such as stop drilling the end of a crack in the acrylic plastic, is not such a simple matter. Certain techniques are required to prevent further damage to the soft and brittle material and avoid even more cracking.

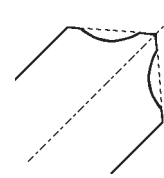
To start with, we need to establish why the crack initiated in the first place. If it is an old design, the fault may just be from an overtightened screw. Check the others and caution all your daily inspectors against overtightening canopy screws. The canopy of a modern sailplane is liable to crack from a corner of the direct vision panel through an adjacent screw hole. This is the result of a known type of defect, resulting from the rectangular shape of the opening. The design is certainly very bad, but nevertheless standard in most modern sailplanes. The failure may have been promoted by an overtightened screw again, or by excess

load. Check that the window slides freely in the rails. The rails should be removed occasionally, cleaned of grunge, and lubricated to prevent sticking.

Next we need to make a hole at the very tip of the crack. The best method is to heat a 1.5mm drill to a dull red colour and pass this through the canopy. This not only produces a small hole, but it anneals or stress relieves the plastic around the hole and consequently greatly reduces the probability of future cracking. If we do not have access to any means of heating, or if such an operation is hazardous, which is a normal situation in a crowded hangar, then we can effectively stop drill the crack.

The normal drill bit, which is shaped to cut metal, is not suitable for drilling plastic, as it will dig in and promote micro-cracking. These will result in visible cracks sooner

or later. A bit for plastic can be made from a 3mm metal bit by grinding off the cutting edges. Carefully press the bit against the radiused corner of the grinding wheel, without touching the centre or the outer edges. This will produce a drill bit shaped to the sketch shown, which will cut on the outer edges.



After drilling the stop hole, the crack should be treated with an acrylic adhesive such as "Acryfix". If possible the area should be reinforced inside with an acrylic sheet doubler about 30mm wide attached with adhesive. This reinforcement is essential when the canopy has been weakened, such as a typical crack from a direct vision opening. It is usually not worth getting involved with extensive repairs, veeing out the crack and trying to polish it out. Even when carried out by experts the resulting area of distortion is worse than a narrow crack.

ANOTHER SPIRIT WING FAILURE

I was called over to the Soarcraft hangar at Mountain Valley Airport in Tehachapi for a little bad news. Rick Sergeant was assisting Tom Riley perform a wing bending test on Tom's Spirit, when the wing failed at about 5g's. This is the fourth Spirit or Falcon wing bending failure that I have heard of and I am convinced that the design needs to be carefully reviewed. Tom had done beautiful work and all of the damage occurred in areas that had been done by the factory.

There is no excuse for failures in wing bending below limit load. JAR-22 requirements that govern most new sailplanes in the world require 5.3g minimum limit load at the positive high angle of attack loading situation. A minimum safety factor of 1.5 is required for ultimate loads and the structure must be able to support ultimate loads without failure for at least three seconds. Experimental homebuilt regulations do not require meeting JAR-22 regulations, but it only makes sense that the basic structure should be able



to carry normal sailplane flight loads without failure. If you own a Falcon or a Spirit, do not fly it until this is resolved. We want you around. We will keep you posted.

Sailplane Builder, Dan Armstrong

PW5 MISCELLANY

- The US "World Class Soaring Association" will expand internationally under the auspices of the IGC.
- PZL Swidnick, the factory currently building the PW5, will be allowed to increase their price to 21,500 Swiss Francs this year and 23,000 next year. Eventually there will be enough competition that the price won't need to be controlled. Swidnick has orders for more than 260 gliders and there are a few in most gliding countries.
- Lancair, the large and successful kit builder in the USA, has expressed interest in manufacturing PW5 kits.
- A major Chinese aircraft manufacturer, *Xian*, with an US sales/administrative/technical partner, *Apeks*, have jointly established a certification and production plan for large scale manufacturing of the PW5 which is to be up and rolling in 1997.
- Scandinavian Airlines is actively sponsoring World class events in that part of the world. SAS is offering a \$US2000 prize for the first 300 kilometre flight in a PW5 by a Scandinavian pilot and \$8000 for the first 500 kilometre flight!

LOOSE TAPE IS DANGEROUS!

During an aerotow of a Twin Astir, almost full forward stick was required to maintain the correct attitude. The tailplane was inspected but nothing untoward was noticed, however the problem recurred later. This time it was seen that the gap seal tape along the hinge line was partially loose for 1/2 to 2/3 its length on the front edge – thus lifting and causing a separation of the airflow over the elevator. Removing the tape solved the problem.

from South Africa Soaring

OPEN CIRRUS RELEASE CABLE

My partner and I spent two hours replacing the tow release cable on our Open Cirrus. We twigged to the need for this during the winter while refinishing the scratched underside of the fuselage nose. With the fuselage upside-down, we decided to remove the landing gear and Tost hook for general inspection. All appeared okay but while reinstalling the Tost, we pulled the release cable an inch or two toward the wheel well and noticed a smidgen of rust powder come out of the plastic guide tube.

On reflection we decided the prudent thing to do was replace the cable. This has been done. We laid the fuselage on its side and went at it. The critical part was ensuring the correct cable length allowing for the bits around the thimbles. One end you can do

before feeding the cable from the cockpit around the pulley and into the guide tube. The other end has little working room, as you will find out. One needs the dexterity of a violin virtuoso when replacing sleeves, bolts and safety nuts at each end – particularly the cockpit end. We suspect that over the years a wet wheel has regularly tossed water down the guide tube (which is perfectly placed to receive it).

We replaced using a 3/32" stainless steel stranded cable that has a 900lb breaking force. It was well worth the effort! The original cable appeared good at both visible ends but in the tube section it had corroded to the point that many metal strands had broken. I would expect that a break under load could easily have happened. This would have been of little consequence on our winch launches because of automatic back release, but on aerotow – not to be imagined. We will be reporting this to Schempp-Hirth as a matter of course.

Charles Yeates

"DIRTY WINGS" REDEFINED

At the last European Club Class Championship, it was found that some pilots had placed sand in the wings of their gliders to increase the wing loading at good soaring conditions. The IGC decided by large majority at their last meeting that all gliders must be flown within the limits of their C of A and that therefore sand ballast in the wings is forbidden. Organizers were asked to take appropriate measures that nobody will infringe this rule again.

MASSIVE SPORTING CODE HAS BECOME A PROBLEM

The president of the IGC expressed great concern at the March meeting that the explosive increase in the volume of Section 3 of the Sporting Code due to the introduction of GPS rules and the technical specifications was causing grave difficulties at the national aero club level in getting the information distributed to – and understood by – the pilots and Official Observers who have to apply the rules in practise. Further problems will be caused by the numerous small changes decided this year, only one year after a major revision of the Code. In most countries the Code has to be translated, and some delegates declared that they had more or less given up translating, as each new version was out of date by the time it was printed. To meet these problems two main lines of policy were proposed:

- 1 Between major revisions the Code should be "frozen", allowing only correction of obvious mistakes or absolutely essential changes.
- 2 The next major revision should involve a radical simplification: improvement of the logical structure, reduction in volume by removal of redundancies and explanatory material (the latter could be included in a

Solaire Canada

Ed Hollestelle (519) 461-1464 p & fx

| | | |
|-----------------|---------------------------------------------------------------------------------------------------------|--------|
| LX-20 | The new FAI standard for stand-alone GPS data recorders | \$1995 |
| LX-100 | Basic audio vario with averager | \$495 |
| ATR720A | 760 chan VHF with mounting tray and wiring harness | \$1695 |
| SHM1010 | Boom mike and wiring (as installed by most glider manufacturers | \$150 |
| LX-4000E | S-RAM final glide computer or connects to any GPS (with NMEA output) or connects to LX-20 data recorder | \$2795 |
| LX-5000 | The ultimate GPS/final glide computer system with moving map display and FAI data recorder | \$5995 |

separate document modelled, for example, on SAC's "Badge and Record Guide", a copy of which is going to the Sporting Code editor as a sample).

The ensuing discussion showed general agreement for simplification of the Code, but less readiness for freezing it, at least in the present situation of rapidly evolving technologies. The IGC should not, however, react to every trifle with a rule change. The matter will be treated further at the next meeting, and delegates are urged to discuss it at home and bring in proposals.

FAST, FAST RECORD CLAIMED

A Discus pilot, Jim Payne, is claiming a 100 km triangle world speed record of 235.3 km/h(!) for a flight completed out of California City, CA on 22 March. The current record of 195.3 km/h was set by Ingo Renner in December 1982.



'96 Coming Events

23 June - 4 July **1996 Canadian Nationals**, Red Deer, AB. Contest organizer: Randy Blackwell (403) 594-2171.

14 - 20 July **SAC Western Instructors School**, Prince Albert, SK. Will fly the K7 and Blanik employing winch and aerotow. Course director: Terry Southwood (403) 255-4667.

22 - 26 July **3rd Annual MSC Contest**, a Sports class event to celebrate MSC's 50th anniversary. Contact Gilles Séguin, (514) 377-5737.

3-5 Aug **Ontario Soaring Contest**, Toronto Soaring Club, Sue eaves (519) 268-8973

26 - 30 Aug **CAS Beginners XC clinic**, SOSA. Call Fred Hunkeler (905) 335-1246, or e-mail hunkeler@inforamp.net

31 Aug - 2 Sep **SOSA Dust Bowl**, call Fred above.

club news

REMEMBER ME?

I'm the person who goes into a restaurant, sits down patiently and waits while the waitresses do everything but take my order.

I'm the person who goes into a department store and stands quietly while the sales people finish their little chit-chat.

I'm the person who drives a great distance to a gliding club, waits hours for a flight, and is ignored by members.

Do you know who else I am? I'm the person who *never* comes back, and it amuses me to see you spending a lot of money each year trying to get me back when I was there in the first place ... and all you had to do was to show me a little courtesy.

Reprinted from a club magazine — does it apply to your club?

COLD LAKE SETS CLUB GOALS

With spring here, our club must once again consider the year we have ahead of us. It is going to be a huge one. Changes are ongoing in aircraft and equipment. We will have two launch methods to help lower our costs. The Bergfalke has been retired in favour of a Blanik, along with the ongoing sale of some of our surplus equipment. The organization of the 1996 Nationals is in full swing and is consuming much of our time. The status quo is not idle!

Amongst all this, the mandate of providing inexpensive gliding/soaring for our members is still number one. Being successful in this #1 goal depends not on myself, or any other single member. It depends on us as a group to collectively pool our resources. In other words, it depends on all of us. The question you must ask yourself is this:

"What do I want to achieve this year?"

The answer to that question is of course up to you, but I'll tell you what I'd like some of the goals to be. As individuals, I'd like to see one of us who is cross-country qualified with less than 200 hours take the 1-26 for five cross-countries to try to win the 200 Trophy. I'd like to see another member fly to Chipman, Red Deer or even Cu Nim to try to win the ASC Boomerang Trophy. I'd like to see a newly-licensed pilot strive to become passenger-rated prior to the Maple Flag exercise visiting pilot onslaught. For myself, as a minimum, I would like to set the Canadian multiplace 500 km speed to goal record, and I'll need a partner. As a club, I'd like us to increase our membership by 15 over last year. A member's suggestion that everyone try to achieve at least one of their Silver badge legs in our

Silver anniversary year is terrific. I'd like to have two more pilots take the SAC instructors course.

In other words, I'd like all of us to set a goal we may or may not think is achievable (yet is realistic), but set a goal nonetheless. Progression and challenge is the best way in soaring to have tremendous fun, and I applaud those who are willing to meet that head-on. Accept nothing less.

Dave Mercer, CFI

Dave's words to his club on goals are excellent. It would be a further inducement to excellence if YOUR club had stated soaring goals for the season. It would be a recognition that, by supporting individual goals, the club itself benefits in member skills, enthusiasm, "esprit de club"— and in consequence — member retention. Club CFIs or SOOs: be sure your club has all the badge application and trophy forms, OO application forms, etc. so pilots are not scrambling for paperwork at the last minute.

BLUENOSE ADVENTURE

We had some ridge soaring in the Annapolis Valley last fall. One really clear, sunny, and windy day (40 knots gusting to 55 knots), I chickened out! Other days low ceilings meant flying out away from the ridge at high speed to maintain visibility. Too much for my nerves. Experience at Keystone, PA earlier in May helped to make the local efforts safer.

Poor BSC is a bit shaken after our dismal safety record in recent years. Our beginners have to monitor — and then manage — the energy budget correctly right to the ground. We have moved our launch point further into the field, will have more height in the circuit, more wire break practise, and will emphasize monitoring the ASI and vario as well as the view from the driver's seat. I feel that too little is said about this in the instruction manual.

Our training week will include beginner instruction in the morning and cross-country later in the day when lift starts. The field is drying out nicely and we will certainly fly this weekend and maybe rig a few more birds.

Dick Vine

PRESENTING EAST KOOTENAY

A new SAC club, East Kootenay Soaring Club, is circling into the national fold this year in Cranbrook, BC. It started in 1995 with the purchase of a 2-33 from the defunct North Okanagan Soaring Club, and boasts of a half dozen members, three

private owners and two instructors. A successful ground school through the winter may increase this membership. Tows are provided by Kootenay Airways, a commercial operator at the Cranbrook Regional Airport. The operator has expanded by leasing the 2-33 to a newly-licensed instructor/AME in Creston, BC for early spring and the Creston airport has a 172 and 182 Cessna with tow hooks.

Kootenay Airways operates seven days a week with a Cessna 172 from a 5000 foot paved runway. Airport traffic is moderate with three scheduled Dash 8 flights a day and minimal private owners. Since the valley now has a total of five towplanes from Golden to Creston, the area would make an excellent training ground for the National Team to gain valuable mountain flying experience.

This area has more rainfree days than the Okanagan valley and cloudbase is typically around 12,000 feet. The semi-arid climate provides some incredible soaring conditions throughout the summer months and has the potential for 1000 kilometre flights.

Should anyone be interested in flying in the BEST valley in the country, they can contact Mike Cook at (604) 427-5471 (H).

MSC IS FIFTY

The Montreal Soaring Council is an amalgamation of three gliding clubs which were brought together in the mid to late 40s under the watchful eye of MSC's founder, John Agnew, who died in 1979. The three clubs were the Pratt-Read Gliding Group, the McGill University Gliding Club, and the Canadair Employee's Soaring Club. Then, as now, the club has always depended upon the goodwill of its members for its success and growth, and for that reason we invite all members, past and present, to join with us in celebrating our fiftieth anniversary.

The club's early years were rather nomadic with time spent in St-Eugene, Pendleton, and Granby before moving to Hawkesbury in 1954. Tenure at Hawkesbury was never assured because the airfield was Crown land leased to the Town of Hawkesbury. Finally, in 1964, the club was successful in purchasing the land from the federal government.

MSC presently has a fleet of eleven sailplanes and three towplanes. In addition, a modern clubhouse, in-ground heated swimming pool, trailer park, tenting area, and a playground for children combine to make the club one of the finest in the country.

The highlight of our celebrations will be the anniversary dinner to be held in July or August. For those planning to attend, please contact Dee Trent at:

566 Kindersley Avenue
Town of Mount Royal, QC H3R 1S4
(514) 739-6182

SPRING HAS BEEN THE PITS!

It seems both east and west has suffered a wet and cold spring which has delayed the soaring season for many clubs. As of mid-May, some had not even flown yet, and others like Vancouver and Winnipeg, moved their operation to nearby airports with paved runways to get rolling on spring checkouts. The Winnipeg area, as you saw on TV, had much late snow and flooding. The WGC newsletter reported that their field at Starbuck had the highest snow levels in years. A trip out to the field in early April found the hangar nearly buried in ten foot snow drifts and required digging down six feet to get at the hangar door on the south end — and that was just to the door knob! Calgary's Cu Nim club had a cross-country week planned for 4-12 May which was completely wintered out with snow and rain showers and temperatures hovering around zero all week. Last year at the same time was great with several 300s and a 500 flown. The late start to the season also contributed to the cancellation of the Alberta Provincial contest on the Victoria Day weekend.

ARE WE HAVING FUN YET?

"Flying an aircraft is a highly demanding cognitive and psychomotor task that takes place in an inhospitable environment where pilots are exposed to various sources of stress" from Aviation Safety Letter 1/96

Gee, this is almost enough to make me want to take up gliding!

from WGC *Socktalk*

WARNING ON KROSNO REAR SEAT

It was reported in the MSC *Downwind* that if the Krosno rear seat is not positively latched back into place after being repositioned, it is possible for it to come loose in turbulence or negative 'g' maneuvers and rest on the control torque tubes. While this may not damage the tubes, the control forces required to fly will greatly increase.

Richardson Greenshield

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goes here



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ADVANCED COMPOSITES TRAINING

RAA will soon be opening an international facility for training on the design, manufacture, maintenance, repair, and modification of advanced composite structures. On-site residency programs, for as little as \$55/day, include accommodation, meals, and recreational activities! Call for details.

Wilson J. Boynton, CET, president
RAA Bldg #90, Centralia Airport, Huron Park, ON N0M 1Y0
tel 1-800-817-5545 or (519) 228-7114, fax (519) 228-7015

this photo not available for the pdf file

Here again is the spectacular Morning Glory of Australia (a full description is in the 5/95 issue). For the first time, 3 hang glider pilots also flew it successfully on 30 September 1995 at 7:30am after being inspired by the original story of the soaring flight in "Australian Gliding". The photo was taken at about 4000 feet looking northwest. The top of the cloud was at 3000 and the base was only 500 feet above ground.

SAC SUPPLIES FOR CERTIFICATES AND BADGES

| | | |
|----|-----------------------------------------------------------------------|-----------------------|
| 1 | FAI 'A' badge, silver plate pin | \$ 6.00 |
| 2 | FAI 'B' badge, silver plate pin | \$ 6.00 |
| 3 | SAC BRONZE badge pin (<i>available from your club</i>) | (12 for \$55) \$ 6.00 |
| 4 | FAI 'C' badge, cloth, 3" dia. | \$ 6.00 |
| 5 | FAI SILVER badge, cloth 3" dia. | \$ 6.00 |
| 6 | FAI GOLD badge, cloth 3" dia. | \$ 6.00 |
| 7 | FAI 'C' badge, silver plate pin | \$ 5.00 |
| 8 | FAI SILVER badge, pin | \$45.00 |
| 9 | FAI GOLD badge, gold plate pin | \$45.00 |
| | <i>Items 4-12 ordered through FAI awards chairman</i> | |
| | <i>Items 10, 11 not stocked - external purchase approval given</i> | |
| 10 | FAI GOLD badge 10k or 14k pin | |
| 11 | FAI DIAMOND badge, 10k or 14k pin and diamonds | |
| 12 | FAI Gliding Certificate (personal record of badge achievements) | \$10.00 |
| | Processing fee for each FAI application form submitted | \$15.00 |
| 13 | FAI badge application form (<i>also stocked by club</i>) | n/c |
| 14 | Official Observer application form (<i>also stocked by club</i>) | n/c |
| 15 | SAC Flight Trophies application form (<i>also stocked by club</i>) | n/c |
| 16 | FAI Records application form | n/c |
| 17 | Flight Declaration form (<i>also stocked by club</i>) per sheet | n/c |
| 18 | SAC guide "Badge and Records Procedures", ed. 6 | \$ 7.00 |
| 19 | FAI Sporting Code, Section 3, Gliders, 1995 | \$ 7.00 |
| | available from and payable to the Aero Club of Canada (address below) | |

Please enclose payment with order; price includes postage. GST not required. Ontario residents, add 8% sales tax. Items 1-6 and 13-18 available from SAC National Office. Check with your club first if you are looking for forms.

SAC National Office, 101 - 1090 Ambleside Drive, Ottawa, ON K2B 8G7 tel (613) 829-0536 • fax (613) 829-9497
Aero Club of/du Canada, c/o Bruce Carter, Box 1390, Carleton Place, ON K7C 4L7 tel & fax (613) 257-7712

ARTICLES ACVV POUR CERTIFICATS ET INSIGNES

| | |
|-------------------------------------------------------------------------------------|--|
| Insigne FAI 'A', plaqué argent | |
| Insigne FAI 'B', plaqué argent | |
| Insigne ACVV BRONZE (<i>disponible au club</i>) | |
| Insigne FAI 'C', écusson de tissu, 3" dia. | |
| Insigne FAI ARGENT, écusson de tissu, 3" dia. | |
| Insigne FAI OR, écusson de tissu, 3" dia. | |
| Insigne FAI 'C', plaqué argent | |
| Insigne FAI ARGENT | |
| Insigne FAI OR, plaqué or | |
| <i>Les articles 4-12 sont disponibles au président des prix de la FAI</i> | |
| <i>Les articles 10, 11 ne sont pas en stock - permis d'achat externe</i> | |
| Insigne FAI OR, 10k ou 14k | |
| Insigne FAI DIAMAND, 10k ou 14k et diamands | |
| Certificat FAI de vol à voile (recueil des insignes) | |
| Frais de services pour chaque formulaire de demande soumis | |
| Formulaire de demande pour insignes (<i>aussi disponible au club</i>) | |
| Formulaire de demande pour observateur officiel (<i>aussi disponible au club</i>) | |
| Formulaire de demande pour trophées de vol de l'ACCV (<i>aussi disp. au club</i>) | |
| Formulaire de demande pour records FAI | |
| Formulaire de déclaration de vol par feuille (<i>aussi disponible au club</i>) | |
| ACVV guide des procédures pour FAI certificats et insignes (éd.6 anglais) | |
| FAI Code Sportif, Planeurs, 1995 | |
| disponible et payable à l'Aéro Club du Canada (l'adresse ci-dessous) | |

Votre paiement devrait accompagner la commande. La livraison est incluse dans le prix. TPS n'est pas requise. Les résidents de l'Ontario sont priés d'ajouter la taxe de 8%. Les articles 1-6 et 13-18 sont disponibles au bureau national de l'ACVV.

FAI badges

Walter Weir

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

The following badge legs were recorded in the Canadian Soaring Register during the period 1 Jan to 16 April 1996.

DIAMOND BADGE

86 Allan Graeme Craig Edmonton

SILVER BADGE

870 John deJong York

DIAMOND ALTITUDE (5000 m gain)

Allan Graeme Craig Edmonton 5290 m ASW-15 Cowley, AB

SILVER DISTANCE (50 km)

Arthur Grant Winnipeg 70.0 km Jantar Starbuck, MB
John deJong York 61.6 km 1-26 Arthur, ON

C BADGE (1 hour flight)

2509 Ian Ward Vancouver 1:12 h Blanik L-23 Hope, BC



Omarama – one of the world's greatest soaring sites has produced two outstanding awesome videos



Two years in the making, the Omarama videos have two totally different story lines. Both are 52 minutes long and can only be described as outstanding. They will not be screened on TV before mid-1997 and have been produced by New Zealand's natural history division of the State-owned TV channel.

“Champions of the Wave” is the background story to the discovery of the wave in New Zealand (Omarama) and involves the exciting competition for the Open class title between Schwenk and Schröder of Germany and New Zealander Ray Lynskey at the 1995 World Championships. The filming is spectacular — to get the air to air shots involved the use of a filming helicopter which was available with unlimited hours.

The second video is the story of Lucy Wills (a third generation descendent of the famous English soaring pilot, Philip Wills) as she learns to fly (soar) in the snow-covered Southern Alps against unbelievable scenery. Called “Wind Born” or “Lucy Learns to Fly”, it is a human interest story that prospective new soaring pilots can relate well to.

Available in all formats, the videos are \$US31 each airmailed. Cheque or credit card payments acceptable.

Kiwi Pilot Shop, Private Bag, Tauranga, New Zealand

fax 64-7-552-5370 or email: videos@roake.gen.nz

FAI records

Dave Hennigar

404 Moray Street, Winnipeg,
MB R3J 3A5
(204) 837-1585 H

The following record flight has been claimed:

500 km O & R Speed, Open, citizen's, 150.9 km/h, 24 April 1996, Walter Weir, ASW-20B, C-GGWW. Flown from Julian, PA to Sunrise, VA and return. Surpasses record of 144.3 km/h set by Peter Masak in 1985, also on the ridge.

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SOLAIRE
CANADA

... buying a sailplane from page 11

usually proportional to this value. Under-insuring is common but can be risky. If the cost to repair a damaged sailplane exceeds the insured value minus the salvage value, the sailplane will be totalled. In this case you get the insured value of the sailplane less your deductible. It is important to know that insurance companies expect you to include all instruments, radios, oxygen systems, etc. in your declared value. In case of an accident, these items will be included in the salvage.

If you want to insure the trailer, it is most common, and usually cheaper, to do this with the sailplane policy. But these endorsements don't usually cover liability (protect you if the trailer comes loose during travel and hits something or someone). Check your auto insurance as they usually provide liability coverage for towed vehicles.

Other thoughts Think about how you are going to transact the deal. One idea is to take a cashier's check made out to the seller when you go get the sailplane. Then give the owner the check once you have inspected the sailplane and ensured the paperwork is okay. If a bank is involved, they will probably have their own ideas on how to do this. When sailplanes are transported at purchase, it is customary for the buyer and seller to drive halfway. Other arrangements are usually included in the negotiation of the selling price.

If you are driving to get a sailplane, find out the size of the ball used with its trailer. If it is a 50mm hitch, you can usually use a 1-7/8" ball successfully. Also try to find out how the trailer lights are wired, then try to set up similar wiring for your car. Don't count on this working though, I always take tools to rewire things since this is always a problem. Good luck!

If you are importing a used glider, read the useful article in free flight 5/89. Tony ❖

... mountain course from page 7

Over the airport I noticed the Phoebus was out, with a lot of figures out looking up. I found later they were curious about my location due to the dead radio. I decided to land since I had had two "significant emotion events" in the last five hours, and had to get to Calgary that evening. I spoiled off 6500 feet of hard-earned altitude, did a NORDO approach, and landed to meet my OO. I took two shots of the declaration, and since have been given the Silver altitude/distance legs; only five hours to go.

This was my first visit to a commercial operation, and I found it very different: the cost is higher than a club (at Bluenose six

dollar winch launches are very nice), but the freedom to select a takeoff time whenever you want, and the aircraft you want, is refreshing. The conditions were consistently better than anything I've seen (better than any I saw in Winnipeg in '81). I was disappointed that SAC insurance didn't cover me at Rocky Mountain Soaring.

This flatlander is very impressed with soaring in the Columbia Valley. I thank Uwe and Aaron for all their help. If you want a lot of experience packed into a few days, I highly recommend their mountain soaring course. I had planned to return to Golden in the summer of 1996, but I've bought an Austria, so it'll be 1997 before I get to go back; but go back I will! ❖

Blank ad (your EPS file) goes here



SAC SOARING STUFF / ARTICLES DE L'AIR

May 1996

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| 10 | SAC decal (glider & maple leaf) | 2.00 | | | ✓ | Auto collant “AVCC” (planeur et feuille d’érable) |
| 11 | Decal “I’D RATHER BEE SOARING” | 0.50 | | | ✓ | Auto collant “I’D RATHER BEE SOARING” |
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| Price | Size | Qty. | Amount | T |
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two place

2-33. MSC is replacing its 2-33s. C-FDWB, #85, about 4000h (available now), and C-FZIQ, #110, 3960h (available on delivery of 2nd Krosno). Both in good condition. Offers over \$US10,000 will be considered. Terry Beasley (613) 675-2664 ph&fax.

USED SAILPLANES WANTED FROM CLUBS & PILOTS

If you are considering selling, call *free flight* now, don't wait for the magazine to appear! The sailplane market is tight, and the editor gets regular calls to see if anything is available.

miscellaneous

Magazine giveaway. *SOARING* magazine, fairly complete set from 1960-93, mostly mint condition (missing 1973-74 and a few others). *Sailplane & Gliding* 1965-72 plus 1976-79 and a few earlier issues. Take either lot for the cost of shipping. Harold Eley, (306) 5884-4712.

Tost hook for Cessna? We want to install an E-85 Tost hook on a Cessna 150F. If anyone has done this, we would like to get the drawings or STC applicable to the mod. Thanks. Doug Tomlinson (306) 382-2267 or Tomlinson@cgooa.enet.dec.com

Wanted - Photographs and documentation of LK-10A training glider C-FZAJ (see this cover), and sister ship C-FZAK, which were based in Kingston in the late 40s to early 90s. Call Herrie ten Cate (416) 205-2646, fax (416) 205-3339, email: htencate@toronto.cbc.ca

Wanted - **Winch** in working condition. Contact Paul Chalifour, (604) 426-7322.

Wanted - **handheld radios** and a complete **O2 system** - tanks, regulator, hoses, blinker, etc to install in a Blanik. Contact Darcy Lefsrud (403) 538-3147 (H), (403) 539-8481 (W).

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Wanted, GPS to buy, rent, borrow, or steal for Nationals. Mike Cook (604) 427-5471.

magazines

SOARING — the monthly journal of the Soaring Society of America. Subscriptions \$US43 second class. Credit cards accepted. Box E, Hobbs, NM 88241-7504. (505) 392-1177, fax (505) 392-8154. e-mail: 74521,116@CompuServe.com

NEW ZEALAND GLIDING KIWI — the bi-monthly journal of the New Zealand Gliding Association. Editor, John Roake. \$US32/year (seamail). Private Bag, Tauranga, NZ. Internet: john@roake.gen.nz

SAILPLANE & GLIDING — the only authoritative British magazine devoted entirely to gliding. Bi-monthly. BGA, Kimberley House, Vaughan Way, Leicester, LE1 4SG, England. £16.50 per annum. fax 01 16 251-5939.

AUSTRALIAN GLIDING — monthly journal of the Gliding Federation of Australia. \$US34.80 surface mail, airmail extra. Payable on an Australian bank, int. money order, Bankcard, Visa, Mastercard. Box 1650, GPO, Adelaide, South Australia 5001. fax (08) 410-4711. e-mail: AGEditor@gfa.on.net

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Schleicher. ASK-21, 23, ASW-22, 24, ASH-25. Ulli Werneburg, 1450 Goth Avenue, Gloucester, ON K1T 1E4 tel/fax (613) 523-2581.

Solaire Canada. Ed Hollestelle (519) 461-1464 tel & fax. SZD-55-1, Krosno, PW-5, trailers, GPS, and other sailplane stuff.

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